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Board of Trustees & Mission, Vision & Values

Welcome to Tri-C

Welcome to Cuyahoga Community College (Tri-C®). Tri-C is an innovative and inclusive learning community dedicated to your success and completion. We are delighted that you have selected our College as the place to continue your education and career development. Our faculty, staff and administrators are proud to offer “one door with many options” to assist you in reaching your educational goals.

A Tri-C education is both powerful and valuable. Committed to student success and completion, our College has intentionally designed clear and structured educational experiences that guide students as they progress from their point of entry through attainment of credentials and careers. Through clearly articulated course sequences and program learning outcomes, these nine pathways promote a student’s ability to navigate and complete one of many programs. Embedded within these pathways are stackable certificates that allow students to earn credentials as they complete a pathway on their journey to graduation, transfer, or employment.

Tri-C is redesigning the student experience and working to meet you where you are. With the adoption of an intentional case management approach to student success, we provide students with clearer pathways to degree and certificate completion. You will appreciate the flexibility, choice and convenience of courses that fit your schedule. Select from offerings online, in the classroom or a combination of both. Classes are held in locations throughout the community, close to home or work, with day, evening and weekend options.

Our four attractive campuses offer outstanding amenities, including wireless internet, wellness facilities, libraries and study areas. With the passage of our recent construction bond, we will be able to provide new technology and equipment and expand training facilities to enhance the quality of your Tri-C education.

Services such as academic advising, online or e-advising, tutoring, career counseling and mentoring are available to help you plan your academic journey and succeed in achieving your goals. Our vibrant Office of Student Life, Athletics and Recreation invites you to get involved in student government, collegiate athletics, volunteer activities and a wide array of clubs and organizations.

This is not just our College – it is yours. We invite you to take full advantage of the many opportunities to make it your own and aid in your success. As you move forward on your educational journey, I trust you will find that Tri-C is where futures begin.

Board of Trustees

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Chair

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Vice Chair

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Mission

To provide high quality, accessible and affordable educational opportunities and services — including university transfer, technical and lifelong learning programs — that promote individual development and improve the overall quality of life in a multicultural community.

Vision

Cuyahoga Community College will be recognized as an exemplary teaching and learning community that fosters service and student success. The College will be a valued resource and leader in academic quality, cultural enrichment and economic development characterized by continuous improvement, innovation and community responsiveness.

Values

To successfully fulfill the mission and vision, Cuyahoga Community College is consciously committed to diversity, integrity, academic excellence and achievement of individual and institutional goals. We are dedicated to building trust, respect and confidence among our colleagues, students and the community.
# Important Phone Numbers

Main Number: 216-987-6000 (toll free 800-954-8742)

All Tri-C telephone numbers are in the 216 area code.

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Corporate College® East
- Registration: 216-987-3075
- General Information: 216-987-2800

Corporate College® West
- Registration: 216-987-3075
- General Information: 216-987-2800
ABOUT CUYAHOGA COMMUNITY COLLEGE

Education at Cuyahoga Community College (Tri-C®) is a life-changing experience. More than 900,000 present and former students have been touched by the Tri-C experience. Tri-C has enriched lives and helped build solid futures for all who have attended, from the hopeful students who stood in line at the Brownell School building in 1963 to register for Tri-C’s first classes to today’s students who register online. The far-reaching effects of education at Tri-C have touched not only the individual students, but their families and the entire community as well.

Tri-C faculty, staff and administration are dedicated to providing innovative and flexible services to students and the broader community as a whole. This commitment is expressed by developing a curriculum and delivering an academic experience that will produce students who are competitive within the job market, well-educated and informed. Whether these students are on the threshold of an exciting career, returning for new skills training or simply taking courses in a field of interest, the academic experience at Tri-C meets their specialized needs.

College Climate and Commitment to Diversity and Affirmative Action

The College embraces human diversity and is committed to affirmative action and equal opportunity. The College is also committed to eliminating discrimination and harassment in the workplace and academic environment. These commitments are moral imperatives consistent with an intellectual community that celebrates individual differences, diversity and meaningful individual freedom to pursue professional and educational goals.

Discrimination against any individual based upon race, color, religion, sex (including sexual harassment), pregnancy, national origin, ancestry, disability, age, sexual orientation, gender identity and expression, veteran status, military status or genetic information is prohibited.

Any employee, student or other person who wishes to report discrimination or harassment based on any of the aforementioned protected classes, Section 504 and Title II of the American Disabilities Act (related to disability discrimination) should contact the College’s Director of Diversity & Inclusion at 216-987-0204.

Additionally, the College’s Title IX Coordinator handles reports related to sex discrimination/sexual harassment and can be reached at 216-987-3949. Both are housed at the address below.

Cuyahoga Community College

Jerry Sue Thornton Center
2500 East 22nd St.
Cleveland, Ohio 44115

History of Cuyahoga Community College and the Campuses

On September 23, 1963, the largest first-day enrollment for a community college in the nation’s history took place at Tri-C’s first home – the 19th century Brownell School building in downtown Cleveland, leased from the Cleveland Board of Education. The initial enrollment was just over 3,000 students. Today, Tri-C serves more than 60,000 credit and noncredit students each year.

Now one of the largest colleges in Ohio and the largest in Greater Cleveland, Tri-C has expanded to four modern campuses in downtown Cleveland, Parma, Highland Hills and Westlake, as well as two Corporate College sites in Westlake and Warrensville Heights. Other facilities include District Administrative Services in Cleveland and the Manufacturing Technology Center adjacent to the Metropolitan Campus. Tri-C opened its beautiful and spacious 50,000-square-foot Advanced Technology Training Center (ATTC) in October 2012. The ATTC features high-bay labs, multipurpose training areas and an energy-efficient environment for learning with state-of-the-art technology and curriculum. The ATTC provides students with education, hands-on training and employment preparation for well-paying jobs and provides employers with a constant feeder system of job-ready candidates for the in-demand high-tech industry.

Eastern Campus

Founded in 1971, and conveniently located off of I-271 in Highland Hills, the Eastern Campus serves its surrounding communities with rich opportunities that support learning for a lifetime.

For students wishing to transfer to a four-year institution, the Eastern Campus offers Associate of Arts and Associate of Science degrees. The high quality standards of educational opportunities at Tri-C opened the door for articulation agreements with more than 40 four-year schools, including on-site bachelor degrees through Hiram College.

Students can also choose from any of the direct to job programs unique to the Eastern Campus, where there’s a focus on sustainability and personal health. These areas include Environmental Health and Safety, Massage Therapy, Pharmacy Technology and an award-winning Plant Science and Landscape Technology program. The Eastern Campus is also home to the College’s only Interior Design program.

Staff in the Enrollment Center, Financial Aid, Counseling, Career Center, Student Success Center, Learning Commons (library and technology...
support), Tutoring, Writing Center and the Alfred Lerner Veterans Center provide a strong support system for students.

The campus features the Jack, Joseph and Morton Mandel Humanities Center, which provides high performing students a collaborative, problem-based learning environment with a focus on leadership development and community engagement. Additionally, the campus houses the 600-seat Simon and Rose Mandel Theatre, Gallery East art gallery and Café 4250, a student-run restaurant (part of the College-wide Hospitality Management program). Students and community members can also enjoy a healthy lifestyle with a gymnasium, indoor and outdoor tracks, natatorium, dance studio, fitness center and massage therapy student clinic.

With tremendous community support, a bond approval ushered in the first phase of campus renovations and upgrades this year. State-of-the-art classroom, laboratories, and advanced technology upgrades will support future generations. An outside work barn will benefit the high-performing Plant Science Program, along with the addition of a town center and improved green space.

Directions to Campus: [http://www.tri-c.edu/campuses-and-locations/eastern/directions-to-eastern-campus.html](http://www.tri-c.edu/campuses-and-locations/eastern/directions-to-eastern-campus.html)


**Metropolitan Campus**

Opened in 1969, the Metropolitan Campus is Tri-C's first campus. Located near downtown Cleveland in the Campus District, the campus is easily accessible from Interstates 71, 77 and 90. Classes are offered during the day, evenings, on weekends and online. The Metropolitan Campus houses outstanding science, engineering and health care careers labs. Students learn first-hand in labs similar to those in the work environments for nursing, information technology, manufacturing and recording arts. Allied health laboratories also exist on the campus for many other careers in the health care field including dental hygiene, health information management, surgical technician, emergency medical technician, and occupational and physical therapy.

A state-of-the-art center for nursing provides opportunities for hands-on learning. Students use a human patient simulator, a computer-driven mannequin that mirrors the physical characteristics of a human and allows students to respond to critical care issues. A simulated hospital care unit with 22 beds allows students to study and test simulated patients. The Preventative Care Center (PCC) is a professional, well-equipped health career classroom providing a high quality educational experience for students. Low-cost services and screenings are available in the educational center, where students from the Dietetic Technology, Medical Assisting, Occupational Therapy Assistant and Physical Therapist Assistant programs gain valuable, hands-on experience in their fields. All students are under the direct supervision of licensed professionals when assisting community members, Tri-C faculty, staff and students over the age of 18. The PCC does not require a doctor's referral to utilize its services. Additionally, the Campus houses a Dental Hygiene Clinic provides low-cost preventive dental care and an Optical Clinic providing affordable lenses and limited frames to students and the community.

The Gill and Tommy LiPuma Center for Creative Arts presents the best in local, regional and international artists in the areas of music, dance, theater and performance art. Students can mix music, record and stage musicians as part of the Recording Arts and Technology program.

The Visual Communication and Design program offers degrees and certificates in graphic design, illustration, web and interactive media, photography, digital video and digital film-making, 3D design and 3D animation.

Students with an interest in engineering technology can choose from nine degree programs recognized by the American Society for Engineering Education and the Accreditation Board for Engineering and Technology.

In January 2019 Metro Campus reopened the Campus Center Building after a two year renovation. The renovated Campus Center serves as a hub of the Metro Campus. It houses a food court, student gathering and study spaces, early college programming, office space, Public Safety, Student Life, Student Government, conference rooms and event space, Barnes & Noble Student Bookstore and Starbucks. The community also has access to the center's interactive, creative learning spaces.

Those students successfully completing the associate degree can also take advantage of the on-campus Transfer Connection Center. The Transfer Connection Center helps students successfully navigate the process from degree completion at Tri-C to a four-year college or university.

Metropolitan Campus - Directions: [http://www.tri-c.edu/campuses-and-locations/metropolitan-campus/directions-to-metropolitan-campus.html](http://www.tri-c.edu/campuses-and-locations/metropolitan-campus/directions-to-metropolitan-campus.html)


**Western Campus**

The Western Campus in Parma has served Cleveland's southwest suburbs since 1966, operating in the former Crile Veterans Hospital.

The facilities were replaced in 1975 with a six-building interconnected campus. The sprawling, tree-lined campus offers more than 1,000 day, evening and weekend classes for associate degree programs. Students benefit from industry-standard laboratories and spacious learning environments such as the Advanced Automotive Technology Center. The KeyBank Public Safety Training Center of Excellence was completed in fall 2014. As the only such facility in Northeast Ohio, the center offers the latest in specialized training for EMTs, firefighters and police officers.

The Western Campus provides a full array of student services in the centralized Galleria. These services include the Enrollment Center, Admissions Office, Career Services, Barnes & Noble bookstore, a library, computer labs, a cafeteria and a coffee shop. Students and community members also have access to numerous science, health care and technology labs, a 466-seat theater, an indoor pool, gymnasium, fitness center, outdoor track and athletic fields for soccer, softball, and baseball. Senior residents can take free noncredit courses through the Encore Program, and summer camps provide affordable, fun educational experiences for children and teens.

With the passage of Issue 61 in the fall of 2018 funds were secured for major campus updates. $7,000,000 will be used to create 15,000 square feet of additional classroom space at the Automotive Technology Center, including additional lifts. $34,000,000 will be used for the STEM addition which includes 60,000 square feet of classroom space, which includes new science and IT labs along with student study space. Finally, $17,000,000 will be used to create the Public Safety Training Center Phase II, which will include a scenario based training and equipment center to meet the needs of a seven county region.
The 220-acre Western Campus at 11000 Pleasant Valley Road is accessible from Interstates 71, 77 and 480. Greater Cleveland RTA buses provide public transportation services to the campus.

An extension of the Western Campus, Brunswick University Center (BUC) was built in 2011 in Brunswick. Serving Medina County, BUC offers associate degree programs as well as bachelor's and master’s degree programs in criminal justice, business administration, accounting, forensic accounting and management leadership through partnerships with Tiffin University and Franklin University.

Brunswick University Center at 3605 Center Road (Route 303) is easily accessible from Interstate 71. It is located next to Brunswick High School. The Brunswick Transit Authority provides public transportation to the center.

**Western Campus:** [http://www.tri-c.edu/campuses-and-locations/western-campus/directions-to-western-campus.html](http://www.tri-c.edu/campuses-and-locations/western-campus/directions-to-western-campus.html)


### Westshore Campus

The Westshore Campus is committed to meeting the educational needs of the residents of Cleveland’s Westshore communities. With the Westshore Campus Health Careers and Sciences building opening in 2011 and the extension of the Campus Center Building currently under construction, the campus will provide a centralized and full array of services for students to complete associate degrees for transfer to four-year institutions or earn certificates and degrees leading careers in business and a variety of health careers. The Westshore Campus is a transfer-focused campus with an emphasis on Science, Technology, Engineering, Mathematics and Medical (STEMM) and Associate of Arts and Science programs and degrees.

The Westshore Campus offers a one-stop student services area and a variety of health career programs as well as courses in liberal arts, business, IT, pre-engineering, nursing, emergency medical technology, English as a second language and other subject areas. The expanded campus will offer a Technology Learning Center, a library, as well as food service and dedicated amenities for both veterans and honor students. The campus will house twelve different labs including STEM, IT and health career labs (featuring a human patient simulator and an anatomage table).

The Westshore Campus has a strong commitment to sustainability as noted by the LEED Gold status of its initial facility.

The Westshore Campus is easily accessible from Interstates 90 and 480.


**Interactive Map:** [https://myatlascms.com/map/?id=754#!ct/10483,9835,9847,9846,9845,9844,9843,9842,9841,9840,9839,9838,9837,9836,9833,9834,9832,9831,9830,9829,9828,9827,9826,9825,9824,9816,9836,9814,9813,9812,9815,9810,9811?ce/10454?mc/41.499357830207124,-81.69289018795791?z/16ology, English as a Second Language and other subject areas. The campus also offers a Technology Learning Center, library, six science labs and four health careers labs, including a human patient simulator. The Campus Center Building will offer flexible instruction space, on site food service facilities, and expanding lodging and entertainment businesses. The program also

features two student-run restaurants, Café 4250, located on the Eastern Campus and Alere, located at the Jerry Sue Thornton Center.


**Interactive Map:** [http://myatlascms.com/map/?id=756#!ct/10483,9835,9847,9846,9845,9844,9843,9842,9841,9840,9839,9838,9837,9836,9833,9834,9832,9831,9830,9829,9828,9827,9826,9825,9824,9816,9836,9814,9813,9812,9815,9810,9811?ce/10454?mc/41.499357830207124,-81.69289018795791?z/16ology, English as a Second Language and other subject areas. The campus also offers a Technology Learning Center, library, six science labs and four health careers labs, including a human patient simulator. The Campus Center Building will offer flexible instruction space, on site food service facilities, and expanding lodging and entertainment businesses. The program also

### Community Education

Believing that learning should and does continue throughout life, Cuyahoga Community College (Tri-C®) offers a variety of affordable and convenient community education courses. These noncredit courses are designed to promote individual development and improve one’s overall quality of life.

### Audiences We Serve:

**Community Education**

Tri-C offers opportunities for personal development through a variety of noncredit courses: creative sewing, culinary, digital photography, event planning and other general interest courses. Learn more about our community education courses and view current offerings.

**Encore 55+ Learning**

For more than 40 years, Tri-C has been a premier provider of education to individuals 55 and older. Based on the concept of providing adult education within an academic environment, Encore holds an educational standard that recognizes the intellectual interests of 55+ students. To enhance learning opportunities and community engagement, Tri-C offers both on- and off-campus experiences. The learning possibilities are endless through Encore Campus Fridays and the Neighborhood Scholars programs.

*Please note that Encore 55+ Learning courses are not eligible for Program 60.*

**Encore Campus Fridays**

Encore Campus Fridays allows participants to take multiple courses for one low registration fee. Three seven-week sessions and a four-week summer session are held at Tri-C’s Eastern and Western campuses. Instructors include Tri-C faculty, retired educators and professionals from the arts, business, and health and wellness.

**Neighborhood Scholars**

In cooperation with community partners, Encore presents opportunities for personal enrichment at locations throughout Greater Cleveland.
Courses include: Cleveland Museum of Art Series, Places of Worship Tours, Discover Cleveland Tours, Coffee With a Curator, CanalWay Tour and more!

**Youth PROGRAMS and summer camps**
Whether your child is a young performer or a budding engineer, Tri-C’s youth programs and summer camps will help them discover their passions and talents. Learn more about our youth programs.

**Workforce, Community and Economic Development Division**

The Workforce, Community and Economic Development Division (WCED) at Tri-C partners with business and industry, government organizations and the community to provide credit and noncredit fast-track training for individuals and businesses; employee and leadership development solutions for professionals and managers; and continuing education and community programs.

**Job Link Services**
Job Link Services (JLS) assists with recruiting and assessing qualified candidates to support workforce training programs. JLS offers employability training that includes soft skills, work ethic, communications and teambuilding as well as job readiness skills such as resume preparation, interviewing techniques, employer networking and online job search. Job placement assistance and retention services are also available.

**Manufacturing Technology Center of Excellence**
The Manufacturing Technology Center of Excellence provides in-demand training that meets the needs of the fast-growing manufacturing industry in Northeast Ohio. Individuals receive affordable, high quality training from industry professionals leading to high demand, portable and stackable skill credentials. The division offers credit, noncredit, certificate and customized training programs.

The Manufacturing Technology Center at Tri-C’s Metropolitan Campus in downtown Cleveland is the hub for manufacturing training at the College. The facility spans more than 113,000 square feet and is the largest industrial manufacturing training center in Northeast Ohio.

The center is also home to the Ideation Station Fab Lab offering 3D printing, laser engraving and other creative technologies. The most recent addition to the center is the Mobile Training Unit, through which the College can provide training in an integrated, customized classroom and lab environment at virtually any location.

Programs offered include:
- CNC Machining
- Blueprint Reading
- Computer-Aided Design (CAD)
- Electronics Assembly
- Industrial Welding
- Industrial Maintenance
- Mechatronics
- Precision Machining
- Programmable Logic Controls
- Quality Control
- Shop Math
- Siemens
- Tool and Die Apprentice
- 3D/Additive Manufacturing
- Blueprint Reading
- CNC Machining
- Computer-Aided Design (CAD)
- Electronics Assembly
- Industrial Maintenance
- Mechatronics
- Precision Machining
- Programmable Logic Controls
- Quality Control
- Shop Math
- Siemens
- Tool and Die Apprentice

**Public Safety training Center of Excellence**
Tri-C’s Public Safety Training Center of Excellence has provided training to public safety professionals for more than three decades. The police, private security and fire academies provide state-certified training for police officers, firefighters, security officers and first responders.

Tri-C’s law enforcement academies are certified through the Ohio Peace Officer Training Commission (OPOTC). Training takes place at the KeyBank Public Safety Training Center on the College’s Western Campus in Parma. Tri-C offers four basic OPOTC-certified academies: Peace Officer Basic Training, Private Security Training, Bailiff and Corrections.

The Fire Training Academy facilities are also located on the Western Campus. The academy is chartered by the State of Ohio’s Department of Public Safety and Division of Emergency Medical Services. With both day and evening schedules available, the Fire Training Academy provides academic and practical skills training for Level I and II firefighters and graduates approximately 200 students per year.

**Transportation center of excellence**
The Transportation Center provides high quality workforce training to meet the needs of employers in the transportation, distribution and logistics industries.

Located at Heritage Business Park in Euclid, the Transportation Center operates in an industrial environment and provides hands-on training utilizing industry-standard equipment, transportation vehicles and a driving simulator.


**Center for Health Industry Solutions**
The Center for Health Industry Solutions provides training tailored to meet the health care industry’s clinical and non-clinical workforce needs. The center provides training to address critical health care employment shortages through its wide selection of continuing education and professional certification programs.

The center works closely with its advisory board, consisting of industry representatives, to develop accelerated training and education programs that quickly meet critical workforce needs. Day, evening and weekend classes are available at multiple Tri-C campuses.
Entry-level career programs/certifications:

- State Tested Nursing Assistant (STNA)
- Dental Assistant - Radiography Initial Training, Radiation Protection Update Training and Managing Medical Emergencies for Dental Hygienists
- Community Health Worker/Lay Navigator
- Patient Access Specialist
- Certified Professional Coding Program
- Patient Care Nursing Assistant

The center also works with health care organizations to develop customized solutions to meet specific workforce needs. Programs stay current with the rapidly changing health care industry, and expert instructors focus training on the technical and soft skills needed to succeed on the job. Whether you are a health care professional searching for career advancement or considering a career change to the health care field, the Center for Health Industry Solutions offers high quality programs to meet your needs.

Corporate College

Founded in 2003, Corporate College offers Northeast Ohio businesses and individuals professional training and development, along with state-of-the-art meeting and conference space. As part of the College’s Workforce, Community and Economic Development Division, we provide access to industry experts, skilled training professionals and professional development programs to ensure we deliver the right solutions for your unique business needs. Corporate College has locations in Warrensville Heights and Westlake and offers classes at the Brunswick University Center.

Customized Training

Corporate College understands your unique business challenges and provides customized solutions to meet your strategic organizational goals. Our training and talent management solutions help organizations become more efficient, grow employee skills and retain top talent. We strive to improve individual, team and organizational performance. Programs and services are delivered to employee groups, either at the company facility or at one of our Corporate College locations.

Professional Development

Corporate College offers the ideal combination of courses to help today’s professional increase proficiency in current skills or to gain new skills. Our courses and programs align with current business and industry standards, helping professionals gain necessary skills and a competitive edge to move to the next level of their career.

Training Topics

- Lean and Lean Six Sigma
- Leadership
- ISO, Quality and Compliance
- Project Management
- Information Technology
- State Tested Nursing Assistant and Medical Coding & Billing
- Finance, Tax & Payroll
- Customer Service
- Home Inspection

Conference Center and Hospitality Services

With Corporate College as your partner, planning that special event is easy. Our experienced team of event planners will focus on your event details so you can stay focused on your business agenda. Your Corporate College event planner will coordinate with our energetic and professional staff to ensure your meeting is a success. In addition to event planners, our team includes concierge staff, an audio-visual technician, technology support staff and world-class catering.

Tri-C Information Technology Center of Excellence

The Information Technology Center of Excellence provides industry-certified training tailored to meet Northeast Ohio’s IT needs. With flexible course schedules offered both online and in the classroom, the center provides training and professional certification programs for individuals seeking a new career in IT.

Available programs include:

- Cyber Security
- Cloud Computing/Virtualization
- Analytics/Big Data
- Mobile Development/User Experience Focus
- Agile Development/Project Management
- Cleveland Codes Software Developer Academy

About Us

Founded in 2003, Corporate College offers Northeast Ohio businesses and individuals professional training and development, along with state-of-the-art meeting and conference space. As part of the College’s Workforce, Community and Economic Development Division, we provide access to industry experts, skilled training professionals and professional development programs to ensure we deliver the right solutions for your unique business needs. Corporate College has locations in Warrensville Heights and Westlake and offers classes at the Brunswick University Center.

Mission Statement

Corporate College’s mission is to provide high quality training and consulting expertise that drives business growth for organizations and professionals.
Accreditation and Institutional Memberships

The Higher Learning Commission

Cuyahoga Community College is accredited through the Higher Learning Commission (HLC). Current information regarding the College's accreditation may be found at: http://www.tri-c.edu/about/accreditation. Upon request, the College makes available for review documents describing the institution's accreditation and state licensure to all current and prospective students. Please contact the Office of Learning & Engagement at 216-987-3464 for further information.

Information about filing student complaints can be found at the Higher Learning Commission's website (https://hlcommission.org/HLC-Institutions/complaints.html) and at the Ohio Department of Higher Education's website (https://www.ohiohighered.org/students/complaints). Be advised that these institutions may require the student to exercise any appeal procedures at the College prior to accepting a complaint. Please visit the appropriate institutional website for the most current guidance on filing a complaint.

The HLC office is located at 230 South LaSalle Street, Suite 7-500, Chicago, IL 60602-1411. For more information, call 800-621-7440 or visit https://www.hlcommission.org/.

Northeast Ohio Council on Higher Education

Tri-C is a member of the Northeast Ohio Council on Higher Education. This is an organization of 14 Northeast Ohio colleges and universities that represents a partnership among these institutions of higher education and the business and industrial community.

Established in 1951, the Council works to address the common needs and problems of higher education in Northeast Ohio.

Tri-C holds institutional memberships in numerous national, educational, professional, and accrediting organizations, as well as local area chambers of commerce. In addition, a number of Tri-C’s career programs are approved or accredited by appropriate specialized associations or agencies.

Some of these memberships are:

50 Club Of Cleveland
Achieving The Dream (ATD)
American Association For Paralegal Education (AAFPE)
American Association of Collegiate Registrars and Admissions Officers (AACRAO)
American Association of Community Colleges (AACC)
American Association of State Colleges and Universities (The Democracy Commitment)
American Bar Association (ABA)
American College Personnel Association (ACPA)
American Council on Education (ACE)
American Dental Education Association (ADEA)
American Student Association of Community Colleges (ASACC) (Business Office)
Association For Student Conduct Administrators (ASCA)
Association of American Colleges and Universities (AACU)
Association Of Community College Trustees (ACCT)
Association Of Governing Boards (AGB)
Association Of Performing Arts Presenters (APAP)
Association of Physical Plant Administrators (APPA)
Association of Veterinary Technician Educators (AVTE)
Berea Chamber of Commerce
Brecksville Chamber of Commerce
Broadview Heights Chamber of Commerce
Campus District
Cleveland-Akron Financial Services Professionals
College and University Professional Association for Human Resources (CUPA-HR)
College Entrance Examination Board (College Board)
Columbus State Community College (QM Consortium)
Community College Humanities Association (CHHA)
Council for Advancement and Support of Education (CASE)
Council For Higher Education Accreditation (CHEA)
Council for Opportunity in Education (COE)
Creative Arts Network (CAN)
Edison Biotechnology Institute (EBI)
Educators and Community Helping Hispanics Onward (ECHHO)
Employers Resource Council (ERC)
Fairlawn Chamber of Commerce
Fund For Our Economic Future
Gateway to College National Network
General Motors Automotive Service Education Program (GM ASEP)
Global Cleveland
Government Finance Officers Association (GFOA)
Greater Cleveland Partnership
Greater Medina Chamber of Commerce
Higher Learning Commission
Hispanic Alliance, Inc.
International Association of College Law Enforcement Administrators (IACLEA)
International Council of Fine Arts Deans (ICFAD)
League For Innovation in the Community College
Medina County Economic Development Corporation
Middleburg Heights Chamber of Commerce
Midwest Institute for International/Intercultural Education (MIIE)
National Alliance for Partnerships in Equity (NAPE)
National Alliance of Community and Technical Colleges (NACTC)
National Alliance of Concurrent Enrollment Partnerships (NACEP)
National Association for College Admission Counseling (NACAC)
National Association for Community College Entrepreneurship (NACCE)
National Association of Campus Cards Users (NACCU)
National Association of College and University Business Officers (NACUBO)
National Association of Colleges and Employers (NACE)
National Association of Educational Procurement (NAEP)
National Association of Foreign Student Advisers (NAFSA)
National Coalition of Certification Centers (NC3)
National College Testing Association (NCTA)
National Collegiate Honors Council (NCHC)
National Community College Benchmarking Project (NCCBP)
National Community College Hispanic Council (NCCHC)
National Council for Workforce Education (NCWE)
National Council On Black American Affairs (NCBAA)
National Junior College Athletic Association (NJCAA)
National Network of Health Careers Programs in Two-Year Colleges (NN2)
NEOVETS, Inc.
North Royalton Chamber of Commerce
Northeast Ohio Council on Higher Education (NOCHE)
Northeast Ohio Regional Library System
Northeast Ohio Trade Economic Consortium (NEOTEC)
Northern Medina County Chamber Alliance
Northern Ohio Minority Supplier Development Council (NEOMSDC)
Ohio Alliance of Dual Enrollment Partnerships (OADEP)
Ohio Association of College Registrars and Admissions Officers (OACRAO)
Ohio Association of College and University Business Officers (OACUBO)
Ohio Association Of Community Colleges (OACC)
Ohio Bursars Association (OBA)
Ohio Campus Compact
Ohio Community College Athletic Association (OCCAC)
Parma Area Chamber Of Commerce
Regents of the University of California (Imagining America: Artists & Scholars in Public Life)
Shaker Heights Chamber of Commerce
Strongsville Chamber of Commerce
Team NEO
UpCycle
Wright State University (Higher Education Recruitment Consortium-HERC)
ACADEMIC INFORMATION

2019-2020 Academic Calendar

Complete list of Academic Progress Reporting dates and Withdrawal dates are available on the Academic Calendar Located at: http://www.tri-c.edu/academic-calendar/index.html. Dates are subject to change.

Fall Semester 2019

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<thead>
<tr>
<th>Session</th>
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<tr>
<td>A</td>
<td>8-Week</td>
<td>August 26, 2019-October 20, 2019</td>
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<tr>
<td>B</td>
<td>8-Week</td>
<td>October 21, 2019-December 15, 2019</td>
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<td>O</td>
<td>14-Week</td>
<td>September 9, 2019-December 15, 2019</td>
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Spring Semester 2020

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<td>A</td>
<td>8-Week</td>
<td>January 13, 2020-March 8, 2020</td>
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<tr>
<td>B</td>
<td>8-Week</td>
<td>March 16, 2020-May 10, 2020</td>
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<td>O</td>
<td>14-Week</td>
<td>January 27, 2020-May 10, 2020</td>
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Summer Session 2020

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<tr>
<td>J</td>
<td>5-Week</td>
<td>May 26, 2020-June 28, 2020</td>
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<td>K</td>
<td>5-Week</td>
<td>June 29, 2020-August 2, 2020</td>
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<td>L</td>
<td>8-Week</td>
<td>June 8, 2020-August 2, 2020</td>
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Advanced Placement Exams

The State of Ohio, working with public institutions of higher education, has initiated policies to facilitate the ease of transition from high school to college, as well as between and among Ohio’s public colleges and universities.

Beginning in the fall term 2009:

- Students obtaining an Advanced Placement (AP) exam score of 3 or above will be awarded the aligned course(s) and credits for the AP exam area(s) successfully completed.
- General education courses and credits received will be applied toward graduation and will satisfy a general education requirement if the course(s) to which the AP area is equivalent fulfill(s) a requirement.
- If an equivalent course is not available for the AP exam area completed, elective or area credit will be awarded in the appropriate academic discipline and will be applied toward graduation where such elective credit options exist within the academic major.
- Additional courses or credits may be available when a score of 4 or 5 is obtained. Award of credit for higher score values varies depending on institution and academic discipline.

In academic disciplines containing highly dependent sequences (e.g., science, technology, engineering and mathematics), students are strongly advised to confer with the college/university advising staff to ensure they have the appropriate foundation to be successful in advanced coursework within the sequence. Learn more about AP credit awards at Tri-C.

Change of Major Field of Study

Students should change their major field of study by the 15th day of the semester. Any changes of major received after the 15th day of the semester will become effective for the following semester. Students can update their academic major by submitting changes through my Tri-C space. It is suggested that students check with a counselor before changing majors.

Cross-Registration

Qualifying full-time Tri-C students (currently registered for 12 or more credits) may register for one course per semester during the regular academic year, on a space-available basis, at any of the institutions participating in the Cross-Registration program. Area colleges and universities participating in this program include Baldwin Wallace University, Case Western Reserve University, Cleveland Institute of Art, Cleveland State University, John Carroll University, Kent State University, Notre Dame College, Ursuline College and Youngstown State University.

These host institutions waive tuition and general fee charges for courses taken as part of the Cross-Registration program. Tri-C students are billed for the number of credits taken at the host institution using the Tri-C tuition rate once confirmation of registration is received from the host institution. Tuition and fees assessed for a Cross-Registration Program course will be equal to tuition and fees paid by other Tri-C students with the same total number of credits and residency status.

Participation must be approved by Tri-C and course availability must be verified by the host institution. Cross Registration forms and registration information are available in the Enrollment Center on each campus. Cross-registration is not available during the summer session. Cross Registration available on the Friday prior to the start of class.

DegreeWorks

DegreeWorks is a software tool that significantly eases the academic advising process by comparing academic program requirements against a student’s academic history. The resulting report lists courses taken that apply toward graduation, courses yet to be taken and courses that do not apply to the program major. The ability of both students and staff to obtain this information is part of an effective academic advising program.

Academic Support Services

- Tutoring
- Learning Commons
- Student-Faculty Conferences
- Youth, Adult, and Community Connections
Tutoring

Tutoring at each campus provides students the resources to improve skills, develop strengths and maximize achievement in many college courses. Study guides, outlines and books can be reviewed to help students organize work. Individual and small group tutoring is available in many academic subjects. The online tutoring service Smarthinking is an additional resource available to students in select subject areas. Workshops on specified topics are offered at several campus tutoring centers.

Visit or call to find out how to learn more effectively:

- Eastern Campus: 216-987-2343 • ESS 1108
- Metropolitan Campus: 216-987-4253 • MSS 4th floor
- Western Campus: 216-987-5683 • WTLC GT 115
- Westshore Campus: 216-987-5902 • WSHCS Atrium (under the stairs)
- Westshore at CCW: 216-987-5902 • CCW 80 (lower level, Learning Café) • CCW 16 (Math Lab)

Learning Commons

A full range of library, tutoring, academic computing and educational media support is available to students and faculty in the Learning Commons on each campus.

Each campus Learning Commons provides access to a variety of resources and information – librarians to assist with research, course materials placed on reserve by instructors, study spaces, computer labs, laptops and equipment loans. Students may use Tri-C’s College-wide catalog to browse a collection of more than 170,000 books, periodicals, newspapers, non-print media, materials from local libraries and academic resources throughout the state of Ohio.

The open computer lab provides access to the latest learning technologies – computers, academic software, network resources and information services. Learning Commons staff is available Monday through Saturday to help with College-related computer applications.

Each campus Learning Commons also provides a wide variety of tutoring and media support services including access to and setup of equipment for classrooms and events.

Student-Faculty Conferences

Tri-C’s full-time faculty members maintain scheduled office hours to confer with students regarding classwork and related matters. Office hours are announced by instructors and posted outside of faculty offices. Students are urged to familiarize themselves with the schedules and to contact their instructors during those hours. Part-time (adjunct) faculty are encouraged, but not required, to hold office hours – however, they are available to meet with students upon request, generally before or after class. Adjunct faculty include information about their availability for student conferences and the process for requesting such meetings in their syllabi.

Tri-C Youth, Adult, and Community Connections

The Office of Youth, Adult, & Community Connections (formerly called College Pathway Programs) is a component of Cuyahoga Community College’s Division of Access, Learning and Success. This unit provides services to both current and prospective students, including recruitment and enrollment growth initiatives and K-12 programming. Included in the Office of Youth, Adult, & Community Connections are Youth and Early College, Innovative and Emerging Programs, and Adult-Focused Programs.

The Youth, Adult, and Community Connections Office provides programs and services to improve access, retention, and success for those in targeted groups (e.g., low income, first generation, minority, women in transition, youth, recipients of public resources) among the eligible adult and youth populations in Greater Cleveland. Individual program descriptions appear below. Visit the Youth, Adult & Community Connections website at www.tri-c.edu/pathways.
Youth, Adult and Community Connections share common goals:

• To increase educational opportunities for youth;
• To assist students in gaining access to higher education;
• To motivate students to participate in college courses while in high school; and
• To provide opportunities to foster student success through interventions such as assessment, coaching, and mentoring.

Strategic partnerships with area school districts enable the Youth, Adult, & Community Connections Office to customize academic and student support services to meet the needs of students from diverse backgrounds. Cuyahoga Community College is committed to personal and educational excellence through its affordable and efficient approach to higher education.

• Adult-Focused Programs
• Innovative and Emerging Programs
• TRIO Student Support Services (SSS)
• Youth and Early College Programs

Innovative and Emerging Programs

Gateway to College

The Gateway to College Program is designed for young adults, ages 16 to 20, who have dropped out of high school, or are significantly behind in credits and unlikely to graduate on time. This dual credit program allows students to complete their high school requirements while simultaneously progressing toward a college degree or certificate. During their enrollment in the program, students receive wrap-around support, one-on-one advising, and mentoring from the team while at the same time assisting them with transitioning to post-secondary education.

Eligibility requirements include

• Interested in completing a high school diploma
• Willing to make a long-term commitment to complete high school and progress on to a college degree
• Enroll at a partner School
• Be behind in high school credits (for age and grade), with a history of absenteeism and low GPA
• Be able to complete high school diploma requirements by age 21
• Reading at an eighth grade level or higher

Visit http://www.tri-c.edu/gateway-to-college/index.html or call 216-987-0244 for more information.

North Coast Tech Prep

The Ohio College Tech Prep program is a seamless, non-duplicative, integrated pathway of education and experience that begins in 11th grade and continues through college and beyond. The curriculum reflects real-world technical careers in high demand today and prepares students to be college and career ready. The Tri-C Tech Prep program connects high school and college education to high-skill and high-demand technical employment. Students are enrolled in the Tech Prep program through their high school district.


Historically Black Colleges and Universities (HBCU) Transfer Program

HBCU Transfer Initiative is a partnership between Cuyahoga Community College, United Negro College Fund, and the Cleveland Council of Black Colleges Alumni Association. Students are urged to complete their associate degree at Tri-C and move directly into their junior year at an Historically Black College and University. Students majoring in most areas can also earn credits through the project’s dual enrollment component, and transferring credits is a seamless process.

A major advantage for students is saving thousands of dollars by beginning their coursework in high school or at Cuyahoga Community College. Call 216-987-3260 for more information.

TRIO Student Support Services (SSS)

The TRIO SSS programs provide needed support services to students of the Eastern, Metropolitan and Western/Brunswick Campuses through graduation and/or transfer to a four-year institution.

Services include:

• academic and financial aid advising
• tutoring
• study groups
• career exploration
• technology assistance
• cultural activities
• transfer assistance

Qualified participants include U.S. citizens or permanent residents who are income eligible and first-generation college students with a need for academic support services. Students may participate in only one campus SSS program. Student Support Services is funded by the U.S. Department of Education and Cuyahoga Community College. For more information, visit www.tri-c.edu/sss or call:
Youth and Early College Programs

Youth and Early College Programs share common goals:

• To increase educational opportunities for youth;
• To assist students in gaining access to higher education;
• To motivate students to participate in college courses while in high school; and
• To provide opportunities to foster student success through interventions such as assessment, coaching and mentoring.

The College Success Program

The College Success Program is a partnership between Cuyahoga Community College and the Cleveland Metropolitan School District (CMSD) to prepare students to successfully transition into college-level courses. Many high school graduates place into remedial math and English courses costing them additional time and money and making it less likely that they will finish college. The College Success Program seeks to remedy these math and English deficiencies in CMSD graduates by increasing the number of students who successfully progress through high school, graduate, enroll in post-secondary education at the college-level and succeed in their college coursework.

The College Success Program has three components:

• College Success Outreach Centers at six selected CMSD high schools;
• the College Success Summer Academy at Tri-C’s Metropolitan Campus; and
• a unique First Year Experience for students transitioning to Cuyahoga Community College upon high school graduation.

The program is funded by Cuyahoga Community College. Visit http://www.tri-c.edu/college-success-program/index.html or call 216-987-4949 for more information.

Educational Talent Search (ETS)

Educational Talent Search is a federally funded pre-college program created in 1965 as part of the Higher Education Act. It is designed to motivate and develop the skills necessary for students to be successful in secondary school, graduate and enroll in an institution of post-secondary education. Among the pioneer TRIO programs in the country, Cuyahoga Community College’s Educational Talent Search program has been in existence since 1968.

Students in grades six through 12 are eligible to participate. Cleveland Metropolitan School District students who are low-income and potential first-generation college students are targeted for participation.

Educational Talent Search advisors and instructional assistants provide the following services:

• ACT, SAT, PSAT Test Preparation
• Ohio State Test Preparation
• Study Skills Workshops
• Personal Development
• Summer Enrichment Program
• Tutoring
• Mentoring
• College Admissions Assistance
• Financial Aid Counseling and Application Assistance
• Scholarship Information

Students also participate in college tours as well as cultural activities. Educational Talent Search serves over 1,250 students annually. Visit http://www.tri-c.edu/trio-programs/educational-talent-search.html or call 216-987-6310 for more information.

High Tech Academy (HTA)

High Tech Academy is an innovative dual enrollment program in which Cleveland Metropolitan School District (CMSD) students in grades 10 through 12 attend a half-day of classes at their high schools and a half-day of college classes at Tri-C’s Metropolitan Campus. HTA offers a rigorous curriculum that helps develop students’ academic, technical, and leadership skills.

Students can choose classes from various HTA pathways:

• college preparatory (liberal arts)
• engineering technology
• information technology
• business management
• health careers, and
• creative arts.

Ultimately, the college-level classes count toward graduation requirements in high school. This educational collaboration coordinates programming for more than 275 CMSD high school students annually. Set apart from traditional College Credit Plus, the High Tech Academy offers many enrichment components to foster achievement, career exploration, and features a required community service component. CMSD and Tri-C administrators oversee daily program operations on campus.

Founded in 2000, HTA received major support from National City and NASA’s Goddard Space Flight Center. Now, with generous and continuous support from PNC, High Tech Academy students are afforded unique opportunities and experiences with tuition costs paid on their behalf.

Upon high school graduation, HTA seniors have an opportunity to apply for the HTA Completion Scholarship, established for students who wish to continue on to earn an associate degree from Tri-C. Other students transfer to four-year colleges and universities or enter the workforce. More than 1,200 students have earned college credits through HTA, with more than 66 having earned an associate degree at the same time as their high school diploma. Visit http://www.tri-c.edu/get-started/
early-college/high-tech-academy.html or call 216-987-3549 for more information.

**Upward Bound (UB)**

The Upward Bound TRIO Program (UB) is a year-round pre-college program for Cleveland Metropolitan School District high school students. It is designed to assist students in graduating from high school, entering, and graduating from college. Upward Bound works in cooperation with the schools, Tri-C, and the community to provide educational opportunities and support to achieve these goals.

Upward Bound provides:

- college
- career and financial aid counseling
- tutoring
- field trips
- test preparation for the OST, ACT, and SAT tests

Students also attend a six-week summer session, and graduating seniors participate in an eight-week bridge component. Upward Bound is funded by the U.S. Department of Education. Call 216-987-4958 or visit [www.tri-c.edu/trio-programs/upward-bound](http://www.tri-c.edu/trio-programs/) for more information.

**Upward Bound Math/Science (UBMS)**

Upward Bound Math/Science is a pre-college TRIO program funded by the U.S. Department of Education. UBMS provides an academically enriching and rigorous year-round math and science curriculum to prepare participants for academic success in high school and post-secondary education. The Program targets high school students in the Cleveland Metropolitan School District who are interested in science, technology, engineering, and mathematics (STEM) careers.

Program participants are recruited from the following target high schools:

- East Technical High School
- New Tech East High School
- Garrett Morgan High School
- Jane Addams Business Careers Center
- Lincoln-West High School

Academic support services such as tutoring and ACT/SAT prep are provided to participants throughout the academic year. In addition, year-round academic planning and advising, hands-on project-based learning, exposure to STEM professionals, monthly educational workshops, technology training, financial literacy, assistance with scholarship searches, and participation in a six-week summer STEM academy are provided. Upon completion of specific criteria, participants receive a monthly stipend. Call 216-987-4927 or visit [http://www.tri-c.edu/trio-programs/upward-bound-math-and-science/index.html](http://www.tri-c.edu/trio-programs/upward-bound-math-and-science/index.html) for more information.

**Aspire**

The Aspire program offers free classes for adults who need help acquiring the skills to be successful in college, training, or employment.

Our classes are offered to:

- Improve Academic Skills
- Prepare students for the workforce
- Assist with HSE (High School Equivalency) test preparation
- Improve English for Speakers of Other Languages (ELL/ESOL)
- Prepare for a job, college or training

Morning and evening classes are offered at Cuyahoga Community College's Eastern, Western, Westshore, Corporate College West, and Metropolitan campuses as well as many other locations within Cuyahoga County. The program is for adults ages 16 and older whose skills are below a 12th-grade level.

Aspire is part of the University System of Ohio and is funded by federal and state grants through the Ohio Department of Higher Education.

For more information or to register, visit [www.tri-c.edu/aspire](http://www.tri-c.edu/aspire) or call:

- Metro Campus: 216-987-3029
- Eastern Campus: 216-987-2135
- Eastern Suburbs and Cleveland East: 216-371-7138 or Euclid only 216-261-5006
- Western Suburbs and Cleveland West: 216-529-4240

**Adult Diploma Program**

The Adult Diploma Program offers adults, ages 22 and older, residing in Cuyahoga County, an opportunity to earn an high school diploma. The program includes career advisement, a national career readiness certificate, and preparation for in-demand careers in Northeast Ohio that require a high school diploma. Participants complete their Ohio high school diploma requirements by participating in a competency-based learning program that demonstrates a mastery of skills to prepare them for in-demand career fields such as health care, manufacturing, logistics, and construction. There is no cost to participants except time and commitment. Cuyahoga Community College launched this program in July 2015 with funding from the Ohio Department of Education. For additional information, visit [www.tri-c.edu/adultdiploma](http://www.tri-c.edu/adultdiploma) or contact the program at 216-987-0610 or adultdiplomaprogram@tri-c.edu.
Adult-Focused Programs

Adult Diploma Program
The Adult Diploma Program offers adults, ages 22 and older, residing in Cuyahoga County, an opportunity to earn an high school diploma. The program includes career advisement, a national career readiness certificate, and preparation for in-demand careers in Northeast Ohio that require a high school diploma. Participants complete their Ohio high school diploma requirements by participating in a competency-based learning program that demonstrates a mastery of skills to prepare them for in-demand career fields such as health care, manufacturing, logistics, and construction. There is no cost to participants except time and commitment. Cuyahoga Community College launched this program in July 2015 with funding from the Ohio Department of Education. For additional information, visit www.tri-c.edu/adultdiploma or contact the program at 216-987-0610 or adultdiplomaprogram@tri-c.edu.

Inter-Faith Community Service Institute
The goal of this College-wide initiative is to provide training and information to faith-based institutions so they can assist parishioners and community members in achieving their academic, educational and workforce-related aspirations.

The desired outcome of these partnerships is to strengthen connections between Cuyahoga Community College and the faith community. Similar programs at other colleges have recognized that individuals who receive critical information about education and jobs in a familiar location from someone they know are more likely to enroll and focus to finish high school/GED, college, or workforce programs. Visit http://www.tri-c.edu/community/community-services/faith-based-community-initiative.html or call 216-987-0496 for more information.

Educational Opportunity Center (EOC)
The Educational Opportunity Center is a federally funded TRiO program that offers free enrollment assistance to 1,200 Cuyahoga County adults annually. The program is open to individuals age, 18 and over, who wish to further their education. EOC advisors provide information, workshops, and services to individuals and groups.

Advisors assist participants with:

• enrolling in the Adult Diploma Program or GED/Aspire Program
• enroll in college, certificate, or vocational training programs
• offer academic and career advising
• provide admissions information
• assist with student loan defaults
• assist with federal student aid and scholarship applications

The Educational Opportunity Center also provides referrals to social service and community resources. All services are free. The Educational Opportunity Center is funded by the U.S. Department of Education and Cuyahoga Community College. Call 216-987-6305 or visit http://www.tri-c.edu/trio-programs/educational-opportunity-center.html for more information.

Women in Transition (WIT)
The Women in Transition Program is a free, noncredit course that helps adult women move their lives forward through education and training. Participants receive basic computer training, assistance with career exploration, financial literacy enrichment, personal development, and soft skills training. Upon completion, participants are equipped to continue their education, enter the workforce, understand financial aid options, and identify marketable skills and career opportunities.

Both day and evening classes are available. Two classes are held each academic semester for eight weeks on all four campuses. Summer classes may vary. For more information, visit www.tri-c.edu/wit or call:

• Eastern Campus: 216-987-2272
• Metropolitan Campus: 216-987-4974
• Western Campus: 216-987-5091
• Westshore Campus: 216-987-5764

Cuyahoga Community College, the Carl D. Perkins Act, Westfield Insurance Foundation, the S.K. Wellman Foundation, Peoples Bank, Crocker Park (CP Commercial Delaware LLC), and other entities provide funding for the Women in Transition Program.

Credit for Prior Learning
Credit for Prior Learning (CPL) is degree credit awarded for demonstrated relevant college-level education acquired through nontraditional schooling, work or other life experience.

Through CPL, subject matter experts evaluate how prior experiences might translate to college-level knowledge and how that knowledge may equate to college credit.

Students may apply for CPL at any time after admission to the College. Credit approved through the evaluation process will be posted to your transcript. A student may obtain a maximum of 30 semester credits of CPL. Awarded CPL will not affect a student's grade point average or quality points, nor will it substitute for the required minimum of 20 semester credits of residency needed for graduation from Tri-C.

Credit for Prior Learning Options
Recognized options under which Credit for Prior Learning may be awarded:

College Level Examination Program (CLEP)
The CLEP includes subject-specific exams in a variety of areas. Tri-C will award comparable academic credit to students for earning designated scores on the CLEP subject area examinations. Official CLEP transcripts must be submitted to the Tri-C Enrollment Center with a letter requesting the posting of CLEP credit. Learn more about Tri-C’s CLEP aligned courses and designated CLEP exam scores for comparable academic credit to be awarded. Learn more about taking CLEP exams at a Tri-C location. Learn more about other testing sites and exam options at the CLEP website.
DANTES Subject Standardized Tests

DANTES (Defense Activity for Non-Traditional Education Support) is a group of standardized tests originally developed for the voluntary education programs of the United States Armed Forces. The tests have now been made available for civilian use. These civilian tests are administered through Educational Testing Services.

American Council on Education (ACE)

ACE makes policy recommendations and facilitates credit award decisions for alternative educational experiences, offering guidance to colleges and universities on how to evaluate and award credit for these experiences. Examples:

- **Military Training Credit**
  Credit for Prior Learning can be awarded for education a student received while a member of the United States Armed Forces.

- **Military Transfer Assurance Guides (MTAG)**
  The Ohio Department of Higher Education (ODHE) and Cuyahoga Community College are committed to the acceptance and awarding of college credit for training and experience in the United States Armed Forces or National Guard. ODHE's Ohio Articulation and Transfer Network (OATN) has begun the process of developing MTAGs to streamline and systemize the awarding of credit for military training, experience, and coursework. Military training and experience must be evaluated and approved by the American Council on Education (ACE) or a regional accrediting body, such as the Higher Learning Commission, to be included in Ohio's statewide transfer guarantee for military training/experience. Learn more about ODHE's aligned military credit.

- **Standardized Training and Certification Programs**
  Credit for Prior Learning can also be awarded for numerous standardized training and certification programs. Learn more through ACE's “National Guide to College Credit for Workforce Training”.

Challenge Exam (EX)

In certain circumstances, when students can show that they may have sufficient knowledge in a subject area due to relevant education and experience, they can earn CPL for a course by passing a comprehensive examination on the course material. Deciding which courses qualify for EX credit is up to the individual academic disciplines. To obtain a Challenge Exam Form, visit the Office of Academic Affairs on any campus.

Bypass Credit (BYP)

Bypass Credit may be awarded for learning attained through documented, valid academic and/or equivalent work experience, including professional certification/licensing and completion of formal training programs. Formal training programs include, but are not limited to, hospital-based and corporate education where requisite knowledge, skills, and competencies are documented. To obtain a Bypass Credit Application Form, visit the Office of Academic Affairs on any campus.

Degree and Certificate Program Requirements

Degree Programs

Cuyahoga Community College offers the following five (5) degrees: Associate of Arts (p. 35), Associate of Science, Associate of Applied Business, Associate of Applied Science and Associate of Technical Study.

All curriculum is approved through the established College curriculum approval process. Students petitioning for a degree must submit a petition form to the Enrollment Center according to the graduation deadline published in the Academic Calendar.

General Education Requirements Overview

Each degree requires students complete a minimum of 60 credit hours of College-level coursework (1000 level or higher), with a set number of credits in each of the College's General Education categories (Communication, Mathematics, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Outlined below is a summary of the credit hour requirements in each of the general education categories for each degree program offered at Cuyahoga Community College.

**Associate of Arts Degree**

- 9 credits of Communications
- 3 credits of Mathematics
- 6 credits of Natural and Physical Sciences (must include 1 laboratory experience)
- 9 credits of Arts and Humanities
- 9 credits of Social and Behavioral Sciences

**Associate of Science Degree**

- 6 credits of Communications
- 6 credits of Mathematics at the 1400 level or above
- 15 credits of Natural and Physical Sciences (must include 2 laboratory experiences)
- 6 credits of Arts and Humanities
- 6 credits of Social and Behavioral Sciences

**Associate of Applied Business Degree**

- 6 credits of Communications
- 3 credits of Mathematics
- 6 credits of Arts and Humanities/Natural and Physical Sciences/Social and Behavioral Sciences

**Associate of Applied Sciences**

- 6 credits of Communications
- 3 credits of Mathematics/Communications/Natural and Physical Sciences
- 6 credits of Arts and Humanities/Natural and Physical Sciences/Social and Behavioral Sciences

**Associate of Technical Studies**

- 6 credits of Communications
- 3 credits of Mathematics
Essential Learning Outcomes

Essential Learning Statement of Purpose
Essential Learning refers to that broad body of knowledge and skills common to all educated people, regardless of their professions. A strong education enables students to demonstrate measurable knowledge and intellectual skills that generate a lifelong habit of inquiry and decision-making. It fosters a better understanding of the world's cultural complexity. It prepares students to be more responsible citizens and more judicious inhabitants of the world. The Essential Learning curriculum of Cuyahoga Community College prepares students for a more fulfilling life.

Essential Learning Outcomes

As a graduate of Cuyahoga Community College, students will become members of a community of learners who are knowledgeable and competent in the following areas:

- Oral Communication
  Demonstrate effective verbal and non-verbal communication for an intended audience that is clear, concise, organized, and delivered following the standard conventions of that language.

- Written Communication
  Demonstrate effective written communication for an intended audience that follows genre/disciplinary conventions that reflect clarity, organization, and editing skills.

- Critical/Creative Thinking
  Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

- Information Literacy
  Acquire, evaluate, and use information from credible sources in order to meet information needs for a specific research purpose.

- Quantitative Reasoning
  Analyze problems, including real-world scenarios, through the application of mathematical and numerical concepts and skills, including the interpretation of data, tables, charts, or graphs.

- Cultural Sensitivity
  Demonstrate sensitivity to the beliefs, views, values, and practices of cultures within and beyond the United States.

- Civic Responsibility
  Analyze the results of actions and inactions with the likely effects on the larger local and/or global communities.

Associate of Arts Degree and Associate of Science Degree

The Arts and Sciences curriculum includes a range of course offerings in liberal arts and sciences for all students at the College. Students may enroll in a sequence of courses to earn either the Associate of Arts degree or the Associate of Science degree.

Study in the arts and sciences is the classic approach for preparing oneself for life and its many challenges with a broad education founded in history, literature, social sciences, and natural and physical sciences.

For those students who wish to continue their studies toward the completion of a four-year degree after leaving Cuyahoga Community College, it will be necessary to plan a program that provides for eventual transfer of credits to a baccalaureate degree-granting college or university. A large number of Tri-C students plan programs that will transfer to four-year colleges and universities by enrolling in what is usually referred to as the Transfer, or University Parallel curriculum. This course work is the equivalent of the courses offered during the first two years at a four-year institution. Information about planning a program to transfer to a university is provided in the General Curriculum Information section of this Catalog.

Associate of Applied Business Degree and Associate of Applied Science Degree

The Associate of Applied Business degree and Associate of Applied Science degree feature programs in the general areas of business technologies, health careers, engineering and industrial technologies, public service technologies, agriculture and natural resources technologies, and applied industrial technologies.

Tri-C offers more than 80 technical degree programs, many of which have career ladder plans consisting of Short-Term Certificates and Certificates of Proficiency developed to meet short-term objectives while pursuing associate degree goals. In addition, students in the Associate of Applied Business and Associate of Applied Science degree programs are expected to demonstrate proficiency in their career fields via capstone coursework.

Certificate Programs

Cuyahoga Community College grants Short-Term Certificates, Certificates of Proficiency, Degrees, and Post-Degree Professional Certificates. These curriculum options allow for multiple entry and exit points and supports career laddering.

A student can start in a degree program by taking those courses identified in the Short-Term Certificate, which may be a subset of that degree. They are then ready to enter the job market with these new skills while continuing to pursue their next goal which could be a Certificate of Proficiency.

Once an associate degree is obtained, or if a student already has a bachelor’s degree, a Post-Degree Professional Certificate can be pursued.

Certificates will be automatically awarded when the certificate requirements are completed. Students who do not want to receive an earned certificate must notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Short-Term Certificate

A Short-Term Certificate prepares students for entry-level positions in a specific career/employment situation.

Short-Term Certificate candidates at Cuyahoga Community College must be in good standing. A Short-Term Certificate will be granted to the student completing the following requirements:

1. The satisfactory completion of 9-29 semester credits at the 1000 level or higher as defined in the Short-Term Certificate.
2. The completion of no fewer than nine (9) credits while in attendance at Cuyahoga Community College.
3. The accumulation of a minimum grade point average of "C" or better (2.00) for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

**One-Year Certificate of Proficiency**

A Certificate of Proficiency program prepares the students for proficiency in an occupation field, after they successfully complete a prescribed education program.

Certificate candidates at Cuyahoga Community College must be in good standing. A Certificate of Proficiency will be granted to the student completing the following requirements:

1. The satisfactory completion of 30-37 semester credits at the 1000-level or higher as defined in the Certificate of Proficiency.
2. The completion of no fewer than nine (9) semester credits while in attendance at Cuyahoga Community College.
3. The accumulation of a minimum grade point average of "C" or better (2.00) for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

**Post-Degree Professional Certificate**

The Post-Degree Professional Certificate is a high-quality program of instruction for those students who have already completed an academic degree and are pursuing additional certification in professional and technical fields.

Post-Degree Professional Certificate candidates at Cuyahoga Community College must be in good standing. A Post-Degree Professional Certificate will be granted to the student who has fulfilled the following requirements:

1. Completed an associate or higher degree from a regionally accredited post-secondary institution, or an equivalent degree or diploma from a post-secondary program certified and accredited by a state or nationally certified and accredited board.
2. The satisfactory completion of 20-37 semester credits as identified in the specific Post-Degree Professional Certificate.
3. The completion of no fewer than nine (9) semester credits defined in the Post-Degree Professional Certificate while in attendance at Cuyahoga Community College.
4. The accumulation of a minimum grade point average of 2.50.

**Degree and Certificate Programs No Longer Offered by the College**

The College may award a deleted degree or certificate program for up to two (2) years after its deletion. After that time limit, the student will no longer be able to petition for the deleted degree program.

**Associate of Applied Business**

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Applied Business degree will be granted to the student completing the following requirements:

**Comprehensive Graduation Requirements**

The Associate of Applied Business degree prepares students with the skills necessary to enter and compete effectively in today's workforce.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800-level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000-level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and program graduation requirements unless otherwise noted.

**General Education Requirements**

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

All Associate of Applied Business degrees have been designed to meet the general education requirements as listed below. Most programs have selected specific courses to meet the general education requirements. For program specific requirements and/or recommendations, see the Associate of Applied Degree program sequences in this Catalog.

**Communication (6 semester credits)**

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 College Composition I or ENG-101H Honors College Composition
- Three (3) semester credits selected from the following courses:
  - ENG-1020 College Composition II or ENG-102H Honors College Composition II
  - COMM-1010 Fundamentals of Speech Communication or COMM-101H Honors Speech Communication

Students who transfer in credits for ENG-1020 College Composition II without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned.
Mathematics and Data Analysis (3 semester credits)
The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations</td>
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</tr>
<tr>
<td>MATH-1190</td>
<td>Algebraic and Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1380</td>
<td>Mathematics for Elementary and Middle School Teachers II</td>
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<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3</td>
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<td>MATH-1420</td>
<td>Elementary Probability and Statistics II</td>
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</tr>
<tr>
<td>MATH-1470</td>
<td>Modern Mathematics for Business and Social Science I</td>
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<td>MATH-1480</td>
<td>Modern Mathematics for Business and Social Sciences II</td>
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<td>MATH-1490</td>
<td>Business Probability and Statistics I</td>
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</tr>
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<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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<td>MATH-153H</td>
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<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
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<td>MATH-154H</td>
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<td>MATH-1580</td>
<td>Precalculus</td>
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<td>MATH-1610</td>
<td>Calculus I</td>
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<td>MATH-161H</td>
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<td>MATH-1620</td>
<td>Calculus II</td>
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<td>MATH-162H</td>
<td>Honors Calculus II</td>
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<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
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<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
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<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
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<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
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<tr>
<td>MATH-2520</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

Arts and Humanities/Social and Behavioral Sciences/Natural and Physical Sciences (6 semester credits)
The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least 2 of the following areas, with a minimum of 3 credits in each area:

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<th>Code</th>
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<td>ART-1010</td>
<td>Art Appreciation</td>
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<th>Code</th>
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<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
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<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
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</tr>
<tr>
<td>ART-2030</td>
<td>Art History Survey: Late Renaissance to Present</td>
<td>3</td>
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Dance

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<th>Code</th>
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<tbody>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
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English 2000-level Literature courses

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<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
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<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
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<tr>
<td>ENG-2350</td>
<td>British Literature I</td>
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<tr>
<td>ENG-2360</td>
<td>British Literature II</td>
<td>3</td>
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<tr>
<td>ENG-2410</td>
<td>Introduction to Literature: Poetry</td>
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</tr>
<tr>
<td>ENG-2420</td>
<td>Introduction to Literature: Fiction</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2430</td>
<td>Introduction to Literature: Drama</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2510</td>
<td>African-American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2520</td>
<td>African-American Literature II</td>
<td>3</td>
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<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
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<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
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<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
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<tr>
<td>ENG-2720</td>
<td>Survey of Biblical Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2730</td>
<td>Exploration of World Mythology</td>
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Humanities

<table>
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<tr>
<td>HUM-1010</td>
<td>Introduction to Humanities</td>
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<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
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<tr>
<td>HUM-102H</td>
<td>Honors Individual in Society</td>
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<td>The Individual in Cosmos</td>
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Media and Journalism Studies

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<tr>
<td>MJS-1310</td>
<td>Film Appreciation</td>
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Music

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<tr>
<td>MUS-1010</td>
<td>Survey of European Classical Music</td>
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<tr>
<td>MUS-1020</td>
<td>Survey of Jazz</td>
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<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
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<td>MUS-1040</td>
<td>Survey of African-American Music</td>
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<td>MUS-1050</td>
<td>Survey of World Music</td>
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<td>Jazz History I</td>
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Philosophy

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<td>PHIL-1000</td>
<td>Critical Thinking</td>
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<td>PHIL-1010</td>
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<td>PHIL-101H</td>
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<td>PHIL-1020</td>
<td>Introduction to Logic</td>
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<td>PHIL-2010</td>
<td>Comparative World Religion</td>
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<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
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<td>PHIL-202H</td>
<td>Honors Ethics</td>
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<tr>
<td>PHIL-2031</td>
<td>Philosophy of Science</td>
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<tr>
<td>PHIL-2040</td>
<td>Philosophy of Art</td>
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<td>Bioethics</td>
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<td>PHIL-205H</td>
<td>Honors Bioethics</td>
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Religious Studies

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<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
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<tr>
<td>REL-2010</td>
<td>Religious Traditions of Western Christianity</td>
<td>3</td>
</tr>
<tr>
<td>REL-2020</td>
<td>Religious Traditions of Judaism</td>
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<tr>
<td>Code</td>
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<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
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**Theatre**

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<tr>
<td>THEA-1010</td>
<td>Theatre Appreciation</td>
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<tr>
<td>THEA-1100</td>
<td>Survey and Appreciation of American Musical Theatre</td>
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<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
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<td>History of Theatre &amp; Drama II</td>
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**Social and Behavioral Sciences**

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<td>Cultural Anthropology</td>
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<td>Peoples and Cultures of the World</td>
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<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
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<td>ANTH-2110</td>
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**Economics**

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<td>ECON-1210</td>
<td>Survey of Economics</td>
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<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
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**Geography**

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<td>GEOG-1010</td>
<td>World Regional Geography</td>
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<td>Environmental Geography</td>
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<td>GEOG-1050</td>
<td>Africans in the Americas</td>
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<tr>
<td>GEOG-1510</td>
<td>Regional Geography of the United States and Canada</td>
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**Political Science**

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<td>POL-1010</td>
<td>American National Government</td>
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<td>Honors American National Government</td>
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<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
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<td>POL-2030</td>
<td>Comparative Politics</td>
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<tr>
<td>POL-2060</td>
<td>Political Systems of Africa</td>
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<td>POL-2070</td>
<td>International Relations</td>
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<td>POL-2100</td>
<td>Constitutional Law</td>
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**Psychology**

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<td>General Psychology</td>
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<td>Honors General Psychology</td>
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<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
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<tr>
<td>PSY-2010</td>
<td>Child Growth and Development</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>PSY-2040</td>
<td>Social Psychology</td>
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<td>PSY-2050</td>
<td>Psychology of Personality</td>
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<td>Adolescent Psychology</td>
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<td>PSY-2080</td>
<td>Abnormal Psychology</td>
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<td>PSY-2100</td>
<td>Introduction to Aging</td>
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<td>PSY-2110</td>
<td>Educational Psychology</td>
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**Sociology**

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<td>SOC-1010</td>
<td>Introductory Sociology</td>
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<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
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<td>SOC-1020</td>
<td>Social Institutions</td>
<td>3</td>
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<tr>
<td>SOC-2010</td>
<td>Social Problems</td>
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<td>SOC-201H</td>
<td>Honors Social Problems</td>
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<td>SOC-2020</td>
<td>Sociology of the Family</td>
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<td>SOC-2100</td>
<td>Aging and Society</td>
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<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
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<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
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<td>SOC-2510</td>
<td>Urban Sociology</td>
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<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
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**Urban Studies**

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<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
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<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
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<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
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<td>UST-2070</td>
<td>Urban Politics</td>
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<td>UST-2640</td>
<td>American Urban History</td>
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**Women’s Studies**

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<td>WST-1510</td>
<td>Introduction to Women’s Studies</td>
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<td>WST-2010</td>
<td>Women in the World</td>
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**Natural and Physical Sciences**

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<tbody>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
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**Biology**

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<tbody>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
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<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
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<td>BIO-1050</td>
<td>Human Biology</td>
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<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<tr>
<td>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
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<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
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<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
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<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
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<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
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<td>BIO-1300</td>
<td>Horticultural Botany</td>
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<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
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<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
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<td>BIO-1500</td>
<td>Principles of Biology I</td>
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<td>BIO-150H</td>
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<td>Principles of Biology II</td>
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<td>Tropical Biology</td>
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<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
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<td>Techniques in Molecular Genetics</td>
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<td>Biology of Aging</td>
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<td>BIO-2150</td>
<td>Environmental Science</td>
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<td>BIO-2200</td>
<td>Radiobiology</td>
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<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
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<td>BIO-2500</td>
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<tr>
<td>BIO-2600</td>
<td>Pathophysiology</td>
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**Chemistry**
Astronomy Laboratory

PHYS-1050 Everyday Physics 2
PHYS-1210 College Physics I 4
PHYS-1220 College Physics II 4
PHYS-1300 Physics of Optical Materials 4
PHYS-2250 Radiographic Physics and Quality Control 4
PHYS-2310 General Physics I 5
PHYS-2320 General Physics II 5

The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Business degree:

DIET-1200 Basic Nutrition 3
EMT-1401 Anatomy & Physiology for Paramedics 4
MT-1242 Somatic Studies I 3
MT-1272 Somatic Studies II 3
MT-1280 Somatic Studies III 2

Program Requirements

Program requirements are outlined by the specific technical program sequences in this Catalog. Approximately one-half of each Associate of Applied Business program requirements must include a minimum of 15 additional credits of general education or applied general education (i.e., “basic” coursework), for a total of 30 credits of non-technical coursework. Applied general education includes a focus on “21st century” skills and knowledge, including: information and communication literacy; critical thinking and problem solving; interpersonal and collaborative skills; global awareness; and financial, economic, business and civic literacy. Technical program concentrations should consist of 12 to 16 semester credits of technical specialization including a minimum one-semester credit Capstone Course.

The Capstone Course provides students with opportunities to apply technical, oral, and written skills; to prepare resumes and/or portfolios and develop interview skills; to study history and trends in the profession; and/or to discuss ethical and global issues within the profession. The program requirements are identified in the Associate of Applied Degree program sequences in this Catalog.

Cross-listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses.

Associate of Applied Science

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Applied Science degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800-level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000-level courses,
MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.

4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000-level or higher while in attendance at Cuyahoga Community College.

5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and program graduation requirements unless otherwise noted.

**General Education Requirements**

Each of the College’s degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences.

Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College’s general education outcomes.

All Associate of Applied Science degrees have been designed to meet the general education requirements as listed below. Most programs have selected specific courses to meet the general education requirements. For program specific requirements and/or recommendations, see the Associate of Applied Degree program sequences in this Catalog.

**Communication/Mathematics/Natural & Physical Sciences (6 semester credits)**

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 College Composition I or ENG-101H Honors College Composition I
- Three (3) semester credits selected from the following courses:

1Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication/Math/Natural & Physical Sciences must be earned.

**Communication**

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<td>Fundamentals of Speech Communication</td>
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<td>ENG-101H</td>
<td>Honors Speech Communication</td>
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**English**

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<td>ENG-1020</td>
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<td>ENG-102H</td>
<td>Honors College Composition II</td>
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**Mathematics**

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<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations</td>
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<td>MATH-1190</td>
<td>Algebraic and Quantitative Reasoning</td>
<td>3</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
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<td>MATH-1380</td>
<td>Mathematics for Elementary and Middle School Teachers II</td>
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<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
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<td>MATH-1420</td>
<td>Elementary Probability and Statistics II</td>
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<td>MATH-1470</td>
<td>Modern Mathematics for Business and Social Science I</td>
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<td>Modern Mathematics for Business and Social Sciences II</td>
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<td>MATH-1490</td>
<td>Business Probability and Statistics I</td>
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<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
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<td>College Algebra</td>
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<td>Honors College Algebra</td>
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<td>Trigonometry</td>
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<td>Precalculus</td>
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<td>Calculus I</td>
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**Natural and Physical Sciences**

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**Physics**

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<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
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<td>Radiographic Physics and Quality Control</td>
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The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Science degree:

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<td>MT-1242</td>
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<td>Somatic Studies II</td>
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<tr>
<td>MT-1280</td>
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1. Students who transfer in credits for ENG-1020 College Composition II without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

**Mathematics and Data Analysis (3 semester credits)**

The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher.

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<td>MATH-1190</td>
<td>Algebraic and Quantitative Reasoning</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
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<td>Elementary Probability and Statistics I</td>
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Arts and Humanities/Social and Behavioral Sciences/ Natural and Physical Sciences (6 semester credits)

The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least 2 of the following areas, with a minimum of 3 credits in each area:

Arts and Humanities

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

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<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
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<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
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<td>Art History Survey: Late Renaissance to Present</td>
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Dance

- DANC-1100 Dance Appreciation 3

English 2000-level Literature courses

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<td>British Literature I</td>
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<td>ENG-2410</td>
<td>Introduction to Literature: Poetry</td>
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<td>Introduction to Literature: Drama</td>
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<td>African-American Literature I</td>
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<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
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Humanities

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Media and Journalism Studies

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Philosophy

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<td>Introduction to Logic</td>
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<td>Comparative World Religion</td>
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<td>Philosophy of Science</td>
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Religious Studies

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<td>Religious Traditions of Judaism</td>
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<td>African-American Religious Experience</td>
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Theatre

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<td>Survey and Appreciation of American Musical Theatre</td>
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<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
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<td>History of Theatre &amp; Drama II</td>
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Social and Behavioral Sciences

<table>
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<td>ANTH-2110</td>
<td>Archaeology</td>
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Economics

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<td>Economic Development of the American Economy</td>
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Geography

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<td>Africans in the Americas</td>
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<td>Regional Geography of the United States and Canada</td>
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Political Science

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<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
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### Psychology
- **POL-2030** Comparative Politics 3
- **POL-2060** Political Systems of Africa 3
- **POL-2070** International Relations 3
- **POL-2100** Constitutional Law 3

### Sociology
- **SOC-1010** Introductory Sociology 3
- **SOC-1020** Social Institutions 3
- **SOC-2100** Aging and Society 3
- **SOC-2110** Death and Dying 3
- **SOC-2410** Sociology of Gender 3
- **SOC-2310** Contemporary American Black-White Relations 3
- **SOC-2510** Urban Sociology 3
- **SOC-2550** Race and Ethnic Relations 3

### Urban Studies
- **UST-1010** Introduction to Urban Studies 3
- **UST-1020** Urban Geography 3
- **UST-2070** Urban Politics 3
- **UST-2640** American Urban History 3

### Women's Studies
- **WST-1510** Introduction to Women's Studies 3
- **WST-2010** Women in the World 3

### Natural and Physical Sciences
- **ANTH-1210** Human Evolution 4
- **BIO-1040** The Cell and DNA 3
- **BIO-104L** The Cell and DNA Laboratory 1
- **BIO-1050** Human Biology 3
- **BIO-105L** Human Biology Laboratory 1
- **BIO-1060** Environment, Ecology, and Evolution 3
- **BIO-106L** Environment, Ecology, & Evolution Laboratory 1
- **BIO-1100** Introduction to Biological Chemistry 3
- **BIO-1221** Anatomy and Physiology for Diagnostic Medical Imaging 4
- **BIO-1230** Anatomy and Physiology of the Eye 4
- **BIO-1300** Horticultural Botany 3
- **BIO-1410** Anatomy & Physiology of Domestic Animals I 4
- **BIO-1420** Anatomy & Physiology of Domestic Animals II 3
- **BIO-1500** Principles of Biology I 4
- **BIO-150H** Honors Principles of Biology I 4
- **BIO-1510** Principles of Biology II 4
- **BIO-151H** Honors Principles of Biology II 4
- **BIO-2020** Tropical Biology 4
- **BIO-2060** Principles of Genetics 3
- **BIO-2070** Techniques in Molecular Genetics 3
- **BIO-2100** Biology of Aging 3
- **BIO-2150** Environmental Science 3
- **BIO-2200** Radiobiology 2
- **BIO-2331** Anatomy and Physiology I 4
- **BIO-2341** Anatomy and Physiology II 4
- **BIO-2500** Microbiology 4
- **BIO-2600** Pathophysiology 3

### Chemistry
- **CHEM-1000** Everyday Chemistry 3
- **CHEM-100L** Everyday Chemistry Laboratory 1
- **CHEM-1010** Introduction to Inorganic Chemistry 4
- **CHEM-101H** Honors Introduction to Inorganic Chemistry 4
- **CHEM-1020** Introduction to Organic Chemistry and Biochemistry 4
- **CHEM-102H** Honors Introduction to Organic Chemistry and Biochemistry 4
- **CHEM-1080** Herbal Medicines and Natural Products 3
- **CHEM-1300** General Chemistry I 4
- **CHEM-130H** Honors General Chemistry I 5
- **CHEM-130L** General Chemistry Laboratory I 1
- **CHEM-1310** General Chemistry II 4
- **CHEM-131H** Honors General Chemistry II 5
- **CHEM-131L** General Chemistry Laboratory II 1
- **CHEM-2000** Analytical Chemistry 5
- **CHEM-2300** Organic Chemistry I 5
- **CHEM-2310** Organic Chemistry II 5

### Earth Science
- **ESCI-1030** Earth 3
- **ESCI-103L** Earth Laboratory 1
- **ESCI-1040** Weather Studies 3
- **ESCI-1050** Introduction to Ocean Studies 3
- **ESCI-1310** Physical Geography 3
- **ESCI-131L** Lab in Physical Geography 1
- **ESCI-1410** Physical Geology 3
Program Requirements

Program requirements are outlined by the specific technical program sequences in this Catalog. Approximately one-half of each Associate of Applied Science program requirements must include a minimum of 15 additional credits of general education or applied general education (i.e., “basic” coursework), for a total of 30 credits of non-technical coursework. Applied general education includes a focus on “21st century” skills and knowledge, including: information and communication literacy; critical thinking and problem solving; interpersonal and collaborative skills; global awareness, and financial, economic, business and civic literacy.

Technical program concentrations should consist of 12 to 16 semester credits of technical specialization including a minimum one-semester credit Capstone Course.

The Capstone Course provides students with opportunities to apply technical, oral, and written skills; to prepare resumes and/or portfolios and develop interview skills; to study history and trends in the profession; and/or to discuss ethical and global issues within the profession. The program requirements are identified in the Associate of Applied Degree program sequences in this Catalog.

Cross-listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses.

Associate of Arts Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Arts degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

The Associate of Arts degree prepares students to continue their education at the bachelor’s degree level. When selecting courses for this degree, students should select courses according to the requirements of their intended transfer destination school and major; Undecided students degree, students should select courses according to the requirements of the state-approved Transfer Module as a general guide for their intended transfer destination school and major; Undecided students may use the state-approved Transfer Module as a general guide for transferability.

The following degree requirements are intended to help ensure that students with an Associate of Arts degree have completed the first two years of a baccalaureate degree.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800-level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000-level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

General Education Requirements

Each of the College’s degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with
the specific program requirements for a degree will have achieved the College's general education outcomes.

Communication (9 semester credits)
The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 College Composition I or ENG-101H Honors College Composition I
- ENG-1020 College Composition II or ENG-102H Honors College Composition II
- COMM-1010 Fundamentals of Speech Communication or COMM-101H Honors Speech Communication

1 Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 9 hours in Communication must be earned.

Mathematics and Data Analysis (3 semester credits)
The ability to integrate numerical, symbolical, and spatial methods for scientific inquiry into the physical, natural, or social and behavioral sciences is essential. Students must complete the following to meet this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher, selected from the following courses:

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<th>Credit Hours</th>
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<tr>
<td>MATH-1190</td>
<td>Algebraic and Quantitative Reasoning</td>
<td>3</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
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<tr>
<td>MATH-1380</td>
<td>Mathematics for Elementary and Middle School Teachers II</td>
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<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3</td>
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<tr>
<td>MATH-1420</td>
<td>Elementary Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1470</td>
<td>Modern Mathematics for Business and Social Science I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1480</td>
<td>Modern Mathematics for Business and Social Sciences II</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1490</td>
<td>Business Probability and Statistics I</td>
<td>3</td>
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<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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<td>MATH-153H</td>
<td>Honors College Algebra</td>
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<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
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<td>Calculus I</td>
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<td>MATH-1620</td>
<td>Calculus II</td>
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<td>MATH-162H</td>
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<td>Introduction to Discrete Mathematics</td>
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<td>MATH-2310</td>
<td>Calculus III</td>
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<td>MATH-231H</td>
<td>Honors Calculus III</td>
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MATH-2410 Introduction to Linear Algebra 3
MATH-2520 Differential Equations 3

Natural and Physical Sciences (6 semester credits)
The ability to undertake scientific inquiry in the physical and biological sciences is essential for students seeking an Associate of Arts degree. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following courses. Must include one (1) laboratory experience:

<table>
<thead>
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<td>ANTH-1210</td>
<td>Human Evolution</td>
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<td>The Cell and DNA</td>
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<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
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<td>BIO-1050</td>
<td>Human Biology</td>
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<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<td>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
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<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
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<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
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<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
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<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
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<td>BIO-1500</td>
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<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
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<td>BIO-2150</td>
<td>Environmental Science</td>
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<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
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<td>CHEM-1000</td>
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<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
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<td>CHEM-101H</td>
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<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
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<td>ESCI-131L</td>
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<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
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</table>
Students must complete the following to meet this requirement:

- Cultural perspectives is an important part of a liberal arts education.
- Aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education.

The opportunity to obtain a broader knowledge of the Social and Behavioral Sciences is in order to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education. Students must complete the following to meet this requirement:

- Nine (9) semester credits selected from two disciplines:

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<td>History of Civilization II</td>
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<td>Honors History of Civilization II</td>
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<td>United States History to 1877</td>
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<td>United States History Since 1877</td>
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<td>History of Immigration in America</td>
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<td>History of Africa</td>
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<td>African American History 1877-present</td>
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<td>Women in American History</td>
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<td>POL-101H</td>
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<td>State &amp; Local Government</td>
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<td>Comparative Politics</td>
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<td>Political Systems of Africa</td>
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<td>International Relations</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
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<td>PSY-2010</td>
<td>Child Growth and Development</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>PSY-2040</td>
<td>Social Psychology</td>
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<td>PSY-2050</td>
<td>Psychology of Personality</td>
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<td>PSY-2060</td>
<td>Adolescent Psychology</td>
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<td>PSY-2080</td>
<td>Abnormal Psychology</td>
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<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
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<td>PSY-2110</td>
<td>Educational Psychology</td>
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<td>Sociology</td>
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<td>Social Institutions</td>
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<td>Social Problems</td>
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<td>SOC-2020</td>
<td>Sociology of the Family</td>
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<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
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<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
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<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
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<td>Urban Sociology</td>
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<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
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<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
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</table>

Social and Behavioral Sciences (9 semester credits)

The opportunity to obtain a broader knowledge of the Social and Behavioral Sciences in order to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education. Students must complete the following to meet this requirement:

- Nine (9) semester credits selected from the following courses, must be selected from two disciplines:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
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<tr>
<td>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
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Economics

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<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
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<td>Economic Development of the American Economy</td>
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Geography

<table>
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<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
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<td>GEOG-1030</td>
<td>Environmental Geography</td>
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</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
</tbody>
</table>
Elective Graduation Requirements (24 Semester credits)

The remaining semester credit hours needed to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework and physical education. Courses taken for general education requirements cannot count toward fulfilling elective graduation requirements. Students wishing to maximize the use of credits toward a bachelor’s degree should select electives according to the requirements of their intended transfer destination school or major. The state-approved Transfer Module provides a general guide for transferability.

Cross-listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses.

Associate of Science Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Science degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

The Associate of Science degree prepares students to continue their education at the bachelor’s degree level. When selecting courses for this degree, students should select courses according to the requirements of...
their intended transfer destination school and major; Undecided students may use the state-approved Transfer Module as a general guide for transferability.

The following degree requirements are intended to help ensure that students with an Associate of Science degree have completed the first two years of a baccalaureate degree.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800-level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000-level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000-level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

**General Education Requirements**

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

**Communication (6 semester credits)**

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 College Composition I or ENG-101H Honors College Composition I
- ENG-1020 College Composition II or ENG-102H Honors College Composition II

Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned. COMM-1010 Fundamentals of Speech Communication or COMM-101H Honors Speech Communication can fulfill the Communication requirement for students who have had ENG-1010 waived.

**Mathematics and Data Analysis (6 semester credits)**

The ability to integrate numerical, symbolical, and spatial methods for scientific inquiry into the physical, natural, or social and behavioral sciences is essential. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following courses (MATH-1400 level or higher):

**Natural and Physical Sciences (15 semester credits)**

The ability to undertake scientific inquiry in the physical and biological sciences is essential for students seeking an Associate of Science degree. Students must complete the following to meet this requirement:

- Fifteen (15) semester credits selected from the following courses. Must include two (2) laboratory experiences:

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<td>MATH-1420</td>
<td>Elementary Probability and Statistics II</td>
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<tr>
<td>MATH-1470</td>
<td>Modern Mathematics for Business and Social Science I</td>
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<td>MATH-1480</td>
<td>Modern Mathematics for Business and Social Sciences II</td>
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<td>MATH-1490</td>
<td>Business Probability and Statistics I</td>
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<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
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<td>MATH-1530</td>
<td>College Algebra</td>
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<td>MATH-153H</td>
<td>Honors College Algebra</td>
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<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
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<td>MATH-154H</td>
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<td>MATH-1610</td>
<td>Calculus I</td>
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<td>MATH-161H</td>
<td>Honors Calculus I</td>
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<td>MATH-1620</td>
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<tr>
<td>MATH-162H</td>
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<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
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<td>MATH-2310</td>
<td>Calculus III</td>
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<td>MATH-231H</td>
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<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
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<td>MATH-2520</td>
<td>Differential Equations</td>
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**Chemistry**

- BIO-1040 The Cell and DNA
- BIO-104L The Cell and DNA Laboratory
- BIO-1050 Human Biology
- BIO-105L Human Biology Laboratory
- BIO-1060 Environment, Ecology, and Evolution
- BIO-106L Environment, Ecology, & Evolution Laboratory
- BIO-1100 Introduction to Biological Chemistry
- BIO-1410 Anatomy & Physiology of Domestic Animals I
- BIO-1420 Anatomy & Physiology of Domestic Animals II
- BIO-1500 Principles of Biology I
- BIO-150H Honors Principles of Biology I
- BIO-1510 Principles of Biology II
- BIO-2060 Principles of Genetics
- BIO-2500 Microbiology
Social and Behavioral Sciences (6 semester credits)

The opportunity to obtain a broader knowledge of the Social and Behavioral Sciences in order to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following courses, must be selected from two disciplines:

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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
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<td>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
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<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>4</td>
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<td>ANTH-2110</td>
<td>Archaeology</td>
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<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
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<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
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<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
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<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
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<td>GEOG-1050</td>
<td>Africans in the Americas</td>
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<tr>
<td>GEOG-1510</td>
<td>Regional Geography of the United States and Canada</td>
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<tr>
<td>HIST-1010</td>
<td>History of Civilization</td>
<td>3</td>
</tr>
<tr>
<td>HIST-101H</td>
<td>Honors History of Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1020</td>
<td>History of Civilization II</td>
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<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
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<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
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<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
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<tr>
<td>HIST-1520</td>
<td>United States History Since 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-152H</td>
<td>Honors United States History since 1877</td>
<td>3</td>
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<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
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<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
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<td>HIST-2070</td>
<td>African American Women-History</td>
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<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
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<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
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<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
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<tr>
<td>POL-1010</td>
<td>American National Government</td>
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<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
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<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
<td>3</td>
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<tr>
<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
<td>3</td>
</tr>
<tr>
<td>POL-2030</td>
<td>Comparative Politics</td>
<td>3</td>
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<tr>
<td>POL-2060</td>
<td>Political Systems of Africa</td>
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<td>POL-2070</td>
<td>International Relations</td>
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<td>POL-2100</td>
<td>Constitutional Law</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
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<td>PSY-2010</td>
<td>Child Growth and Development</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>PSY-2040</td>
<td>Social Psychology</td>
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<td>Psychology of Personality</td>
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<td>Adolescent Psychology</td>
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<td>Abnormal Psychology</td>
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<td>PSY-2100</td>
<td>Introduction to Aging</td>
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<td>PSY-2110</td>
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**Sociology**

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<td>SOC-1010</td>
<td>Introductory Sociology</td>
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<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
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<tr>
<td>SOC-1020</td>
<td>Social Institutions</td>
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<td>SOC-2010</td>
<td>Social Problems</td>
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<td>SOC-201H</td>
<td>Honors Social Problems</td>
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<td>SOC-2020</td>
<td>Sociology of the Family</td>
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</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
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<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
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<tr>
<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
<td>3</td>
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<td>SOC-2510</td>
<td>Urban Sociology</td>
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**Urban Studies**

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<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
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<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
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<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
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<tr>
<td>UST-2070</td>
<td>Urban Politics</td>
<td>3</td>
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<tr>
<td>UST-2640</td>
<td>American Urban History</td>
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**Women's Studies**

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<tr>
<td>WST-1510</td>
<td>Introduction to Women's Studies</td>
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<tr>
<td>WST-2010</td>
<td>Women in the World</td>
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</table>

**Arts and Humanities (6 semester credits)**

The appreciation of the achievements of the Arts and Humanities provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; and to integrate ethical decision making in dealing responsibly with personal, family, and community issues. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following courses, must be selected from at least two disciplines.

<table>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ART-1010</td>
<td>Art Appreciation</td>
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<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
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<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
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<tr>
<td>ART-2030</td>
<td>Art History Survey: Late Renaissance to Present</td>
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**English 2000-level literature courses**

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<td>ENG-2310</td>
<td>American Literature I</td>
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<td>ENG-2320</td>
<td>American Literature II</td>
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</tr>
<tr>
<td>ENG-2350</td>
<td>British Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2360</td>
<td>British Literature II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2410</td>
<td>Introduction to Literature: Poetry</td>
<td>3</td>
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<td>ENG-2420</td>
<td>Introduction to Literature: Fiction</td>
<td>3</td>
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<tr>
<td>ENG-2430</td>
<td>Introduction to Literature: Drama</td>
<td>3</td>
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<tr>
<td>ENG-2510</td>
<td>African-American Literature I</td>
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<td>ENG-2520</td>
<td>African-American Literature II</td>
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<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
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<td>ENG-2700</td>
<td>World Literature</td>
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<td>Shakespeare</td>
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<td>Survey of Biblical Literature</td>
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<tr>
<td>ENG-2730</td>
<td>Exploration of World Mythology</td>
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**Humanities**

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<td>HUM-1010</td>
<td>Introduction to Humanities</td>
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<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
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<td>HUM-102H</td>
<td>Honors Individual in Society</td>
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<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
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**Media and Journalism Studies**

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<td>MJS-1310</td>
<td>Film Appreciation</td>
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**Music**

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<tbody>
<tr>
<td>MUS-1010</td>
<td>Survey of European Classical Music</td>
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<td>MUS-1020</td>
<td>Survey of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
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<td>MUS-1040</td>
<td>Survey of African-American Music</td>
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<td>MUS-1050</td>
<td>Survey of World Music</td>
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<td>MUS-2520</td>
<td>Jazz History I</td>
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**Philosophy**

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<td>PHIL-1000</td>
<td>Critical Thinking</td>
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<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
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<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
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</tr>
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<td>PHIL-1020</td>
<td>Introduction to Logic</td>
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<td>PHIL-2010</td>
<td>Comparative World Religion</td>
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</tr>
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<td>PHIL-2020</td>
<td>Ethics</td>
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<td>PHIL-202H</td>
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<td>PHIL-2031</td>
<td>Philosophy of Science</td>
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<td>PHIL-2040</td>
<td>Philosophy of Art</td>
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<td>Bioethics</td>
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**Religious Studies**

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<td>REL-1010</td>
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<tr>
<td>REL-2010</td>
<td>Religious Traditions of Western Christianity</td>
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<td>REL-2020</td>
<td>Religious Traditions of Judaism</td>
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<td>REL-2060</td>
<td>African-American Religious Experience</td>
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**Theatre Arts**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA-1010</td>
<td>Theatre Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1100</td>
<td>Survey and Appreciation of American Musical Theatre</td>
<td>3</td>
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</tbody>
</table>

1 ANTH-1210 Human Evolution cannot be used towards the Social and Behavioral Sciences Requirement.
Elective Graduation Requirements (21 credits)
The remaining semester credits needed to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework. Courses taken for general education requirements cannot count toward fulfilling elective graduation requirements. Students wishing to maximize the use of credits toward a bachelor's degree should select electives according to the requirements of their intended transfer destination school or major. The state-approved Transfer Module provides a general guide for transferability.

Cross-listed Courses
Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses.

Associate of Technical Studies
The Associate of Technical Study (ATS) degree allows students to combine courses from two or more different technical programs to create a degree that focuses on a special career interest. Another ATS option is for students who have successfully completed a course of technical studies in a non-credit bearing post-secondary institution that has an articulation agreement with the College. Based upon the articulation agreement, the student may receive up to 30 transfer credits toward an Associate of Technical Study degree in the specific program identified in the agreements.

Associate of Technical Study Degree
Cuyahoga Community College will grant an Associate of Technical Study degree to students in good standing upon completion of the following requirements:

Comprehensive Graduation Requirements
The Associate of Technical Study degree prepares students with the skills necessary to enter and compete effectively in today's workforce. It is awarded for the successful completion of an individually planned technical education program which contains an area of concentration formed either by an intra-institutional combination of courses from two or more different technical programs or by credit (maximum of 30 semester credit hours) awarded by the College for courses completed or training received at other institutions with which the College has entered into an articulation agreement.

1. Students must complete an ATS Contract which includes an outline of specific coursework to be taken to earn the ATS degree. Students must work with an academic counselor to develop the ATS contract.
2. Students must satisfactorily complete at least 60 semester credits (exclusive of physical education) at the 1000-level or higher.
3. Students must achieve a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Students must complete a minimum of 20 of the 60 semester credits at Cuyahoga Community College after the ATS application has been approved.

5. Special Topics, Independent Study/Research and Cooperative Education courses may be applied to the general education and program requirements unless otherwise noted.

General Education Requirements
Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program and elective requirements for a degree will have achieved the College's general education outcomes.

Communication (6 semester credits)
The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 College Composition I or ENG-101H Honors College Composition
- Three (3) semester credits selected from the following courses:

<table>
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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students who transfer in credits for ENG-1020 College Composition II without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned.

Mathematics and Data Analysis (3 semester credits)
The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher, selected from the following courses:

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1190</td>
<td>Algebraic and Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1380</td>
<td>Mathematics for Elementary and Middle School Teachers II</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3</td>
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<tr>
<td>MATH-1420</td>
<td>Elementary Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1470</td>
<td>Modern Mathematics for Business and Social Science I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1480</td>
<td>Modern Mathematics for Business and Social Sciences II</td>
<td>4</td>
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<tr>
<td>MATH-1490</td>
<td>Business Probability and Statistics I</td>
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<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
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</tbody>
</table>
Arts and Humanities/Social and Behavioral Sciences/Natural and Physical Sciences (6 semester credits)

The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least 2 of the following areas, with a minimum of 3 credits in each area:
- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

### Arts and Humanities

<table>
<thead>
<tr>
<th>Code</th>
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<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
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<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART-2030</td>
<td>Art History Survey: Late Renaissance to Present</td>
<td>3</td>
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<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
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<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
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<tr>
<td>ENG-2350</td>
<td>British Literature I</td>
<td>3</td>
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<tr>
<td>ENG-2360</td>
<td>British Literature II</td>
<td>3</td>
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<tr>
<td>ENG-2410</td>
<td>Introduction to Literature: Poetry</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2420</td>
<td>Introduction to Literature: Fiction</td>
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<td>ENG-2430</td>
<td>Introduction to Literature: Drama</td>
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<td>ENG-2510</td>
<td>African-American Literature I</td>
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<td>ENG-2520</td>
<td>African-American Literature II</td>
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<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
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### Humanities

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<td>HUM-1010</td>
<td>Introduction to Humanities</td>
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<td>HUM-1020</td>
<td>The Individual in Society</td>
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<td>HUM-102H</td>
<td>Honors Individual in Society</td>
<td>3</td>
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<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
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### Media and Journalism Studies

<table>
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<td>MJS-1310</td>
<td>Film Appreciation</td>
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### Music

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<tr>
<td>MUS-1010</td>
<td>Survey of European Classical Music</td>
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<tr>
<td>MUS-1020</td>
<td>Survey of Jazz</td>
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</tr>
<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
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<tr>
<td>MUS-1040</td>
<td>Survey of African-American Music</td>
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<td>MUS-1050</td>
<td>Survey of World Music</td>
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<td>MUS-2520</td>
<td>Jazz History I</td>
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### Philosophy

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<td>Critical Thinking</td>
<td>3</td>
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<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
<td>3</td>
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<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
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<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
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<tr>
<td>PHIL-2010</td>
<td>Comparative World Religion</td>
<td>3</td>
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<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
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<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td>3</td>
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<tr>
<td>PHIL-2031</td>
<td>Philosophy of Science</td>
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<td>PHIL-2040</td>
<td>Philosophy of Art</td>
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<td>PHIL-2050</td>
<td>Bioethics</td>
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<td>PHIL-205H</td>
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### Religious Studies

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<tbody>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
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<tr>
<td>REL-2010</td>
<td>Religious Traditions of Western Christianity</td>
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<tr>
<td>REL-2020</td>
<td>Religious Traditions of Judaism</td>
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<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
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### Theatre

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<td>THEA-1010</td>
<td>Theatre Appreciation</td>
<td>3</td>
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<tr>
<td>THEA-1100</td>
<td>Survey and Appreciation of American Musical Theatre</td>
<td>3</td>
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<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
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<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
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### Social and Behavioral Sciences

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<tr>
<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
<td>3</td>
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<tr>
<td>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
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### Economics

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<td>ECON-1210</td>
<td>Survey of Economics</td>
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<tr>
<td>Code</td>
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<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
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<td>GEOG-1010</td>
<td>World Regional Geography</td>
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<td>Environmental Geography</td>
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<td>GEOG-1050</td>
<td>Africans in the Americas</td>
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<tr>
<td>GEOG-1510</td>
<td>Regional Geography of the United States and Canada</td>
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<td>HIST-1010</td>
<td>History of Civilization I</td>
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</tr>
<tr>
<td>HIST-101H</td>
<td>Honors History of Civilization I</td>
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<td>History of Civilization II</td>
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<td>HIST-102H</td>
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<td>HIST-1510</td>
<td>United States History to 1877</td>
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<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
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<td>HIST-152H</td>
<td>Honors United States History since 1877</td>
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<td>HIST-1630</td>
<td>History of Immigration in America</td>
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<td>HIST-1700</td>
<td>History of Africa</td>
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<td>African American History-History</td>
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<td>African American History 1877-present</td>
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<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
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<td>Women in American History</td>
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<td>POL-1010</td>
<td>American National Government</td>
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<td>POL-101H</td>
<td>Honors American National Government</td>
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<td>POL-1020</td>
<td>State &amp; Local Government</td>
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<td>POL-2030</td>
<td>Comparative Politics</td>
<td>3</td>
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<td>POL-2060</td>
<td>Political Systems of Africa</td>
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<td>POL-2070</td>
<td>International Relations</td>
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<td>Constitutional Law</td>
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<td>Introduction to Industrial/Organizational Psychology</td>
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<td>PSY-2010</td>
<td>Child Growth and Development</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>PSY-2040</td>
<td>Social Psychology</td>
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<td>PSY-2050</td>
<td>Psychology of Personality</td>
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<td>PSY-2060</td>
<td>Adolescent Psychology</td>
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<td>Abnormal Psychology</td>
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<td>PSY-2100</td>
<td>Introduction to Aging</td>
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<td>PSY-2110</td>
<td>Educational Psychology</td>
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<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
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<td>SOC-1020</td>
<td>Social Institutions</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2010</td>
<td>Social Problems</td>
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<td>SOC-201H</td>
<td>Honors Social Problems</td>
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<tr>
<td>SOC-2020</td>
<td>Sociology of the Family</td>
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<td>SOC-2100</td>
<td>Aging and Society</td>
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<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
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<td>Contemporary American Black-White Relations</td>
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<td>Urban Sociology</td>
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<td>Race and Ethnic Relations</td>
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<td>UST-1020</td>
<td>Urban Geography</td>
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<td>UST-2020</td>
<td>Urban Cultures</td>
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<td>Urban Politics</td>
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<td>American Urban History</td>
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<td>Introduction to Women's Studies</td>
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<td>WST-2010</td>
<td>Women in the World</td>
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<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
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<td>BIO-1040</td>
<td>The Cell and DNA</td>
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<td>The Cell and DNA Laboratory</td>
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<td>Human Biology</td>
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<td>Human Biology Laboratory</td>
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<td>Environment, Ecology, and Evolution</td>
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<td>Environment, Ecology, &amp; Evolution Laboratory</td>
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<td>Anatomy and Physiology of the Eye</td>
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<td>Horticultural Botany</td>
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<td>Anatomy &amp; Physiology of Domestic Animals I</td>
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<td>Principles of Biology I</td>
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<td>Principles of Genetics</td>
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<td>Techniques in Molecular Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2100</td>
<td>Biology of Aging</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2150</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2200</td>
<td>Radiobiology</td>
<td>2</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2600</td>
<td>Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1000</td>
<td>Everyday Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-100L</td>
<td>Everyday Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
</tbody>
</table>
Elective Graduation Requirements (15 semester credits)

The remaining fifteen (15) semester credits to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework and physical education. Courses taken to meet general education requirements in Communication, Mathematics and Data Analysis, Arts and Humanities, Social and Behavioral Sciences, or Natural and Physical Sciences cannot count towards fulfilling elective graduation requirements. Selection of elective semester credit hours of coursework shall be related to the occupational objective of the student of the basic components to further develop technical competencies.

Program Requirements

The program leading to an Associate of Technical Study degree must have an area of concentration which is equivalent to thirty (30) semester credits in technical studies and clearly identifiable with a career objective. Approximately one-half of each Associate of Technical Study program is devoted to non-technical studies.

Cross-listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses.

General Curriculum Information

Academic Credit

Academic Credit According to the Ohio Department of Higher Education, one (1) semester hour of college credit will be awarded for each lecture hour. Students will be expected to work on out-of-class assignments on a regular basis which, over the length of the course, would normally average two hours of out-of-class study for each hour of formal class activity. For laboratory hours, one (1) credit shall be awarded for a minimum of three laboratory hours in a standard week for which little or no out-of-class study is required since three hours will be in the lab (i.e. Laboratory 03 hours). Whereas, one (1) credit shall be awarded for a minimum of two laboratory hours in a standard week, if supplemented by out-of-class assignments which would normally average one hour of out-of-class study preparing for or following up the laboratory experience (i.e. Laboratory 02 hours). Credit is also awarded for other hours such as directed practice, practicum, cooperative work experience, and field experience. The number of hours required to receive credit is listed under Other Hours on the syllabus. The number of credit hours for lecture, lab
and other hours are listed at the beginning of the syllabus. Make sure you can prioritize your time accordingly. Proper planning, prioritization and dedication will enhance your success in your coursework.

The standard expectation for an online course is that you will spend 3 hours per week for each credit hour.

Courses offered in other part of terms (e.g. 14 week, 8 week, flexibly scheduled, etc.) ensure equivalent workloads. Students should prioritize their time accordingly, particularly when taking part of term courses.

Catalog-in-Force

Each student’s Catalog-in-Force, or degree or certificate requirements, is the College Catalog which is in effect when a student first enrolls in credit courses at Cuyahoga Community College. Students have three (3) years in which to complete their degree or certificate program requirements. If the student has not completed the degree in a 3-year period, the student must satisfy requirements of a Catalog-in-Force within the most recent 3 years. Three exceptions to this exist:

1. The College may, by notification to the student, determine different requirements if the student has not completed the declared program in a three-year period.
2. For programs that have selective admission, a student’s Catalog-in-Force requirements (degree or certificate program requirements) are those that are in effect the term a student is accepted into the program and enrolls in program courses.
3. A student who has been away from the College for two consecutive semesters, including summer session, (i.e. Fall and Spring OR Spring and Summer OR Summer and Fall) will follow the Catalog-in-Force (degree or certificate program requirements) effective the term the student re-enrolls in credit courses.

In addition, the College reserves the right to change course offerings and academic requirements as deemed necessary.

Requests for exception or questions about Catalog-in-Force should be submitted to the Registrar upon the recommendation of a counselor.

Choosing a Technical Career Field

Students who want to prepare for specific technical roles in various fields should consider the several program concentrations offered in the general fields of business, engineering, health, public service, agriculture and natural resources, and apprenticeships.

Study in these programs lead to either the Associate of Applied Business or Associate of Applied Science degree; one of the customized degrees available is the Associate of Technical Study; or one of the certificates.

General Application Procedures for Degree and Certificate Programs

Many programs require proficiency requirements to be met before acceptance into the program. This may require taking specific courses or assessment tests before beginning a program, or meeting specific program requirements. Admission to the Nursing program and other health career programs is limited to the number of openings in each program. Students who apply and meet the admission requirements are admitted into the program of choice in the order in which their completed application is received. Program admission requirements are included with each program sequence. Learn more about application procedures for Health Careers (p. 115) and Nursing (p. 116) programs.

Semester Course Numbering

To simplify the task of maintaining accurate and complete academic records for all students at the College, an alpha-numeric code is used to identify all courses. In this code, the alpha characters indicate the subject area. For example, World Regional Geography carries the course number GEOG-1010. The letters GEOG refer to the subject area, Geography. The number 1010 has been assigned to a specific course, World Regional Geography, within that subject area.

Modular courses may be offered in some subject areas. A modular course is a component of an approved semester course and is identified with a final letter of A, B, C, D, or E. The course content of a modular course must be contained in the original course. Modular courses together are the equivalent of the parent course. For example, DMS-235A and DMS-235B together, would be considered equivalent to DMS-2350.

A special topics course permits the teaching of a variety of topics not currently contained in its subject area. An "18xx" numbered course indicates a freshmen-level special topics course; a "28xx" is assigned to a sophomore-level course. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements. Specific special topics offerings can be found in the Course Description section of the catalog and within the current schedule of classes.

Independent study courses are offered in some subject areas using the following course numbers: 1820 (lecture), 182S (2 hour lab), 182T (3 hour lab), 2820 (lecture), 282S (2 hour lab), and 282T (3 hour lab). Study/research title and specific content for an independent study is arranged between the instructor and student. Independent study courses may be repeated for a maximum of six credits of different topics.

Honors courses are offered in some subject areas and are designated with the final letter of "H". Honors courses are equivalent to the standard course offering and may replace the standard offering to meet degree requirements. In subject-areas that do not have a specific honors offering, a student may complete an Honors Contract (179H, 279H). An Honors contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the College (includes 179H and 279H).

Course numbers do not indicate whether or not a course will be accepted for transfer to other institutions. Students are advised to consult with their counselors regarding transfer of courses and credits to other institutions.

The course number assigned to a course helps to identify the type of course. Developmental courses begin with the digit zero. Introductory courses and major and technical courses are grouped within a number range. Field experience courses have specific course numbers that help to identify the type of field work involved. This numbering scheme is outlined below.
Equivalent courses are two or more courses that have been declared equivalent by content experts in the specific discipline. Semester courses that have been deleted are usually replaced with an equivalent course that contains the same or similar content and thus is deemed as equivalent to the deleted course. Two current courses may be declared as equivalent, such as a standard course and an honors course that cover the same material, though the honors course exceeds the requirements and outcomes of the standard course; cross-listed courses that are equivalent to the deleted course. Two current courses may be declared as equivalents and view a listing of equivalent courses.

Prerequisites

Courses which are required as prerequisites must be completed with a grade of “C” or higher in order to be eligible to enroll in the listed course. In addition, many courses require “eligibility” for a specific course as a prerequisite, i.e. Eligibility for ENG-1010 College Composition I. Eligibility for a specific course may be demonstrated by any of the following:

- Completion of Tri-C’s assessment with a score appropriate for placement into the specific course listed; OR
- Completion of the prerequisite for the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university); OR
- Completion of the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university).

Prerequisites are checked by the computer at the time of registration. Prerequisite checking does not recognize courses that were taken under quarters at Tri-C. See a counselor if you took the prerequisite coursework under quarters before trying to register.

Grading System

A (Excellent–4 pts.): A grade of “A” indicates that a student has demonstrated excellent academic performance; it carries a weight of four quality points for each credit of the course in which the grade is earned.

B (Good–3 pts.): A grade of “B” indicates that a student has demonstrated good academic performance; it carries a weight of three quality points for each credit of the course in which the grade is earned.

C (Average–2 pts.): A grade of “C” indicates that a student has demonstrated average academic performance; it carries a weight of two quality points for each credit of the course in which the grade is earned.

D (Below Average–1 pt.): A grade of “D” indicates that a student has demonstrated below average academic performance; it carries a weight of one quality point for each credit of the course in which the grade is earned.

F (Failure–0 pts.): A grade of “F” indicates that a student has failed to demonstrate minimal academic performance; it carries a weight of zero quality points for each credit of the course in which the grade is earned.

P (Pass–0 pts.): A grade of “P” indicates that a student has passed and completed a course; it carries a weight of zero quality points for each credit of the course in which the grade is earned.

NP (No Pass–0 pts.): A grade of “NP” indicates that a student has not passed and completed a course; it carries a weight of zero quality points for each credit hour of the course in which the grade is earned. “NP” represents “D” or “F” work; however, the “NP” is not included in the computation of a student's cumulative grade point average.

AU (Audit–0 pts.): A notation of “AU” indicates that a student was granted permission to register for a credit course and attend that course only one completion and the lower of the two grades is not computed into the student’s grade point average. Learn more (p. 701) about equivalencies and view a listing of equivalent courses.

Course Equivalency

Equivalent courses are two or more courses that have been declared equivalent by content experts in the specific discipline. Semester courses that have been deleted are usually replaced with an equivalent course that contains the same or similar content and thus is deemed as equivalent to the deleted course. Two current courses may be declared as equivalent, such as a standard course and an honors course that cover the same material, though the honors course exceeds the requirements and outcomes of the standard course; cross-listed courses that are equivalent to the deleted course. Two current courses may be declared as repeats: credit is earned for
on an audit basis with no academic credits to be awarded. A student **may not** convert registration from credit to audit status or audit to credit status after classes begin.

I (Incomplete—0 pts.): A notation of "I" indicates that a student has not completed all course requirements as a result of circumstances judged by the instructor to be beyond the student’s control. A student must complete all course requirements no later than the end of the sixth week of the academic term following the semester in which the "I" was noted. Failure to complete such requirements will result in an "F" (Failure) grade.

I/E: I (Include) and E (Exclude) course symbols: A course considered eligible for repeat is one that is an identical course (number, title and credits) or one officially identified as equivalent by the College Catalog (effective Fall 1998). Specialized courses with allowable accrued credits will be considered for repeat calculations only upon written request and validation by the appropriate academic area of identical topic repeat.

T (Transfer Credit): A notation of "T" indicates that a student has been awarded credit for coursework which has been evaluated and accepted in transfer from another institution of higher education in accordance with Tri-C’s policy on transfer credit from other institutions. The transfer credits awarded shall not be included in the computation of a student’s cumulative grade-point average.

USF (Military Physical Education Credit—0 pts.): “USF” indicates awarded credit in recognition of physical education training received by a student who has served on active duty in the military services of the U.S. for at least 365 days as documented on the student’s DD 214.

W (Withdrawal—0pts.): A notation of “W” indicates a student’s withdrawal from a course in accordance with Tri-C’s withdrawal policy.

WF (Withdrawal for Stopped Attending—0 pts.): A grade notation of "WF," noted with a specific date, indicates that a student stopped attending class on the noted date. "WF" will count in attempted hours, carries a weight of zero quality points and will be calculated into GPA as such. It indicates a student’s failure of the course due to stopped attendance.

APR (Academic Progress Reporting): Academic Progress Reporting informs students how they are doing with regard to meeting course requirements at the approximate midpoint of the course. Faculty assign grades of either “S” (Satisfactory) or “U” (Unsatisfactory). Students are encouraged to make an appointment to see a counselor if they receive a “U” grade in any course. Students can view their (current term only) APR grades via my Tri-C space on the Student Tab. APR grades do not appear on the student’s permanent record.

**Articulation and Prior Learning Grading**

- **AC** Articulation Credit
- **ACE** American Council on Education
- **AP** Advanced Placement
- **BYP** Bypass
- **CBE** Credit by Examination
- **CCT** Career Technical Credit Transfer
- **CEL** Council for Adult and Experiential Learning
- **CLP** College Level Examination Program
- **HAC** High School Articulation Credit
- **SLC** Service Learning Credit
- **TPC** Tech Prep Credit

A notation of "ACE", "AP", "BYP", "CBE" and/or "CLP" indicates that credit has been awarded by Tri-C as a result of a student successfully passing a College-wide equivalency exam or other recognized method of prior learning assessment. No quality points will be awarded for credits earned through successful completion of appropriate examinations, and the credits earned will not be included in the computation of a student’s cumulative grade point average. Any awarded Prior Learning Credit does not count toward the 20-hour residency requirement for graduation.

**Grade Point Average**

Grade point average (GPA) is a measure of scholastic performance. It is computed by dividing the sum of the total quality points earned by the total units of credits (quarter or semester) attempted. The following example illustrates the computation of GPA:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Credit</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

\[
GPA = \frac{29}{13} = 2.23
\]

Grade point average can be computed for any given semester or for the total of all credits attempted. When a grade point average is computed for the total of all of the credits attempted, it is referred to as the cumulative grade point average.

Courses in which the letter symbols S, U, P, NP or the action symbols AC, BYP, CCT, CEL, HAC, TCP, USF, AU, W, CBE, I, IP, T, ACE, AP, CLP, USAF are noted will not be included in the computation of a student’s grade point average.

Students who receive official permission to postpone an examination are assigned an "I" (Incomplete) as the grade for that course. **Students must personally request an incomplete grade from their instructors. It is not granted automatically.**

Incomplete grades can be removed by completing the examination or other requirements no later than the end of the sixth week of the following academic term. Failure to do so will result in an "F" (Failure) grade.

**Academic Probation or Dismissal**

A student will be placed on probation if his or her cumulative grade point average is less than shown below:

<table>
<thead>
<tr>
<th>Total Semester Cumulative Credits Attempted</th>
<th>Grade Point Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-11 inclusive</td>
<td>0.75</td>
</tr>
<tr>
<td>12-29 inclusive</td>
<td>1.50</td>
</tr>
<tr>
<td>30-50 inclusive</td>
<td>1.75</td>
</tr>
<tr>
<td>51 and above</td>
<td>2.00</td>
</tr>
</tbody>
</table>

A student will continue on probation until attaining the cumulative GPA listed above, as long as term GPA is 2.00 or higher. A student placed on academic first probation (P1) at the end of fall semester will be required to participate in one of the following Student Success Probation Interventions in order to register for courses the following fall.
A student placed on academic first probation (P1) at the end of spring semester or summer session will be required to participate in one of the following Student Success Probation Interventions in order to register for courses the following spring.

- Online Student Success Probation Workshop; or
- Academic first probation appointment with a counselor

A hold will be placed on the student’s account, prohibiting registration. Once the student has participated in one of the Student Success Probation Interventions, the hold will be removed and registration permitted.

A student will be dismissed when these four conditions are met:

- Twelve or more semester credits have been attempted at Tri-C;
- Student has been on the academic status of Probation for two consecutive semesters at Tri-C;
- Cumulative GPA is less than shown in the chart under Academic Probation; and
- Term GPA is less than 2.00.

Readmission after Academic Dismissal

A student who has been dismissed from Tri-C must petition for academic readmission. The first time a student has been academically dismissed from Tri-C, he or she will not be permitted to enroll for the next semester. A student dismissed for a second or subsequent time will not be permitted to enroll for two semesters.

A Petition for Readmission form must be submitted at least 10 business days prior to the start of the semester. Forms can be obtained from the Enrollment Center or Counseling Office.

Upon readmission after academic dismissal, students must:

- Meet with a counselor;
- Complete an academic plan; and
- Register for no more than two courses as recommended by a counselor.

Once readmitted, the academic status is “Second Probation.” The student must maintain a 2.0 grade point average in the courses taken after readmission.

Pass/No Pass Grade Option

An alternative to a letter grade (A, B, C, D and F) is the Pass/No Pass grade option which allows students to earn credits for a course without the penalty of a grade impacting their grade point average.

A Pass (P) grade is awarded for A, B or C work in the course. A No Pass (NP) grade is awarded for D or F work. A student can elect up to 12 credits taken as Pass/No Pass to fulfill degree requirements at Tri-C. Whereas audited courses do not transfer, Pass/No Pass courses may transfer to another college or university. Check with the receiving institution on their transfer policy concerning Pass/No Pass courses.

Considerations before selecting a P/NP Grade:

Some restricted or selective admission programs require traditional letter grades (A, B, C, D) for their core course requirements. Courses used as prerequisites or core courses for health career and nursing programs must have a traditional letter grade – P/NP grades will not be accepted.

Students are responsible for consulting with their program manager or counselor to determine Pass/No Pass grading options.

The P/NP grade option cannot be converted back to a letter grade nor can a letter grade option be converted to the P/NP option after the 100% refund period. If a letter grade is required for a course taken as Pass/No Pass, the course must be retaken.

College Credit Plus students are not eligible to utilize the Pass/No Pass option.

Courses taken Pass/No Pass count toward financial aid enrollment requirements.

Auditing a Course

Auditing a course means that a student attends classes but is not required to submit assignments or take examinations. Students, therefore, receive neither a grade nor course credit. Students must indicate their intention to audit a course on a separate audit form to be completed during the audit registration period. The auditing fee is the same as for a student regularly enrolled for credit. Credit courses or Pass/No Pass courses cannot be converted to audit status, nor can audited courses be converted to credit or Pass/No Pass status after audit registration ends.

Careful consideration is advised before auditing a course. When uncertain whether to audit a course, students should see a counselor. Registration for auditing a course or courses may be completed in person only. Audited courses may be added on the dates published in the semester Enrollment Guide, available at www.tri-c.edu/student-resources/enrollment-guide.html.

Honors Program

Tri-C’s Honors Program provides an academically rewarding and enriching learning experience for all qualified students. The Honors Program is separate from, but complements, the Phi Theta Kappa Honor Society. Students in the Honors Program are invited to participate in various cultural events, co-curricular experiences and honors colloquia to supplement the honors classes they take as part of the program. Membership is free and scholarships are available. Students intending to transfer to a four-year institution after completing their coursework at Tri-C are especially encouraged to consider the Honors Program. More information, qualification criteria and the online membership application are available at www.tri-c.edu/honorsprogram.

Academic Honors: Dean’s List

The Dean’s List recognizes students whose academic achievements are considered outstanding. The list includes all students who have earned a grade point average of 3.50 or greater while completing 12 or more credit hours during the preceding term.

Graduation with Honors

Candidates for associate degrees who demonstrate outstanding academic achievement graduate from Tri-C with honors. Graduation with honors is conferred upon candidates as follows, based upon their cumulative grade point average:

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Honors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.50 – 3.69</td>
<td>Cum laude (with honors)</td>
</tr>
<tr>
<td>3.70 – 3.89</td>
<td>Magna cum laude (with great honors)</td>
</tr>
</tbody>
</table>
Summa cum laude (with highest honors) 3.90 – 4.00

Honors designations are based solely upon coursework completed at Tri-C, including grades that have been recalculated or forgiven under other policies. Honors candidates are recognized in the Commencement Guide at each ceremony based upon coursework completed prior to their final term of enrollment. Following completion and verification of all degree requirements—including final term courses—honors designations are inscribed on diplomas and noted on official transcripts.

**General Graduation Information**

The Office of the Registrar is responsible for identifying students who have met all the requirements for degree or certificate programs at Cuyahoga Community College. Students who have met the requirements will be graduated. Students will receive an email from the Office of the Registrar to their Tri-C email account once a graduation petition is submitted. This email will confirm that the student has registered for the necessary courses and, pending successful completion of those courses, they can expect to receive their diploma(s) or certificate(s) at the end of the semester. Once those courses have been completed successfully, students will be graduated. Graduates will receive their diploma(s) or certificate(s) through the U.S. Postal Service based on the address on file with the College.

**Repeating a Course**

A course considered eligible for repeat is one that is an identical course (number, title and credits) or one officially identified as equivalent by the College Catalog (effective Fall 1998). Specialized courses with allowable accrued credits will be considered for repeat calculations only upon written request and validation by the appropriate academic area of identical topic repeat.

Students who have received credit for a course with a grade of "D" or higher or a "P" grade may only repeat a course and receive credit one additional time to improve the grade and receive federal financial aid funds for that course. When an identical course is repeated, the highest grade will be used in computing the cumulative grade point average. "P" and "NP" grades are not counted toward grade point average calculations. Likewise, repeated grades of "F" for which students repeat and earn a passing grade, the highest grade will be used in computing the cumulative grade point average but a student only earns credit once for that passed course. An include/exclude symbol (I/E) will be noted on all repeated courses to denote the grade that is included in and excluded from your cumulative grade point average.

Credit for courses will be awarded only once in the semester in which the highest grade was awarded for the course, unless the course description specifically states that additional credit may be earned.

Students planning to transfer to another college or university are cautioned that the receiving institution may use ALL grades earned to compute a grade point average for admission purposes. Federal financial aid funds may be used only one time to repeat previously passed courses. Since repeating a course may have an adverse effect on financial aid eligibility, including grade point average and completion rate, students are urged to consult with the Student Financial Aid & Scholarships Office and a counselor before repeating a course.

**Fresh Start – GPA Adjustment Procedure for Student Success**

The Fresh Start procedure allows Tri-C to consider a GPA adjustment for students who have received failing grades at the College. This procedure is not applicable to students previously awarded this consideration.

For detailed information, contact the Counseling Office at 216-987-6000.

**Transcripts of Grades**

Student Academic Performance information is available on my Tri-C space under the Student tab/Academic Records channel. Students can view this unofficial educational record at any time. Academic Progress Reports and final grades are available on dates indicated in the Academic Calendar. Students must file all grade disputes within 60 calendar days after the disputed grade is recorded. Students may request official academic transcripts via my Tri-C space on the Student tab. Students receive one free transcript upon graduation.

**Withdrawal**

Students may withdraw from any semester course prior to the end of week 12 of the full semester (or 80 percent of any instructional part of the semester). Specific withdrawal dates and refund deadlines are available in the Enrollment Guide, on the Paying for College tab on my Tri-C space and at any campus Enrollment Center.

Students must withdraw online or submit a withdrawal form at the Enrollment Center by the established deadline. Students may also withdraw by letter or fax sent directly to the Enrollment Center. The postmark on the letter or date of the fax determines the refund amount.

Enrollment Center fax numbers:
- East Campus: 216-987-2214
- Metropolitan Campus: 216-987-3283
- Western Campus: 216-987-5071
- Westshore Campus: 216-987-5294

When withdrawing by letter or fax, request must include:
- Name
- Student ID number (S-number)
- Phone number
- Semester of the course being dropped
- Course number(s)
- Student signature

The refund schedule for all parts of the semester/session is determined in proportion to the full semester schedule as established by College procedure.

Withdrawal from a course prior to the last day of the second week of the semester will have no notation made in permanent records; withdrawal thereafter will be noted with a "W".

Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Tri-C is responsible for identifying students who have not attended or logged into a class for which they are registered. At the conclusion of the first two weeks of a semester, instructors may report
any registered students who have never attended a class so that those reported students will be administratively withdrawn from that class. However, it is the student’s responsibility to withdraw from any class which he or she is no longer attending or risk receiving a failing grade in that class.

Withdrawals related to student conduct are administrative withdrawals processed by the dean of Access and Completion.

All transactions involving course withdrawal shall be completed in writing and on forms provided by Tri-C or through electronic means. A student’s failure to attend classes shall not constitute an official withdrawal.

**Petition for Withdrawal Exception**

Beyond week 12 (or 80 percent of any instructional part of a semester), a student who is unable to complete the current semester for reasons beyond his or her control (such as an emergency medical condition or other extenuating circumstances) may petition for late withdrawal by completing a Petition for Withdrawal Exception and submitting substantiating documentation to the Enrollment Center. The Withdrawal Exception Review Committee meets monthly to review petitions. Submission of a Petition for Withdrawal Exception does not guarantee approval. A recommendation by the committee to deny a request is final. A recommendation by the committee to approve a request must also have the appropriate instructor and academic dean’s approval when a student has received a final grade. Students must submit a Petition for Withdrawal Exception within 30 days of the end of the academic semester for consideration. Conditions approved under past withdrawal petitions may not be approved again.

**Online, Blended, and Distance Learning**

**Online and Blended Learning**

As an alternative to the traditional classroom environment, Cuyahoga Community College offers more than 800 online and blended learning courses. For students who are self-directed, motivated and tech savvy, this can be a flexible and effective way to earn college credit. To successfully complete an online or blended course, a student must be computer literate. This means you must be able to attach, create, modify and save electronic documents, upload/download files, navigate the internet and use email.

Registration procedures are the same as on-campus courses, however there is an additional $10 per credit hour fee for on-line classes.

For additional information about online and blended learning courses, visit www.tri-c.edu/online or email OLAT@tri-c.edu (elearning@tri-c.edu).

**Online**

Online courses use Blackboard Learn, an internet-based learning management system (LMS), for course delivery and assignments.

- The Blackboard Learn LMS is available 24/7.
- Students should access their course(s) daily.
- Students must use Tri-C email. It is the official and primary method of communication between you and the College.
- Students should be able to watch and create basic video presentations using a laptop/PC or mobile device.

- Students must be able to use a web browser and modify settings related to security, pop-ups and firewalls.
- Students must know how to create, modify and attach documents.
- Students must know how to save, upload and download files.
- Technology is constantly improving. For a complete list of technical requirements, please visit [http://www.tri-c.edu/online-learning/technology-resources/minimum-technology-requirements.html](http://www.tri-c.edu/online-learning/technology-resources/minimum-technology-requirements.html).

**Blended Learning**

The term “blended learning” describes courses that blend online learning with face-to-face classroom instruction.

- Students attend class on campus and complete course assignments via the computer.
- Students must be able to use a computer, watch video content, navigate the internet and use email.
- Technology is constantly improving. For a complete list of technical requirements, please visit [http://www.tri-c.edu/online-learning/technology-resources/minimum-technology-requirements.html](http://www.tri-c.edu/online-learning/technology-resources/minimum-technology-requirements.html).

**Proctored Online Testing**

Proctored testing may be required in some online and blended learning courses – particularly math courses. A “suitable proctored environment” is an environment directly monitored by an instructor, testing center administrator or other learning provider, in a physical or virtual (online) setting approved by faculty. While proctors must be approved by the instructor, some suitable proctors may include Tri-C Testing Centers, other accredited college or university testing centers, ProctorU and military education centers. If the testing center requires a fee, it is the student’s responsibility to pay that fee.

Tri-C has contracted with ProctorU to provide online (virtual) test proctoring services to our students at a discounted rate. Each fully online student is allowed to take up to two exams, in the form of two 31-60 minute exams OR one 61-120 minute exam free of charge. Any additional online exam(s) proctored by and taken with ProctorU must be paid for by the student. However, online students are able to take advantage of Tri-C’s discounted rates. Log in to Blackboard Learn and visit the Student Homepage to see the published discounted ProctorU rates.

More information on proctored testing is available at [http://www.tri-c.edu/placement-testing/academic-testing.html](http://www.tri-c.edu/placement-testing/academic-testing.html) and [http://www.tri-c.edu/online-learning/technology-resources/ProctorU.html](http://www.tri-c.edu/online-learning/technology-resources/ProctorU.html).

**Distance Learning**

**Smart CLASS** allows students to take credit courses and choose whether to participate “live” in a classroom through cable television and the Internet or watch replays at their convenience online.

- Smart CLASS courses are broadcast on Tri-C’s SmartTV and video streamed on the SmartTV Web site at: [http://flash-server1.tri-c.edu/index.html](http://flash-server1.tri-c.edu/index.html).
- Students enrolled in Smart CLASS are able to replay their courses at any time at: [https://tricsmarttv.viebit.com](https://tricsmarttv.viebit.com).
- SmartTV is Cuyahoga Community College’s television station and is broadcast on Time Warner cable’s digital channel 195 (must have cable box or a digital TV to view) in the City of Cleveland, on Cox Cable digital Channel 216 in the following communities: Broadview Heights, Brooklyn Heights, Fairview Park, Lakewood, Olmsted Falls, Olmsted Township, Parma, Parma Heights, Rocky River, Seven Hills, and on Brunswick Area Television Channel 24.
Independent Learning (IL)

Independent Learning courses are designed as alternatives to on-campus classroom instruction, offering maximum scheduling flexibility for students interested in independent study.

- Students complete assignments from the text and study guide and complete exams on-campus.
- IL courses require viewing videos or listening to audios. Course materials are available at Tri-C libraries, some for checkout. Some programs are available for purchase at the Tri-C Bookstores.
- Some video programs are available on the Internet through Video on Demand (VoD), requiring Windows Media Player and a high-speed (cable or DSL) connection to the Internet.
- It is recommended students attend on-campus seminars, offered via closed-circuit television to enable participation from any Tri-C campus, which provides an opportunity for class discussion and course review.
Admissions Requirements

Admission to Tri-C is open to all high school graduates, anyone with documentation of successful GED completion, non-high school graduates participating in dual enrollment programs, and those 18 years of age or older.

It is not necessary to enroll in a specific program to be admitted to Tri-C. Students can enroll in:

- A two-year program to prepare for transfer to a four-year college;
- A career/occupational program to prepare for employment; or
- Individual courses for personal interest.

Tri-C’s general admissions procedure does not ensure admission to a particular course or program. In some instances, certain courses may be restricted to program majors. Admission to a specific program may be competitive or require specific minimum qualifications. Some students may be requested to enroll in special courses to eliminate deficiencies in academic preparation.

Applicants are urged to begin the admissions process well in advance. Students may take courses at more than one campus.

Student records are inactivated after a period of three consecutive semesters where no registration activity has occurred. Students with an inactive status must reapply online for admission to the College. https://www.tri-c.edu/get-started/index.html

Residency Requirements

Tri-C is supported by Cuyahoga County taxpayers and assisted by the State of Ohio. Students who reside outside of Cuyahoga County pay out-of-county or out-of-state tuition. A student’s official residency status is determined at the point of admission according to the residency policies of the State of Ohio, the Ohio Department of Higher Education, and the Tri-C Board of Trustees. A change to a Cuyahoga County address does not constitute an automatic change to in-county residency for tuition purposes. It is the student’s responsibility to request a change of residency status by submitting a Petition for Change of Residency Status and providing supporting documentation to the Enrollment Center by the Friday prior to the student’s first class in order for the change to be effective for that semester.

To see if you qualify for a change of residency, visit www.tri-c.edu/residency or any campus Enrollment Center.

Selective Service

All male U.S. citizens (and those with a permanent resident card) between the age of 18 and 25 are required to register with Selective Service to qualify for in-county or in-state tuition rates and to be eligible for financial aid. The admission application requires a Selective Service Registration number or reason for exemption. In accordance with the Defense Department Authorization Act (Pub. L. 97-252) and Ohio Revised Code §3345.32, any student who is required to register with the Selective Service and fails to do so will be ineligible for federal and State of Ohio student financial aid funds. Contact the Enrollment Center or Student Financial Aid & Scholarships office at any campus for further information.

International/Foreign Students

U.S. immigration laws impose a variety of requirements or restrictions on college enrollment. If you already have or are applying for the status of an F-1 non-immigrant student, you must consult with a Special Student Services Coordinator before applying and registering for classes. F-1 students with a FORM I-20 from Tri-C must successfully complete a minimum of 12 credits per semester in order to maintain status. Nine of the 12 credits must be taken as traditional seat-based (in-person) or blended learning (in-person/online) classes; the remaining 3 credits may be taken via distance learning, which includes online, independent-learning, and cable college. A Special Student Services Coordinator is available at each of the campuses to address deadlines for F-1 international student admission and for other F-1 information.

For information that involves maintaining your visa status, such as work permission, authorized withdrawals, transfers, and program extensions, visit www.tri-c.edu/get-started/international-students or see the Special Student Services Coordinator at the campus listed on your I-20:

<table>
<thead>
<tr>
<th>Campus</th>
<th>Phone Number</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>216-987-2118</td>
<td>Student Services Building, Room 1605</td>
</tr>
<tr>
<td>Metro</td>
<td>216-987-4167</td>
<td>Student Services Building, Room 009</td>
</tr>
<tr>
<td>West</td>
<td>216-987-5203</td>
<td>Student Services Building, Room 220</td>
</tr>
<tr>
<td>Westshore</td>
<td>216-987-5884</td>
<td>Enrollment Center</td>
</tr>
<tr>
<td>CCW</td>
<td>216-987-5884</td>
<td>Enrollment Center</td>
</tr>
</tbody>
</table>
Transient (Visiting) Status

1. If a student wishes to take a course for credit at another institution while attending Tri-C, he or she should:
   • Request a Transient (Visiting) Student form from the Counseling Office.
   • Complete the form, obtain approval from a counselor and return it to the Enrollment Center.
   • The Enrollment Center will confirm the student’s status.
   • Upon completion of the course, the Tri-C student should request an official transcript be sent from the visiting institution to:
     Office of the Registrar
     P.O. Box 5966
     Cleveland, OH 44101-0966

2. If you are attending another college or university and would like to take classes that will transfer back to your home institution, apply as a visiting or transient student at Tri-C. Visit www.tri-c.edu/get-started/visiting-students.html for more information.

How to Apply

• Complete the online application at www.tri-c.edu/apply.
• Submit an official high school transcript with graduation date or GED scores. Request that the high school or GED office send the transcript directly to:
  Office of the Registrar
  P. O. Box 5966
  Cleveland, OH 44101-0966

GED transcript request forms are available in the Enrollment Center.
• Submit official transcripts from all colleges and universities attended. Request that the college or university officials send transcript(s) directly to:
  Office of the Registrar
  P. O. Box 5966
  Cleveland, OH 44101-0966

Those wishing to attend Tri-C while attending another college or university are accepted as Transient (Visiting) students. Check with your college advisor concerning your home institution's procedures on Transient (Visiting) enrollment before you apply and enroll under this status.

New Student Orientation

The mandatory First Year Experience helps students understand college expectations, make informed program choices and identify needed coursework. The First Year Experience begins with an in-person orientation. Tri-C's New Student Orientation sessions are designed to assess, inform and prepare students prior to beginning classes. Orientation is required for students new to college and recommended for students who have previously attended another college or university. Orientation provides students with information essential to successfully begin and proceed with their education at Tri-C. For more information about orientation and initial academic advising, contact the Counseling Office at 216-987-6000 and select option #4.

Testing Services

All Tri-C campuses and the Brunswick University Center offer course placement and testing services. Tri-C assesses students' English and math skills and prescribes enrollment in appropriate English, math and English as a Second Language courses to maximize opportunities for open access, equity and academic excellence.

The following students must participate in the assessment and placement process prior to registration:

• All students registering for an initial English, math or English as a Second Language course;
• All students who register for 12 or more credits during their initial term at Tri-C;
• All students who have accumulated a total of 12 credits during previous terms; and
• All applicants who are currently in high school.

Students may take the English and math placement tests twice without charge within a two year period. Placement scores will be valid for a maximum of two years after the test administration date and the highest eligible placements will be considered for registration purposes. Persons holding a college degree may have the assessment process waived.
Students whose native language is not English must take the College’s English as a Second Language test.

Students may use qualifying ACT or SAT scores instead of taking the math and English placement tests.

Students who perform well on the placement tests may reduce the number of courses they are required to take. Therefore, students must complete mandatory test preparation prior to testing for the first time. Students should contact their preferred campus Testing Center for more information about placement testing and the mandatory test preparation process.

**Fast Forward**

Fast Forward, Tri-C’s foundational learning program, requires that students who place into developmental classes enroll in these classes during their first semester. Completing developmental courses first increases students’ basic skills, which can increase their chances of success in college-level coursework.

**Registration**

Students must be admitted to Tri-C before registering for classes. Students can register online or in person at the Enrollment Center.

**Waitlist**

Waitlisting allows a student to add themselves to a waitlist for a class that has met its maximum enrollment limit. This gives a student the opportunity to register for a closed class when a seat becomes available. Holds will prevent students from using the waitlist option.

When a seat becomes available, an email notification is sent to the Tri-C email address of the student who is next in line on the waitlist. The student has exactly 18 hours (including weekends and other days the College is closed) to register for the course before they are dropped from the waitlist and the next student is notified.

**Full-Time/Part-Time Status**

A student must take at least 12 semester credits to be considered a full-time student. A counselor or advisor may recommend a heavier or lighter load depending on ability and/or past performance. A part-time student is one who is registered for 11 credits or fewer.

Each credit typically requires a minimum of two hours of outside study each week. A student employed full-time should probably not attempt to carry more than two courses per semester. A student who is working part-time might consider taking more than two courses per semester, depending on other demands made on his or her time.

**Cancelled Classes**

Tri-C may occasionally cancel a class due to insufficient enrollment. Every effort is made to notify students when this occurs. Those affected may register for a different class during the registration period. Students will receive a full refund for the cancelled course.

**Prerequisites**

Prerequisites are established by each department, for each course in that department, to ensure that the student has an adequate and sufficient background to enroll in a course and achieve success. A passing grade of “C” or better is required. It is the student’s responsibility to ensure that he or she has met the prerequisites for any course in which he or she enrolls. Prerequisites will be checked at the time of registration. If the student is unsure that the prerequisite has been met, he or she should consult with the academic department or Counseling Office prior to registering for that course. Note: Students who have taken prerequisite courses at Tri-C prior to Fall 1998 will be required to obtain an exception from a counselor or academic department in order to register for some courses. Students who are transferring to Tri-C should submit their transcripts to determine if prior coursework meets prerequisites.

**Course Adjustment Period**

Students may adjust their schedules during the first week of the term but may only register for a course that has not already met. For permission to enter a course that has already met, a Registration Exception form must be completed and approved by the instructor and academic associate dean responsible for the discipline. Students must submit the completed Registration Exception form to the Enrollment Center to finalize registration.

Contact the Enrollment Center or refer to my Tri-C space for withdrawal/refund information.

**Changes in Curriculum, Fees, and Other Requirements**

The Cuyahoga Community College Board of Trustees reserves the right to change – at any time and without notice – graduation requirements, fees and other charges, curriculum, course structure and content, and such other matters as may be within its control, notwithstanding any information set forth in this Catalog.

**College Credit Plus**

College Credit Plus allows students in grades 7-12 to earn college and high school credits at the same time by taking courses at Cuyahoga Community College. The program promotes rigorous academic pursuits and provides a wide variety of options to college-ready students. Courses taken through the College Credit Plus program are typically free, with no
out-of-pocket cost for tuition, books, or fees. Visit www.tri-c.edu/college-credit-plus for more information.

Transfer from Tri-C

While a student works toward completion of an associate degree, and if a bachelor’s degree is their educational goal, they should begin the process for successful transfer to a four-year institution to pursue the bachelor’s degree after earning the associate degree. Transferring courses from Tri-C to another college or university begins when the student meets with a counselor and selects transferrable courses using available resources such as statewide guarantees, transfer guides, articulation agreements, and approved transfer pathways. It is highly recommended that students who plan to transfer meet with a counselor early and often in their college career. Courses a student selects should meet Tri-C’s minimum graduation requirements and, ideally, as many of the transfer institution’s graduation requirements as possible. The student should also meet with a Tri-C Transfer Center specialist to discuss pre-transfer planning, including their transfer timeline. The Transfer Center specialist can help in a number of ways, such as connecting the student to an admission and/or advising representative at the transfer institution who will have the most recent information on that institution’s procedures and requirements. Please note that acceptance of transfer credit is always at the discretion of the receiving institution.

To shorten a student’s path from associate to bachelor’s degree, the Ohio Department of Higher Education has established credit transfer guarantees, which include courses in the Ohio Transfer Module (OTM) and Transfer Assurance Guides (TAGs), among others. These courses are guaranteed to transfer to any four-year public college or university in Ohio and ensure comparable, compatible, and equivalent learning experiences across Ohio’s public higher education system. Knowing in advance that courses will transfer gives students the flexibility to choose lower cost, more convenient options. In addition to saving money, a student who takes advantage of transfer guarantees and graduates with an associate degree is more likely to excel academically and to also graduate with a bachelor’s degree. Learn more about the Ohio Transfer Module. Learn more about Transfer Assurance Guides.

Courses that are not part of the OTM or a TAG are assured to transfer only as part of an approved articulation agreement between Tri-C and a four-year college or university. Learn more about approved articulation agreements. A Tri-C counselor or Transfer Center specialist can provide information about which courses and degree programs have articulated credit. Note that courses with numbers lower than 1000 usually do not transfer. Learn more (p. 45) about semester course numbering (choose Semester Course Numbering on the landing page).

A student planning to transfer to a four-year institution to pursue a bachelor’s degree after earning their Tri-C associate degree should schedule a meeting with their intended transfer institution’s admission office to make sure they have met all of that institution’s admission and transfer requirements. As part of its admission review process, the transfer institution will require official transcripts of college-level courses that the student has completed. Learn more about ordering Tri-C transcripts online at $5 per transcript.

Transfer to Tri-C from Another Institution

Students who wish to transfer to Tri-C should follow the established admission procedures. The acceptance of transfer credits by Tri-C will be determined to the extent feasible within the context of agreements and working relationships between Tri-C and other institutions of higher learning.

Tri-C has agreed to accept credit from colleges and universities accredited by regional accrediting associations. Tri-C also accepts credit from other institutions that can demonstrate that instruction provided at their institution meets Tri-C’s standards.

Transfer credit may be awarded for courses earned through the college-level United States Armed Forces Institute (USAFI).

Ohio College Tech Prep

Ohio College Tech Prep is a seamless, non-duplicative, integrated pathway of education and experience that starts in high school, continues through postsecondary, and leads to success in a student’s chosen technical career field. It prepares students for high-skill, high-demand technical careers in a competitive global economy.

The curriculum reflects real-world technical careers in high demand today. Programs may be offered in the following career fields: Agriculture and Environmental Systems; Arts and Communication; Business and Administrative Services; Construction Technologies; Education and Training; Engineering and Science Technologies; Family and Consumer Science; Finance; Government and Public Administration; Health Sciences; Hospitality and Tourism; Human Services; Information Technology; Law and Public Safety; Manufacturing Technologies; Marketing; and Transportation Systems.
Tri-C serves as a higher education partner of the Ohio College Tech Prep Partnership, offering college credits to high school Tech Prep students. Tech Prep enables a smooth transition from high school into two- and four-year college degree programs.

Call 216-987-4987 or visit www.tri-c.edu/techprep for more information.

**Career Technical Credit Transfer**

Career-Technical Credit Transfer (CT²) is a collaborative effort among the Ohio Department of Higher Education (ODHE), the Ohio Department of Education’s Office of Career-Technical and Adult Education, public secondary/adult career-technical education institutions, and state-supported institutions of higher education. The CT² initiative ensures that students at a secondary career-technical education institution or an adult career-technical institution can transfer successfully completed technical courses that adhere to recognized industry standards to any state institution of higher education without unnecessary duplication or institutional barriers. CT² complements the College Tech Prep program. Learn more about Career-Technical Assurance Guides (CTAGs), which identify specific courses that are part of the statewide guarantee. Learn more about Career-Technical credit transfer. Learn more about verification forms and accessing CT² credit. Learn more about the College Tech Prep program.
PAYING FOR COLLEGE

- Tuition and Fees
- Withdraws/Refunds
- Tuition Incentive Programs
- Student Financial Aid
- Scholarships
- Education Tax Credits

Tuition and Fees

Cuyahoga Community College (Tri-C®), supported by Cuyahoga County taxpayers and assisted by the State of Ohio, maintains modest tuition and fees, both of which are subject to review during any academic year by the Board of Trustees and may be changed at its discretion with the approval of the Ohio Department of Higher Education.

Visit www.tri-c.edu/payingforcollege/Pages/TuitionPaymentSchedule.aspx for current tuition and fees.

Institutional Fee

The College automatically charges an Institutional Fee at the time of registration based on the number of credit hours registered. This fee provides students with unlimited access to all campuses, recreational facilities, Technology Learning Centers, libraries and campus special events. The fee is adjusted when courses are added or dropped in accordance with the withdrawal and refund deadlines and percentages.

- 1-3 credit hours ($10)
- 4-11 credit hours ($50)
- 12+ credit hours ($70)

Withdraws/Refunds

Refunds of tuition and fees for courses of academic credit will be made when students withdraw from a course for which they have already paid the tuition in full and have no other outstanding balance. Students who choose not to complete a course must officially withdraw from the course. Tri-C is not obligated to refund students who have not withdrawn or not paid the tuition, even if they did not attend a class. Financial Aid students should contact their campus Student Financial Aid Office to determine how a withdraw will affect their aid eligibility.

The following schedule governs all tuition and fee liability and available refunds for full-term courses of academic credit. You may still be responsible for all or a percentage of the tuition and fee charges.

<table>
<thead>
<tr>
<th>Tuition and Fees for Full Semester</th>
<th>Liability</th>
<th>Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Week</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Second Week</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Third Week</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Fourth Week</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Fifth Week and after</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The withdraw/refund schedule for all parts of semester and the summer session will be determined in proportion to the full semester schedule. Refunds for the current term begin 2 weeks after the start of the term. Refunds for Financial Aid begin later in the term. Please visit http://www.tri-c.edu/paying-for-college/withdraw-refund.html for more information.

Full refunds of instructional, general and supplemental fees are granted only if Tri-C cancels a course or if a student withdraws during the 100% refund period (see preceding schedule).

No refunds are granted if a student is dismissed from Tri-C for disciplinary reasons.

Tuition Incentive Programs

The College offers several tuition incentive programs to help students save money on their education. These programs include tuition discounts for certain programs or courses, as well as scholarships and grants that can be applied to tuition and fees. Students are encouraged to explore these options to find the best fit for their individual financial situation.
Tuition Incentive Programs

At Cuyahoga Community College (Tri-C®), we are committed to student success and completion. Thus, we offer a variety of programs to not only save you money, but also put money in your pocket for achieving academic milestones. Tuition Guarantee locks-in tuition rates for up to 3 years! 15+ Perks awards you for remaining full-time and enrolling each semester. And our new, 30 Credit Hour Standard will discount summer tuition when you achieve 30 credits within the academic year. Sign up for our Tuition Incentive Programs on My Tri-C Space.

Tuition Guarantee
The Tuition Guarantee Program at Tri-C is an incentive for you to enroll full time for three years and pay the same tuition throughout that period. We want this program to keep you at Tri-C until you complete your degree or certificate.

To be eligible for the Tuition Guarantee Program you will need to:

• Be a new student (first time in college)
• Commit to a three-year agreement
• Attend consecutive fall and spring semesters with no breaks (summer attendance is optional)
• Stay enrolled for at least 12 credit hours each term
• Complete a “DegreeWorks” academic plan by the end of the second term of enrollment
• Sign the Tuition Guarantee Program Agreement

15+ Perks
The 15+ Perks Program at Cuyahoga Community College (Tri-C®) is an incentive for you to enroll full-time and earn rewards equal to 50 percent of tuition.

To be eligible for the 15+ Perks Program you will need to:

• Complete the FAFSA (Free Application for Federal Student Aid) at www.fafsa.gov
• Have completed all developmental education requirements and have a 2.0 cumulative grade point average
• Enroll in at least 15 credits in a fall or spring semester, or at least 7 credits in a summer semester
• Sign the 15+ Perks Program Agreement

30 Credit Hour Standard
The 30 Credit Hour Standard provides a tuition reduction for summer semester when you achieve 30 credits within the academic year.

• Complete at least 30 or more credit hours in a three-semester (fall, spring, and summer) academic year
• Maintain consecutive enrollment each semester throughout the year, to include summer term
• Earn a satisfactory grade for pass/fail classes or a grade of C or higher for all graded classes;
• Declare or reaffirm a program of academic study
• Accumulate less than 90 college-level credits
• Complete a Free Application for Federal Student Aid (FAFSA) form at www.fafsa.gov

• Maintain a 2.0 or higher cumulative grade point average; and
• Sign a 30 Credit Hour Standard Program Agreement Form

Student Financial Aid

Student Financial Aid & Scholarships
Financial aid consisting of scholarships, grants, loans, and part-time student employment is designed to supplement a student’s own resources. Student financial aid may be available for an entire academic year or for part of the year.

Per federal and state regulations, primary considerations in selecting financial aid recipients are based on financial need, U.S. citizenship or eligible non-citizenship status, and the potential to succeed in an academic program at Tri-C. Some types of financial aid are based on criteria other than financial need.

Check out Financial Aid TV – a collection of video clips providing quick answers to common questions. This online service is available 24 hours a day, seven days a week at: http://tri-c.financialaidtv.com.

Application Procedures for Financial Aid
Students applying for financial aid are required to complete the Free Application for Federal Student Aid (FAFSA) form. Students can complete the FAFSA online at www.fafsa.gov. Students can obtain complete information about procedures and financial aid application process on the Student Financial Aid & Scholarships Office website at: www.tri-c.edu/financialassistance.

Students are strongly encouraged to complete the FAFSA and all required verification documentation at least eight weeks prior to the priority deadlines listed below:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Session</td>
<td>May 1</td>
</tr>
<tr>
<td>Fall Semester</td>
<td>July 1</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>December 1</td>
</tr>
</tbody>
</table>

Financial Aid Options

State Grant Program
Ohio College Opportunity Grants
Community college students who have received Pell grants, but may have exhausted all or part of the Pell within an academic year, may be eligible to the receive state grant aid, known as the Ohio College Opportunity Grant to enroll in the summer term from the Ohio Department of Higher Education. Additionally, students who qualify for the Ohio Education Training Voucher funded by the Orphan Foundation of America are also eligible for the state grant, based on financial need throughout the academic year.
Federal Programs

Pell Grants
The federal government makes Pell Grant funds available for tuition and other college-related expenses to undergraduate students who demonstrate financial need and maintain satisfactory academic progress in their course of study. Pell Grant recipients are eligible to receive awards from this program to complete their first undergraduate bachelor’s degree. Note that effective July 1, 2012, students are limited to 12 full-time semesters (24 equivalent part-time semesters) of Pell Grant eligibility. Students apply for Federal Pell Grants by completing the FAFSA. Beginning 2017-2018, Summer Pell is available for students who enroll in at least six (6) credits even if they have enrolled full-time Fall and Spring sessions.

Federal Supplemental Educational Opportunity Grants (FSEOG)
The FSEOG Program provides grants to students who demonstrate exceptional financial need to help meet their costs of post-secondary education. FSEOG recipients are eligible to receive awards from this program for the period required to complete their first undergraduate bachelor’s degree. Students apply for FSEOG funds by completing the FAFSA. Awards are contingent on availability of funds. Students who may be eligible for this program are encouraged to complete the FAFSA as early as possible each year to ensure full consideration.

Federal Direct Student Loan Program
These loans are also known as Stafford Loans. Students who apply for loans will be awarded either a subsidized or an unsubsidized loan based on financial need. Students must be enrolled in at least six credits and maintain satisfactory academic progress in their course of study. During the in-school period, all interest is paid by the federal government on subsidized loans. Interest on unsubsidized loans will accrue from the time the loan is disbursed to the student. Loan amounts are based on year in college and dependency status as established by the U.S. Department of Education. Repayment begins six months after the student leaves school or drops below 6 credits. Students must complete the FAFSA to be considered for the Direct Loan Program.

Parents may also choose to borrow a Parent Loan (PLUS) for students who are enrolled in at least six credits. Parent Loan applications are available in any Student Financial Aid & Scholarships Office and are awarded based on an approved credit check. Students are required to complete the FAFSA to apply for the PLUS Loan to ensure that the student has been considered for all types of aid programs.

Federal Work-Study Program (FWS)
This federal program provides funds for part-time student employment, up to 20 hours per week at Tri-C or at a community service agency. Students apply for FWS funds by completing the FAFSA. Awards are contingent on availability of funds and need. Students who may be eligible for this program are encouraged to complete the FAFSA as early as possible each year to ensure full consideration.

Scholarships
Cuyahoga Community College offers a variety of scholarship opportunities from numerous scholarship funds for Tri-C students enrolled in various disciplines. These scholarship opportunities have been created and supported through the generosity of many donors who believe in Tri-C’s mission and the importance of providing access to education to members of our community.

You can apply for Tri-C Scholarships by completing both the Free Application for Federal Student Aid (FAFSA) and the Tri-C Scholarship application. The online scholarship application is at www.tri-c.edu/scholarships and the FAFSA is online at www.fafsa.gov.

Some scholarships may require a special application in addition to the Tri-C Foundation Scholarship Application. These are noted in the criteria at www.tri-c.edu/scholarships.

The total scholarship award may not exceed the Cost of Attendance as determined by federal regulations and will be considered with all other financial aid you may receive.

Education Tax Credits

Lifetime Learning Credit
Taxpayers may be able to claim a lifetime learning credit of up to $2,000 for qualified education expenses paid for all students enrolled in eligible educational institutions. There is no limit on the number of years the Lifetime Learning Credit can be claimed for each student. However, a taxpayer cannot claim the American Opportunity Credit and Lifetime Learning Credit for the same student in one year. If you pay qualified education expenses for more than one student in the same year, you can choose to take credits on a per-student, per-year basis. For more information on the Lifetime Learning Credit, please contact the Internal Revenue Service or your tax preparer.

American Opportunity Credit
The American Opportunity Credit (AOTC) makes tax credit benefits available to a broader range of taxpayers, including many with higher incomes and those who owe no tax. In addition to direct educational
costs, the AOTC, also adds required course materials to the list of qualifying expenses and allows the credit to be claimed for four post-secondary education years with a maximum annual credit of $2,500 per student. For more information on the American Opportunity Credit, please contact the Internal Revenue Service or your tax preparer.
STUDENT INFORMATION

- Career Centers
- Counseling
- Cuyahoga Community College Foundation and Alumni Relations
- First Year Experience
- Student Accessibility Services (SAS)
- Student ID Card, My Tri-C Space, and E-mail
- Student Life
- Student Records
- Student Rights and Responsibilities
- Student Services
- Veterans Affairs

First Year Experience

Cuyahoga Community College is committed to helping students successfully complete degrees, certificates and transfer programs. The College demonstrates this commitment through the mandatory First Year Experience, designed to provide the support, information, tools and connections necessary for success. The First Year Experience includes three key components:

- New Student Orientation connects students to a counselor who helps them select the right courses, learn important steps for success and identify a major or program. New Student Orientation is offered through the Counseling Office at each campus.
- New Student Convocation officially welcomes new students to the College prior to the start of their first semester. Convocation has two major goals:
  1. To make certain that students understand the pace, rigor and expectations of the College and to provide advice on meeting these expectations; and
  2. To connect students to faculty and academic leadership in their major or program of study.
- First Year Success Seminar is a course offered during a new student’s first semester. Course goals include understanding key College processes and services; practicing academic success strategies such as time management and study skills; deepening connections to program faculty and staff; and creating an academic plan that leads directly to degree or credential completion.

Student ID Card, My Tri-C Space, and E-mail

My Tri-C Card Photo Identification

All Tri-C students are required to have a photo identification card (My Tri-C Card). Cards are obtained at the campus Enrollment Center upon registration. Government issued photo ID is required to obtain a My Tri-C card. Cards are required for registration activities, library checkout and admission to athletic, cultural and social events. Use of the My Tri-C Card also allows special discounts and incentives at all campus dining and retail operations including Java City, vending machines and the College bookstores. Tri-C authorities may ask to see an ID card at any time, therefore, it is important that it is always with you. Cards are non-transferable. There is a $10 charge to replace a My Tri-C Card.

my Tri-C space and Student Email

my Tri-C space is a portal that provides the primary point of access, a virtual “front door,” to resources students use on a regular basis. It includes links to registration, grades, financial aid, Blackboard, announcements, campus news, student activities and government websites. Information is personalized and organized by easily navigable headings. Each heading links to sub-headings that allow quick access to important information.

Tri-C issues each student an email account. It is accessible by logging in to my Tri-C space, selecting the Student heading and clicking on the Student Email icon. You can view your Tri-C email address and update your personal email address by going to the Student heading and selecting “Update My Personal Email.” Your Tri-C student email account is the official and primary communication method between Tri-C and students. Visit Tri-C student email information for additional information about student email.

Updating Student Information

Students are able to update personal information such as last name, address, phone number, email, emergency contact and academic major. Look for these options on the my Tri-C space Student tab.
Student Records

Access to Student Records
As part of its responsibility toward students, the College must maintain accurate and confidential student records. Tri-C recognizes the rights of students to have access to their educational records and to limit such access by others in accordance with the Family Educational Rights and Privacy Act (FERPA). These rights are documented in Tri-C’s procedure on student educational records.

Student records, with certain exceptions, will not be released without prior consent of the student. Students have the right to review and question the content of their educational records within a reasonable time after making a request for such a review. If there are any questions as to the accuracy or appropriateness of the records that cannot be resolved informally, an opportunity for a hearing on the matter is provided. Students wishing to review their educational records may apply to the appropriate Enrollment Center for details regarding Tri-C procedures designed to expedite their request.

Change of Address
Students are required to notify Tri-C of an address change. Updates can be made via my Tri-C space. A change of address does not automatically change residency status for the benefit of tuition charges. See the Residency Requirements section for information about changing residency status for tuition purposes.

Directory Information
Tri-C has designated the following information as directory information and will disclose this information without prior written consent unless otherwise instructed by the student: student name, address (local and home), program of study (including college of enrollment, major and campus), enrollment status (full time, part time, withdrawn), dates of attendance and degrees, honors and awards received. The following will be disclosed for members of athletic teams only: previous educational institutions attended, participation in officially recognized activities and sports, weight and height.

Students who wish to have this information kept confidential should contact the Enrollment Center.

Student Services

College Bookstores
College bookstores are located each of Tri-C’s four campuses to serve students, faculty and staff by providing required textbooks and supplies in a customer service-focused retail environment. For additional convenience, the bookstores also offer online textbook ordering through the external Tri-C website and my Tri-C space. Corporate College® West (CCW) hosts a satellite bookstore one week prior to the beginning of each CCW credit semester. Service for the Brunswick site is available at the Western Campus. The College bookstores carry a selection of general reading books, Tri-C apparel and gifts. Hours of operation are posted at each of the College bookstores and may vary during the course of a semester.

Campus Dining Facilities
Campus dining facilities at the Eastern, Metropolitan, and Western campuses offer assorted beverages and a wide variety of freshly prepared entrees including hot breakfast items, pizza, specialty and grilled sandwiches, salads, and desserts. Java City Specialty Coffee operations can be found at the Eastern, Metropolitan, and Western campuses. Hours of operation are posted at each operation and on the Campus Dining website page. The Westshore Campus features a convenience store within the College Bookstore which offers grab-and-go items and freshly brewed coffee. In addition, vending machines offering a variety of foods, snacks, and beverages are located at multiple sites throughout each campus, the Unified Technologies Center, and the Corporate Colleges. Use of the My Tri-C Card also allows special discounts and incentives at all campus dining retail operations, Java Cities, vending machines, and the College Bookstore. A Dining Dollars Meal Plan for use in the Campus dining facilities is available as part of the My Tri-C Card program.

For locations, current hours, and contact information go to http://www.tri-c.edu/student-life/campus-dining/.

Housing
Tri-C is a commuter institution primarily designed to serve residents of Cuyahoga County and, therefore, does not provide housing for students.

Campus Parking
No vehicle may be left on Tri-C property longer than 24 hours. Vehicles are subject to tow at the owner’s expense thereafter. If a vehicle must be left overnight, Campus Police and Security Services must be notified. Tri-C officially closes one hour after classes end. Citations may be paid by mail or in person at any Enrollment Center. Appeals may be made within 10 days of the notice of violation by either coming to the department of...
when hiring and a chance to learn more about the employer/industry
an internship, individuals will learn those skill-sets that employers value
on work experience in your field of study prior to graduating. By doing
Tri-C's Internship Program offers students the opportunity to gain hands-
Internships/Experiential Learning
Visit
www.tri-c.edu/careerservices
for quick answers to common questions. This online service is
available 24 hours a day, seven days a week at www.tri-c.edu/ask.

College Information & Enrollment Support Center
The College Information and Enrollment Support Center provides
convenient enrollment support services to Tri-C's new, continuing and
returning students. Customer service representatives provide prompt
responses to inquiries about College admission, class registration,
balances and information on Tri-C's academic and student services. The College Information and Enrollment Support Center also accepts
credit card payments toward registration and fees. Chat live with
a representative at www.tri-c.edu/CustomerService, via email at customerservice@tri-c.edu or call 216-987-6000 and press 0. Check out
ask TRI-C for quick answers to common questions. This online service is
available 24 hours a day, seven days a week at www.tri-c.edu/ask.

Career Centers
The Career Centers are committed to assisting students, veterans,
alumni and community members with making connections between their
academic experience and career paths. We provide career coaching,
resources and programs to assist individuals with clarifying academic
and career goals, developing a career plan, developing job search skills,
and making career transitions. Free services include, but not limited to
in-person and virtual career coaching, skills and interest assessments,
workshops, resume critiques and mock interviews.

The Career Centers partner with employers throughout Northeast Ohio
and alumni to optimize networking, job shadowing, internships, co-op's
and job opportunities while also creating strategic partnerships with
internal/campus departments.

The Career Centers are your resource for all experiential learning and
career-related needs.

Internships/Experiential Learning
Tri-C's Internship Program offers students the opportunity to gain hands-
on work experience in your field of study prior to graduating. By doing
an internship, individuals will learn those skill-sets that employers value
when hiring and a chance to learn more about the employer/industry
you're interested in. Often, an internship can directly lead to a full or part-
time job at your host company. In addition, students will be able to build
a network full of references from the company and individuals they work
with.

Tri-C internships are non-credit. To be eligible, students must meet the
following criteria:
- Must be a current Tri-C student studying for a degree or certificate in
  any discipline (excluding Health Care Programs)
- Have a minimum GPA of 2.0
- Have completed 12 credit hours
- Have completed at least two classes in your field of study

Internships may be paid or unpaid, and you will need to be able to work
a minimum of 100 hours per semester. In addition, attendance to Career
Center workshops are recommended.

For more information regarding internships, contact the Career Center at
866-933-5180 or visit www.tri-c.edu/careerservices.

Cooperative Education/Experiential Learning
The Cooperative Education (co-op) program supplements formal
classroom education with on-the-job experience in a variety of academic
disciplines, typically within the time frame of an academic semester.
Co-op assignments are at least 180 hours where students receive pay
for the work they do, earn academic credit for documented learning
derived from their experiences, and are evaluated by employers and
the co-op instructor. Students may earn a maximum of nine credits for
cooperative work experience, which may be applied toward certain degree
requirements.

To participate in the Cooperative Education work experience program, students must:
- Must be a current Tri-C student studying for a degree or certificate
- Have completed 12 or more credits of college-level coursework
  (transfer credits included)
- Have successfully completed at least two courses related to the
  major field or have equivalent experience (subject to the employer's
  requirements)
- Have a cumulative GPA of 2.75 or better
- Complete the co-op application and orientation process
- Complete three job readiness workshops (Resumes That Get Results,
  Ace That Interview and Classroom to Career: Workplace Skills for
  Success)
- Complete and sign an experiential learning agreement
- Enroll in the designated co-op course sections by the start date

For more information regarding the Cooperative Education Program, contact the Career Center at 866-933-5180 or visit www.tri-c.edu/
careerservices.
Counseling

The mission of the Counseling Department is to provide accessible counseling and advising services for current, former, and prospective students. Professional counselors at each of the campuses can assist students in:

- Clarifying academic and career goals.
- Mapping program of study and complementary experiences.
- Developing strategies to build on strengths and to overcome barriers.
- Accessing available collegiate and community resources to support reaching these goals.

Academic, career, and personal concerns are addressed as appropriate and needed. Direct student services are provided through individual counseling, general studies courses, and student success workshops. The Counseling Department also conducts the orientation program for new students. Students are encouraged to meet with a counselor on a regular basis to facilitate progress from initial matriculation through program completion and graduation.

For more information, please visit www.tri-c.edu/counseling-center/

Student Accessibility Services (SAS)

The Student Accessibility Services (SAS) Program provides classroom accommodations and support for Tri-C students with disabilities. Students must make an appointment to meet with an SAS Student Advisor and present documentation of disability to receive services. Some services may require eight weeks or more to arrange. Services are individualized and may include advising, test proctoring, books in alternate format, assistive technology and sign language interpreting. The SAS Program is funded by the U.S. Department of Education, the State of Ohio and Tri-C. For more information, visit www.tri-c.edu/access or call the SAS office on your campus:

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</thead>
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<td>216-987-2052</td>
<td>216-223-6181</td>
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<td>(Sorenson VRS)</td>
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<td>Metropolitan</td>
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</tr>
<tr>
<td>Westshore</td>
<td>216-987-3900</td>
<td>216-987-5117</td>
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</tbody>
</table>

Student Life

Tri-C recognizes the educational, recreational, and social values of a well-integrated program of student activities.

Student Life, Athletics, and Recreation provides diverse programs and services to enhance the overall social, cultural, and educational growth of students by promoting learning and development outside of the classroom. The programs are designed to promote maximum interaction among students and between students, faculty, and staff. Tri-C programs are developed to offer a diverse co-curricular experience and in response to student requests and needs. Activities offered may vary each semester depending upon scheduling, availability, and student feedback. For detailed information on Student Life, Athletics, and Recreation offerings visit our webpage.

Activities, Clubs, and Organizations

Every student is welcome to participate in a variety of activities ranging from student government, diversity programming, student clubs and organizations, co-curricular programming, leadership development, and recreation activities. Students can participate in co-curricular activities including student leadership certification, etiquette training, planning lectures, dramas, entertainment, and various educational programs. Student organizations cover a wide spectrum of interests to meet the needs of students. Further information may be obtained from the Student Life Office on each campus.

Intercollegiate Athletics

Tri-C is a member of the National Junior College Athletic Association (NJCAA) and participates with other two-year colleges from Ohio, Indiana, and Michigan.

The official colors of Tri-C’s athletic programs are teal, white and black. The College mascot is the Triceratops. Intercollegiate sports offered are: men’s soccer, women’s volleyball, women’s cross country, women’s indoor and outdoor track & field, men’s baseball, women’s softball, men’s basketball, and women’s basketball. Visit www.tri-c.edu/athletics/ for more information.

Phi Theta Kappa

Phi Theta Kappa is the international honor society for students in community colleges. The purpose of Phi Theta Kappa is to recognize...
and encourage scholarship among two-year college students. To achieve this purpose, it provides opportunities for the development of leadership and service, an intellectual climate for exchange of ideas and ideals, lively fellowship for scholars, and stimulation of interest in continuing academic excellence.

Phi Theta Kappa’s mission is two-fold:

1. recognize and encourage the academic achievement of two-year college students; and
2. provide opportunities for individual growth and development through participation in honors, leadership, service, and fellowship programming.

Society membership opens opportunities for competitive national and regional scholarships, including more than $37 million in transfer scholarships available at over 700 four-year colleges and universities. Visit www.ptk.org and http://ohio-region.ptk.org for more information.

Tri-C has four chapters: Alpha Epsilon Eta (Eastern), Alpha Zeta Delta (Metropolitan), Chi Omega (Western) and Beta Upsilon Beta (Westshore). Students are invited to join the society based on completion of at least 12 credits at the 1000-2000 level with a cumulative GPA of 3.5 or better. A one-time membership fee helps to support chapter activities as well as the regional and national organizations.

Interested students should contact the faculty advisor at their respective campus; contact information can be found on the Tri-C Phi Theta Kappa website: www.tri-c.edu/ptk.

Recreation Facilities

Tri-C is committed to providing students, faculty and staff with quality athletics and recreation programs. Tri-C offers athletics and recreation designed to develop an understanding and appreciation of physical fitness and improve the students’ recreational and athletic skills.

The Eastern Campus indoor facilities include a gymnasium, swimming pool, exercise room, weight room, locker rooms and shower facilities, dance studio, and a newly resurfaced indoor track. Outdoor facilities include an all-weather track and an open field. Visit www.tri-c.edu/community/community-recreation/east-campus-recreation for more information.

The Metropolitan Campus indoor facilities include a fitness center, gymnasium, swimming pool, weight training room, dance studio, and locker and shower facilities. There is classroom space available for wellness group instruction, workshops, and seminars on the lower level. Visit www.tri-c.edu/community/community-recreation/metro-campus-recreation for more information.

The Western Campus indoor facilities include a fitness center, gymnasium, swimming pool, and locker and shower facilities. Outdoor facilities provided are an all-weather track, soccer fields, lighted baseball field, and softball field. Visit www.tri-c.edu/community/community-recreation/west-campus-recreation for more information.

Cuyahoga Community College Foundation and Alumni Relations

The mission of the Cuyahoga Community College (Tri-C®) Foundation is to provide resources for advancing student success at Cuyahoga Community College and to transform the lives of those Tri-C serves.

Tri-C is a beacon of hope for Cleveland. With the continued support of business partners, corporations, organizations, friends and alumni, the Tri-C Foundation provides critical scholarship support to outstanding students with financial need, along with funding for program development and enhancement to ensure educational excellence. During the 2017-2018 academic year, a record total of $3.2 million in scholarships awards were made to more than 2,800 Tri-C students.

The Tri-C Foundation has established three strategic priorities to advance futures and transform the region:

Student Experience: Improve attainment by increasing program funding to drive student success.

Workforce including health care, IT and manufacturing: Ensure more students have the resources to enter and succeed in workforce training programs that lead to in-demand jobs in our region.

Affordability: increase access and reduce costs for students through scholarship support and cost efficiencies.

There is no more important organization than Tri-C to uplift individuals and create economic growth for Northeast Ohio. An investment in the Tri-C Foundation is an investment in our students and an investment in our region.

For more information, or to make a contribution to the Tri-C Foundation, contact the Office of Resource Development and Tri-C Foundation at 216-987-4868 or visit www.tri-c.edu/give.

The Office of Resource Development and the Tri-C Foundation is pleased to lead Tri-C’s Alumni Initiative. Alumni are valued members of our College family, contributing to a vibrant community. They include professionals across the region, the country, and the world, representing all ages and every sector of the economy, as well as the cultural diversity of our region. The mission of Alumni Relations is to cultivate lifelong meaningful connections between Cuyahoga Community College and its alumni by connecting alumni with each other, with their alma mater and with current students to foster Tri-C pride.
Services and benefits available to Cuyahoga Community College alumni include:

- Alumni website: http://www.tri-c.edu/alumni/index.html
- Discounts and benefits for goods and services, available at: http://www.tri-c.edu/alumni/discounts-and-benefits.html
- Job search, career resources and professional networking opportunities
- E-newsletter sharing news including professional achievements of alumni, College information and special discount offers.

To engage in our Tri-C Alumni Family, contact Alumni Relations at 216-987-4868, via email at alumnirelations@tri-c.edu, visit www.tri-c.edu/alumni or join our Facebook group at https://www.facebook.com/groups/TriCalumni/.

**Veterans Affairs**

Since 1963, Tri-C has provided veterans of the U.S. Armed Forces with access to affordable education and workforce training programs that allow them to transition successfully from military to civilian life. To date, more than 30,000 veterans and service members have attended Tri-C. The population of veterans in Northeast Ohio who are seeking higher education and workforce training is increasing. An estimated 1,000 service members and 500 reservists from the region are on active duty. Approximately 1,500 veterans have returned to Northeast Ohio over the past two years and approximately 3,000 veterans will return over the next four years. Of that number, 600 are currently enrolled in courses at Tri-C.

Like other area schools, Tri-C stands ready to meet the needs of veterans through high quality, traditional educational opportunities leading to associate degrees, which often result in upward movement for many graduates to four-year degree programs.

Tri-C veteran services and programs are distinguished from other area college veteran programs because:

- Tri-C offers veterans wishing to quickly transition back to the workforce a variety of fast-track certification and degree programs that align with Northeast Ohio workforce needs (e.g., manufacturing and applied technologies, skilled trades training and health care).
- Tri-C’s Veterans Education Access Program (VEAP) has a 45+ year history of providing support services to eligible veterans not yet ready for college to complete preparatory coursework, develop academic skills and remain enrolled in and graduate from post secondary education.
- Tri-C is committed to professional development that enables Tri-C faculty, staff and administrators to address veteran transition issues.
- Tri-C is committed to serving the families of veterans. During 2017-2018, Tri-C hosted eight major events for military families.

Family support and outreach is critical because it is often a family member who helps a veteran decide to return to school.

Through Tri-C’s Veterans Initiative and its Veteran Services & Programs Office, Tri-C continues its commitment to enhance outreach to veterans and their families and to customize support services to serve those who have served so proudly. Education and support services include:

- Benefits acquisition (GI Bill ®)
- Veterans Education Access Program
- Veterans Today Club
- Registration and enrollment support
- Assessment and counseling
- Special classroom needs (ACCESS)
- Occupational career programs
- Baccalaureate transfer/liberal arts curriculum
- Bachelor’s degree completion
- Post-degree professional certificates
- Apprenticeship programs/Applied Industrial Technology
- Career planning
- Scholarship opportunities
- Student Life outreach and activities
- Distance learning/eLearning opportunities
- Access to community resources
- Access to employment opportunities

Whether a discharged veteran, still serving on active duty or a member of the Guard and Reserve, you and your family are welcomed home at Tri-C. Visit www.tri-c.edu/veterans for more information.

**Military/Veterans Attendance & Participation**

The following is Cuyahoga Community College policy, developed in accordance with the U. S. Veterans Administration (VA) – Education Policy Manual Section 103, PL 115-407, regarding student veteran status while awaiting VA Tuition and Fee Payments. Those effected are those student veterans using CH 33 of the GI Bill (Post 9-11 GI Bill), or CH 31 (Vocational Rehabilitation benefit).

The College will NOT:

- Penalize the student while waiting for VA to make tuition and fee payments
- Deny a student access to classrooms, libraries or other institutional facilities
- Make the student borrow money to cover the cost while waiting for payment
- Charge a student a late fee or penalty

The period of coverage begins when the student provides the school with a COE or a Statement of Benefit:

- The College can require the student to submit the Certificate of Eligibility (COE) or Statement of Benefits no later than the first day of the program.
- The College can also require the student submit a written request to use benefits or other necessary certifications.
Veterans Education Access Program (VEAP)

VEAP provides a variety of support services to assist veteran students in the successful pursuit and completion of their educational and career goals. VEAP offers an academic enrichment program featuring refresher courses in math, science, English and basic computer skills. Five nine-week sessions are offered per year as well as a six-week accelerated summer bridge program. Other services include academic and financial aid advising; career and personal counseling; tutoring; Veterans Affairs benefits information; college transfer assistance; scholarship opportunities; peer mentoring; and a veterans club. All services are free to eligible participants at the Eastern, Metropolitan and Western campuses. DD-214 and income verification are required to apply. Call 216-987-4938 or visit VUB at www.tri-c.edu/veap.

Student Rights and Responsibilities

For a comprehensive list of all Cuyahoga Community College (Tri-C®) procedures, please refer to the Student Handbook at www.tri-c.edu/student-resources/student-handbook.html. The handbook is also accessible on my Tri-C space by clicking the Tri-C Life tab and going to the College Policies channel.

Student Conduct Code

The Student Conduct Code supports Tri-C’s mission, fosters students’ scholarly and civic development in a safe and secure learning environment and protects the people, property and processes that support the College. The Student Conduct Code identifies prohibited conduct and clarifies when the code applies to student behavior. The Student Conduct Code is closely related to the Student Judicial System procedure, which sets forth the penalties imposed for prohibited conduct and establishes the disciplinary process for alleged violations.

The Student Conduct Code and Student Judicial System are included in the Student Handbook referenced in the Student Rights and Responsibilities section above.

Attendance

Regular class attendance is expected from all Tri-C students. The College is required by law to verify the enrollment of students who participate in federal Title IV student aid programs and/or receive educational benefits through other funding sources. Eligibility for federal student financial aid is based in part on enrollment status.

Students who do not attend classes are responsible for withdrawing from the course(s). Additionally, students who withdraw from a course or stop attending class without officially withdrawing may be required to return all or a portion of the financial aid based on the date of last attendance.

Tri-C is responsible for identifying students who have not attended a course before financial aid funds can be applied to their accounts. Therefore, attendance will be recorded in the following ways:

- For in-person and blended-learning courses, students are required to attend the course by the 15th day of the semester (or equivalent for terms shorter than 5 weeks) to be considered attending. Students who have not met all attendance requirements for in-person and blended courses, as described herein, within the first two weeks (or equivalent) will be considered not attending.
- For online courses, students are required to login in at least two times per week and submit one assignment per week for the first two weeks of the semester, or equivalent to the 15th day of the term. Students who have not met all attendance requirements for online courses, as described herein, within the first two weeks (or equivalent) will be considered not attending.

At the conclusion of the first two weeks of a semester (or equivalent), instructors report any registered students who have “Never Attended” a course. Those students will be administratively withdrawn from that course. However, after the time period in the previous paragraphs, if a student stops attending a class or wants/needs to withdraw for any reason, it is the student’s responsibility to take action to withdraw from the course. Students may withdraw from courses online through my Tri-C space or submit the appropriate Tri-C form to the Enrollment Center by the established withdrawal deadline. Refer to my Tri-C space for withdrawal/ refund information.

Tri-C is required to ensure that students receive financial aid only for courses that they attend and complete. Students reported for not attending at least one of their registered courses will have all financial aid funds held until confirmation of attendance in registered courses is verified. Students who fail to complete at least one course may be required to repay all or a portion of their federal financial aid funds and may be ineligible to receive future federal financial aid awards. Students who withdraw from courses prior to completing more than 60 percent of their enrolled class time may be subject to the required federal refund policy.

If illness or emergency should necessitate a brief absence from class, students should confer with instructors upon their return. Students having problems with coursework because of a prolonged absence should confer with the instructor or a counselor.

Emergencies, Catastrophic Events and Severe Weather Closings

Tri-C is committed to providing students with the maximum number of scheduled instructional days possible. In the instance of an emergency, catastrophic event, or severe weather conditions, Tri-C initiates a procedure to determine if classes can continue as scheduled.

Three criteria determine if classes will be held:

1. the municipalities and State Department of Transportation can confirm prior to 6 a.m. that the main roads and highways will be accessible;
2. local governments and/or Homeland Security alert status;
3. Campus Plant Operations can confirm that all buildings have heat, water, sufficient parking areas, and clear access routes to campus buildings.

If these three criteria can be fulfilled, classes will be held. Emergency closing announcements will be broadcast over local television and radio stations and their websites. The Tri-C website and my Tri-C space will also announce closing information. Closing announcements will also be distributed as a Tri-C Alert, with a phone call or text message to the Alert number provided by employees and students. This message will always come from 1-866-989-ALRT(2578). In order to receive a call or text, you must have provided an updated Alert number in your personal information. Look for this option on the My Info channel located on the Student tab of my Tri-C space. Note: **Anyone who has opted out of the Tri-C Alert system will not receive notification from the college.**

**Student Right-to-Know and Campus Security Act**

Tri-C complies with all federal regulations concerning the Student Right-to-Know and Campus Security Act. For specific information contact your Campus Police and Security Services office or visit the Campus Police website at: [http://www.tri-c.edu/administrative-departments/campus-police/](http://www.tri-c.edu/administrative-departments/campus-police/).
Transfer Information

- Transferring Credits
- Articulation Agreements
- Ohio Transfer Module
- Transfer Assurance Guides
- Career-Technical Transfer Assurance Guides
- Military Transfer Assurance Guides

Transferring Credits

The Bachelor's Degree

Associate of Arts (AA) and Associate of Science (AS) degrees are designed to prepare students for transfer to a four-year institution to continue their education at the bachelor's degree level. General Education and pre-major courses offered by Tri-C for transfer purposes are designed to parallel those courses that comprise the equivalent of the first two years of study leading to the bachelor's degree at a four-year college or university. Learn more (p. 25) about AA and AS degrees.

In some career-technical programs in Tri-C’s Associate of Applied Business (AAB) and Associate of Applied Science (AAS) curricula, an option enables students to earn an associate degree in the program at Tri-C and then transfer to a four-year institution to work toward a bachelor’s degree in the designated technical field or other programs. Some credits earned at Tri-C in an AAB or AAS degree are transferable toward a four-year degree only at cooperating four-year colleges and universities or those where articulation agreements exist. Students should consult with both a Tri-C counselor and an advisor at the receiving institution regarding this.

It is the responsibility of the student to become acquainted with and follow the requirements for the transfer of courses. Students are strongly encouraged to complete an associate degree prior to transfer as there are numerous benefits such as additional scholarship opportunities, upper class standing, and an increased likelihood of completing a bachelor's degree. Counselors are available to assist with academic planning and Transfer Center specialists are able to discuss pre-transfer planning.

Students intending to transfer take General Education courses, usually from the Ohio Transfer Module (OTM), and lower division major-related courses, usually from Transfer Assurance Guides (TAGs), during their freshman and sophomore years at Tri-C. OTM and TAG courses are part of the Ohio Transfer to Degree Guarantee and, as such, are guaranteed to transfer to any public college or university in Ohio. After transferring, students will specialize in a major at the receiving institution during their junior and senior years. Learn more (p. 73) about the OTM. Learn more (p. 77) about TAGs. Learn more about the Ohio Transfer to Degree Guarantee.

Articulation Agreements and Transfer Pathways

University Partnerships and Articulation Agreements have been established by Tri-C with many of Ohio's public colleges and universities, a number of Ohio’s private institutions, and with other institutions across the country. Most of the Articulation Agreements provide seamless transfer pathways that have been approved by both institutions for the completion of the associate and bachelor's degrees or for an opportunity for Dual Admission (Learn more about Dual Admission). Some of the agreements offer completion of a bachelor's degree at a Tri-C location or online. Students are encouraged to check Articulation Agreements periodically for newly added partnerships, agreements, and transfer pathways as they are updated throughout the year. These program-specific legal agreements offer transfer opportunities for students and enable them to take advantage of benefits associated with the agreements such as significant financial savings, upper class standing, additional scholarship opportunities, and/or the ability to take classes at both institutions concurrently. Learn more about Articulation Agreements.

In cases where an Articulation Agreement has not been established, Tri-C Associate of Arts and Associate of Science “Area of Emphasis” course guides are available for some areas. These guides have been developed for a variety of intended bachelor’s degree majors and are customizable for different student needs and transfer plans. Students should meet with a counselor at Tri-C and with an advisor at the intended transfer institution for assistance in determining the appropriate courses for that institution. Please note, if an Articulation Agreement and/or transfer pathway exists for a student’s intended transfer school and program, it should be used rather than using an “Area of Emphasis” course guide, which is not specific to any institution.

For the most successful transfer experience, it is recommended that students consult with a Tri-C Counselor for academic planning and assistance, a Tri-C Transfer Center Specialist for pre-transfer planning, and an advisor from the intended transfer school for that institution’s requirements and procedures. Students are encouraged to start their transfer planning early to save time and money. Learn more about Tri-C Counseling. Learn more about Tri-C Transfer Centers.

Ohio Transfer To Degree Guarantee

Advanced Placement (AP): High school students who have taken an AP course and the associated AP exam may be eligible, based on their AP exam score, for guaranteed college credit upon entering an Ohio public college or university. The awarded credit is usually applied toward General Education curriculum. Learn more about AP and how your score may be applied from the Ohio Department of Higher Education.

Apprenticeship Pathway Programs: The Apprenticeship Pathways Initiative advocates for individuals completing apprenticeships to incorporate their learning into academic credit, saving them time and money and encouraging them to advance their academic credentials.

Ohio apprenticeship programs partner with Ohio public two-year institutions of higher education to provide technology-specific statewide articulation agreements that recognize non-traditional prior learning. College credit awarded through an Apprenticeship Pathway Program applies toward an applied associate degree. Each articulation agreement
simplifies student advising by outlining how apprenticeship training in a certain pathway applies to an applied associate degree and lists the remaining courses required to complete the degree. The application of credit toward an applied associate degree is guaranteed at the participating receiving institutions. Learn more about Apprenticeship Pathway Programs.

Career Technical Assurance Guides (CTAGs): CTAGs provide recognition of learning to students who have completed approved adult or secondary (high school) career-technical coursework. CTAGs help these students enter college with articulated college-level credit. In order to receive credit, students must complete Verification Form 1 and may need to provide additional information. Time limits and conditions for awarding CTAG credit vary by technical area. See a Tri-C counselor to discuss details. Learn more about CTAG courses from the Ohio Department of Higher Education. Learn more (p. 81) about Tri-C’s approved CTAG courses.

College Level Examination Program (CLEP): Students who are interested in earning college credit for subject area knowledge and skills acquired through prior learning should consider taking a CLEP exam. Learn more about available exams. Learn more about how your score applies at Tri-C. Learn more about taking a CLEP exam at a Tri-C location.

Military Transfer Assurance Guides (MTAGs): MTAGs guarantee that certain types of military training, experience, and/or coursework align to existing college and university courses, thus granting students appropriate credit. MTAGs work best for students who have either a Joint Services Transcript or a Community College of the Air Force transcript. See a Tri-C counselor to review your military transcript for potential MTAG credit. Learn more about MTAG courses from the Ohio Department of Higher Education.

Ohio Articulation and Transfer Policy: The State of Ohio, through the leadership of the Ohio Department of Higher Education, has established a coherent statewide policy intended to facilitate a student’s ability to seamlessly complete their highest level of educational goal achievement within Ohio's post-secondary educational system. To that end, the Ohio Articulation and Transfer Policy was developed to facilitate the transfer of students and credits from any state college or university to another. It encourages faculty recognition of comparable and compatible learning experiences and expectations across institutions. It also encourages students to complete units of educational experience as they progress (i.e. Ohio Transfer Module, Transfer Assurance Guides, associate and bachelor’s degrees). Learn more about the Ohio Articulation and Transfer Policy.

Ohio Articulation Number (OAN): When a course at an Ohio public institution of higher education is approved by a statewide faculty panel for a particular assurance guide, it is assigned an Ohio Articulation Number (OAN). These discipline-specific courses or course sequences meet established learning outcome standards. This common statewide OAN is assigned to each approved course in addition to its unique institutional course number or designation. This signifies, in part, that the course is guaranteed to apply as an equivalent course or courses bearing the same OAN offered at other Ohio public institutions of higher education. Students are assured of these courses’ equivalency at any Ohio public institution of higher education that has the same OAN approval for the same time period during which the student took the course at another Ohio public institution of higher education. Assurance applies not only to the equivalency of the course, but to its application to the degree objective. Courses within the Ohio Transfer Module (OTM) may also be part of a Transfer Assurance Guide (TAG). In this case, the course has both an OTM OAN (beginning with “TM”) and a TAG OAN (beginning with “O”)

Ohio Guaranteed Transfer Pathways (OGTPs): OGTPs help students streamline credit transfer among Ohio’s public institutions of higher education and find pathways to degree completion. OGTPs serve as advising tools by identifying courses that are part of the Ohio Department of Higher Education's statewide transfer guarantees. OGTPs are designed to provide a clear path to associate degree completion followed by transfer to an Ohio public university for bachelor's degree completion. Tri-C’s articulation agreements with many of Ohio’s public colleges and universities, a number of Ohio’s private institutions, and with other institutions across the country also provide students with transfer pathways for both associate and bachelor’s degree completion. Learn more about Ohio Department of Higher Education’s OGTPs. Learn more about Tri-C’s articulation agreements.

Ohio Transfer Module (OTM): The OTM consists of General Education course requirements guaranteed to transfer among all Ohio public institutions of higher education. Students who intend to transfer to a state four-year institution to pursue a bachelor’s degree after completing a Tri-C associate degree should select their General Education courses from Tri-C’s approved OTM courses. For course selection assistance, see a Tri-C counselor. An OTM course may also be a Transfer Assurance Guide (TAG) course. Learn more about OTM courses from the Ohio Department of Higher Education. Learn more (p. 73) about Tri-C’s approved OTM courses.

One Year Option (OYO): The OYO builds upon Ohio’s existing articulation and transfer processes to help students achieve strong post-secondary foundations and futures. The OYO allows students who have earned specified credentials from an Ohio technical center in a 600+ clock-hour pathway approved by the Chancellor of the Ohio Department of Higher Education to receive up to 30 college-level technical credit hours. The 30 semester credit hours are awarded as a block of credit rather than as credit for specific courses. The credit is awarded toward an Associate of Technical Studies degree after successfully enrolling at Tri-C or another Ohio public college or university. Learn more about the OYO.

Transfer Assurance Guides (TAGs): TAG courses are lower division courses that are part of an academic major. Students who intend to transfer to a state four-year institution to pursue a bachelor’s degree after completing a Tri-C associate degree should choose appropriate Tri-C approved TAG courses for their intended bachelor’s degree program. For course selection assistance, see a Tri-C counselor. Learn more about TAG courses from the Ohio Department of Higher Education. Learn more (p. 77) about Tri-C’s approved TAG courses.

Conditions for Transfer Admission
1. Graduates with associate degrees from Ohio’s public institutions of higher education and a completed, approved Ohio Transfer Module shall be admitted to a public institution of higher education in Ohio, provided their cumulative grade-point average is at least 2.0 for all previous college-level courses. Further, these students shall have admission priority over graduates with an out-of-state associate degree and other transfer students with transferable and/or articulated college credit.

2. Associate degree holders who have not completed the Ohio Transfer Module from an Ohio public institution of higher education will be eligible for preferential consideration for admission as transfer students as long as the institution’s admission criteria, such as the minimum academic standards, space availability, adherence to
deadlines, and payment of fees, are fairly and equally applied to all undergraduate students.

3. In order to encourage completion of the baccalaureate degree, students who are not enrolled in or who have not earned an degree but have earned 60 semester/90 quarter hours or more of credit toward a baccalaureate degree with a cumulative grade-point average of at least a 2.0 for all previous college-level courses will be eligible for preferential consideration for admission as transfer students as long as the institution's admission criteria, such as the minimum academic standards, space availability, adherence to deadlines, and payment of fees, are fairly and equally applied to all undergraduate students.

4. Students who have not earned an associate degree or who have not earned 60 semester/90 quarter hours of credit with a grade-point average of at least 2.0 for all previous college-level courses will be eligible for admission as transfer students on a competitive basis.

5. Incoming transfer students admitted to a college or university shall compete for admission to selective programs, majors, and units on an equal basis with students native to the receiving institution.

The admission of transfer students by an institution, however, does not guarantee admission to any majors, minors, or fields of concentration at the institution. Some programs have additional academic and non-academic requirements beyond those for general admission to the institution (e.g., background check, a grade-point average higher than a 2.0, or a grade-point average higher than the average required for admission to the institution). Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as native students. Furthermore, transfer students shall be accorded the same class standing and other privileges as native students on the basis of the number of credits earned. All residency requirements must be completed at the receiving institution.

Responsibilities of Students
To maximize transfer credit application, prospective transfer students must take responsibility for planning their course of study to meet both the academic and non-academic requirements of the institution to which they desire to articulate or transfer credit as early as possible. The student is responsible to investigate and use the information, advising, and other available resources to develop such a plan. Students should actively seek program, degree, and transfer information; meet with an advisor from both the current and receiving institutions to assist them in preparing a course of study that meets the academic requirements for the program/degree to which they plan to transfer; use the various electronic course/program transfer and applicability database systems, including Ohio Transfer to Degree Guarantee web resources; and select courses/programs at their current institution that satisfy requirements at the receiving institution to maximize the application of transfer credit. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are foreign language requirements or any special course requirements that can be met during the freshman or sophomore year. This will enable students to plan and pursue a course of study that will better articulate with the receiving institution’s major.

Appeals Process
Following the evaluation of a student transcript from another institution, the receiving college institution will provide the student with a Statement of Transfer and Articulated Credit Applicability (Degree Audit Report). A student disagreeing with the application of transfer and/or articulated credit by the receiving institution must file his/her appeal in writing within ninety (90) days of receipt of the Statement of Transfer and Articulated Credit Applicability. The institution shall respond to the appeal within thirty (30) days of the receipt of the appeal at each appeal level.

Student Complaints Following Transfer Appeals at the Receiving Institution
If student exhausts the appeals process at the receiving institution and chooses to pursue further action, the Ohio Department of Higher Education (ODHE) responds to formal written complaints related to the Ohio Articulation and Transfer Policy against public, independent non-profit, and proprietary institutions of higher education in Ohio. While the ODHE has limited authority over colleges and universities and cannot offer legal advice or initiate civil court cases, staff will review written complaints submitted through its established process and work with student complainants and institutions.

Degree and Credit Transfer
Students who plan to transfer to a four-year college or university have several transfer options and should meet with a counselor to discuss which is best for them.

Associate Degree Preferred
Students are strongly encouraged to complete an associate degree prior to transfer as there are numerous benefits such as additional scholarship opportunities, upper class standing, and an increased likelihood of completing a bachelor’s degree. Additionally, many articulation agreements with four-year institutions are designed to benefit students who complete an associate degree. If the student completes the degree requirements within the parameters of the Ohio Transfer Module (OTM) requirements, 36 to 40 semester credits will transfer automatically, and the remaining credits up to the 60 that make up the degree will be evaluated for transfer on a course-by-course basis unless an articulation agreement is in place. Students who complete the OTM and an associate degree are guaranteed admission to any Ohio public university.

Course-by-Course Transfer
Students who do not complete the OTM or an associate degree can plan a transfer program with a Tri-C Counselor on a course-by-course basis. The receiving school evaluates the transferability and applicability of credit for each course taken, which requires the student to select a receiving school well in advance and enroll in appropriate courses with the assistance of a Tri-C Counselor and especially a representative from the receiving school.

Although this provides no advance assurance of transferability as provided in the OTM or associate degree completion, it does provide the flexibility to select course work tailored to meet specific program admission requirements, if this is important to the student. Successful transfer of courses using this method requires careful planning and course selection with the assistance of a Tri-C Counselor. This method gives the student the option of taking only those Tri-C courses that will be accepted at the program level at the receiving school, avoiding the problem of taking the same course twice (once at Tri-C to meet general transfer requirements and again at the receiving school to meet a program admission transfer requirement). The following guidelines are the recommended process students should follow to transfer the maximum number of credits using the individual course evaluation method:

1. Identify the institution and the major to which credit will be transferred
2. Refer to the receiving institution’s current Catalog
3. Review the program admission requirements for the intended major
4. Schedule a consultation with a Tri-C Counselor to review the program requirements and identify their equivalents in the Tri-C curriculum
5. Consult with the appropriate representative at the receiving school to resolve any questions about transferability and applicability at the admission, general education, and/or program level
6. Complete all the specific courses and sequences that the Tri-C Counselor designates as meeting the program requirements for the school where credits will be transferred
7. After completing college course work at Tri-C, complete a request for a transcript of grades and have it sent to the admission office at the receiving institution - consult with the admission office about other details necessary to complete this step. Learn more about requesting a Tri-C transcript of grades

**Ohio Transfer Module**

The OTM represents a subset of courses from among the general education requirements of the Associate of Arts (AA), Associate of Science (AS) and bachelor’s degrees at many institutions. Applied degree students may complete some individual OTM courses within their degree program or continue beyond the degree program to complete the entire OTM. Transfer students with an earned AA or AS degree which contains an identifiable OTM will have met the OTM requirements of the receiving institution. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. The application of transfer work to general education requirements which go beyond those contained in the OTM will be done on a course-by-course basis. Individual courses that are part of an approved OTM are guaranteed to transfer among public institutions of higher education on a course-by-course basis. Students will receive credit for successfully completed courses from the OTM without completing the entire module. Learn more about the OTM and/or see Tri-C’s approved courses below.

**Ohio Articulation Number (OAN)**

Learn more (p. 70) about OANs (select Ohio Transfer to Degree Guarantee on the landing page).

Courses within the Ohio Transfer Module (OTM) may also be part of an approved Transfer Assurance Guide (TAG). OANs are listed below for courses that are also part of an approved TAG and begin with ”O”.

**English Composition**

Minimum of three semester hours with an emphasis on written composition.

Cuyahoga Community College (Tri-C®) is committed to offering students opportunities for access, affordability, success, and completion through University Partnerships and Articulation Agreements that have been established by Tri-C with many of Ohio’s public colleges and universities, a number of Ohio’s private institutions, and with other institutions across the country. Most of these Articulation Agreements provide seamless transfer pathways that have been approved by both institutions for the completion of the associate and bachelor’s degrees or provide an opportunity for Dual Admission (learn more about Dual Admission). Some of the agreements offer completion of a bachelor’s degree at a Tri-C location or online. Students are encouraged to check Articulation Agreements periodically for newly added partnerships, agreements, and transfer pathways as they are updated throughout the year. Articulation Agreements are program-specific legal agreements that offer transfer opportunities for students and enable them to take advantage of benefits associated with them such as significant financial savings, upper class standing, additional scholarship opportunities, and/or the ability to take classes at both institutions concurrently. Learn more about Articulation Agreements.
### Transfer Information - Cuyahoga Community College 2019-2020 Catalog

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<th>Course Title</th>
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### Oral Communication

All courses listed are OAN approved as TMCOM for Ohio Transfer Module.

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<tr>
<td>COMM-101H</td>
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### Mathematics, Statistics and Logic

Minimum of three semester hours.

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<tr>
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<th>Course Title</th>
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### Arts and Humanities

Minimum of six semester hours; select from at least two areas. All courses listed are OAN approved as TMAH for Ohio Transfer Module.

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PHIL-2031 3 Cr.
PHIL-2040 3 Cr.
PHIL-2050 3 Cr.
   or
PHIL-205H 3 Cr.
REL-1010 3 Cr.
REL-2010 3 Cr.
REL-2020 3 Cr.
REL-2060 3 Cr.
THEA-1010 3 Cr.
THEA-1100 3 Cr.
THEA-2210 3 Cr.
THEA-2220 3 Cr.

Social and Behavioral Sciences
Minimum of six semester hours; select from at least two areas. All courses listed are OAN approved as TMSBS for Ohio Transfer Module.

ANTH-1010 OSS001 3 Cr.
ANTH-1020 3 Cr.
ANTH-2110 OSS003 3 Cr.
ECON-1210 3 Cr.
ECON-1220 3 Cr.
GEOG-1010 OSS008 3 Cr.
GEOG-1030 3 Cr.
GEOG-1050 3 Cr.
GEOG-1510 3 Cr.
HIST-1010 OHS041 3 Cr.
   or
HIST-101H 3 Cr.
HIST-1010 & HIST-1020 OSS009 3 Cr. & 3 Cr.
   or
HIST-101H & HIST-102H OSS009 3 Cr. & 3 Cr.
HIST-1020 OHS042 3 Cr.
   or
HIST-102H 3 Cr.
HIST-1510 OHS043 3 Cr.
   or
HIST-151H 3 Cr.
HIST-1510 & HIST-1520 OHS010 3 Cr. & 3 Cr.
   or
HIST-151H & HIST-152H OHS010 3 Cr. & 3 Cr.
HIST-1520 OHS044 3 Cr.
   or
HIST-152H 3 Cr.
HIST-1630 3 Cr.
HIST-1700 3 Cr.
HIST-2070 3 Cr.
HIST-2150 3 Cr.
HIST-2160 3 Cr.
HIST-2660 3 Cr.
POL-1010 OSS011 3 Cr.
   or
POL-101H 3 Cr.
POL-1020 OSS014 3 Cr.
POL-2030 OSS013 3 Cr.
POL-2060 3 Cr.
POL-2070 OSS012 3 Cr.
POL-2100 3 Cr.
PSY-1010 OSS015 3 Cr.
   or
PSY-101H 3 Cr.
PSY-1050 3 Cr.
PSY-2010 OSS045 3 Cr.
PSY-2020 OSS048 4 Cr.
PSY-2040 OSS016 3 Cr.
PSY-2050 OSS018 3 Cr.
PSY-2060 OSS046 3 Cr.
PSY-2080 OSS017 3 Cr.
PSY-2100 OSS047 3 Cr.
PSY-2110 OED008 3 Cr.
SOC-1010 OSS021 3 Cr.
   or
SOC-101H 3 Cr.
SOC-1020 3 Cr.
SOC-2010 OSS025 3 Cr.
   or
SOC-201H 3 Cr.
SOC-2020 OSS023 3 Cr.
SOC-2100 3 Cr.
SOC-2110 3 Cr.
SOC-2310 3 Cr.
SOC-2510 3 Cr.
SOC-2550 OSS050 3 Cr.
UST-1010 3 Cr.
UST-1020 3 Cr.
UST-2020 3 Cr.
UST-2070 3 Cr.
UST-2640 3 Cr.
WST-1510 3 Cr.
WST-2010 3 Cr.

Natural Sciences
Minimum of six semester hours; one of the courses must be a lab course. All courses listed are OAN approved as TMNS for Ohio Transfer Module.

ANTH-1210 OSS002 4 Cr.
BIO-1040 & BIO-104L 3 Cr. & 1 Cr.
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<td>4 Cr.</td>
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<td>OSC024</td>
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<td>OSC016</td>
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<td>OSC022 (Includes blended lab sections for PHYS 2320, excludes fully online lab sections for PHYS 2320)</td>
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Transfer Assurance Guides

Transfer Assurance Guides (TAGs)
TAGs comprise Ohio Transfer Module courses and additional courses (called TAG courses) that are required for an academic major. A TAG is an advising tool to assist Ohio university and community and technical college students in planning for specific majors and making course selections that are comparable and compatible, and offer equivalent learning experiences across Ohio’s public higher education system. A number of area-specific TAG pathways in meta-majors including the arts, humanities, business, communication, education, health, mathematics, sciences, engineering, engineering technologies, social sciences, and foreign languages have been developed by faculty panels comprised of subject area experts from across Ohio’s public institutions of higher education.

TAGs enable students to make informed course selection decisions and plans for their future transfer of coursework. Advisors at the institution to which a student wishes to transfer should be consulted during the transfer process. Because of specific major requirements, early identification of the intended major is encouraged. Learn more about TAGs and/or see Tri-C’s approved TAG courses below. Learn more about TAG definitions and pathways, including specific program area pathways. Learn more about TAG pre-requisites that are listed in the TAG on the ODHE website under OTM requirements, but may not be listed in the tables below.

Ohio Articulation Number
Learn more (p. 70) about OANs (select Ohio Transfer to Degree Guarantee on the landing page).

Courses that are part of an approved Transfer Assurance Guide (TAG) may also be part of the Ohio Transfer Module (OTM). OANs are listed below for courses that are also part of the OTM and begin with "TM".

Arts and Humanities

Art History TAG
ART-2020 & ART-2030  TMAH & OAH005  3 Cr. & 3 Cr.
Select 6 hrs. of Fine Arts Electives:

English TAG
ENG-2310  TMAH & OAH053  3 Cr.
ENG-2320  TMAH & OAH054  3 Cr.
ENG-2350  TMAH & OAH055  3 Cr.
ENG-2360  TMAH & OAH056  3 Cr.

Studio/Fine Arts TAG
ART-1050  OAH001  3 Cr.
ART-1070  OAH059  3 Cr.
ART-1081  OAH058  3 Cr.
Select 3-6 hrs. of Fine Arts Electives:
ART-1100  OAH047  3 Cr.
or
ART-1700  OAH050  3 Cr.
or
ART-2000  OAH051  3 Cr.
or
ART-2050  OAH048  3 Cr.
or
ART-2210  OAH049  3 Cr.
or
VCPH-1261  OAH002  3 Cr.

Music TAG
MUS-1250 & MUS-1260  OAH019  2 Cr. & 2 Cr.
MUS-1460  OAH020  2 Cr.
or
MUS-1470  2 Cr.
or
MUS-2460  2 Cr.
or
MUS-2470  2 Cr.
MUS-1510  OAH022  1 Cr.
or
MUS-1530  1 Cr.
or
MUS-1550  1 Cr.
### Philosophy TAG

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<td>TMAH &amp; OAH045</td>
<td>3 Cr.</td>
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<td>PHIL-101H</td>
<td>3 Cr.</td>
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<tr>
<td>PHIL-2020</td>
<td>TMAH &amp; OAH046</td>
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### Theatre TAG

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<td>OAH028</td>
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<td>THEA-1500</td>
<td>OAH027</td>
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<td>THEA-1540</td>
<td>OAH025</td>
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<td>THEA-1550</td>
<td>OAH026</td>
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<td>THEA-2010</td>
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### Business TAG

#### Business TAG

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<td>OBU005</td>
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<td>or</td>
<td>BADM-201H</td>
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<td>MARK-2010</td>
<td>OBU006</td>
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<tr>
<td>MATH-1490 &amp; MATH-1500</td>
<td>TMMSL (both courses individually) &amp; OBU009 (both courses must be taken)</td>
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### Communication TAG

#### Communication studies tag

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<td>COMM-1210</td>
<td>OCM003</td>
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<td>COMM-2000</td>
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### Journalism TAG

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### Public Relations/Advertising TAG

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### Telecommunication TAG

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### Education TAG

#### Early Childhood Education TAG

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#### Education TAG

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<td>EDUC-1411</td>
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<td>PSY-2110</td>
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### Engineering & Engineering Technology

#### Aerospace, Agriculture, Civil, Mechanical Engineering TAG

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<td>OES002</td>
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#### Bioengineering, Biomedical Engineering TAG

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### Computer, Electrical Engineering TAG

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**Electrical Engineering Technology TAG**

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**Industrial Engineering TAG**

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**Fire Science**

**Fire Science TAG**

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**Foreign Language**

**Foreign Language TAG**

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<td>4 Cr. &amp; 4 Cr.</td>
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<td>ASL-2010 &amp; ASL-2020</td>
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<td>4 Cr. &amp; 4 Cr.</td>
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<td>FREN-1010</td>
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<td>4 Cr. &amp; 4 Cr.</td>
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<td>SPAN-1011 &amp; SPAN-1021</td>
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<td>4 Cr. &amp; 4 Cr.</td>
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<td>SPAN-1021</td>
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<td>4 Cr.</td>
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<tr>
<td>SPAN-2010</td>
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<td>3 Cr.</td>
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<tr>
<td>SPAN-2010 &amp; SPAN-2020</td>
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<td>SPAN-2020</td>
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**Health**

**Dietetics TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>DIET-1200</td>
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**Health Information Management TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO-2600</td>
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</tr>
<tr>
<td>HIM-1311</td>
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<td>3 Cr.</td>
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<tr>
<td>HIM-2430</td>
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<td>2 Cr.</td>
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<td>MA-1020</td>
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</table>

**Medical Laboratory Science TAG**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MLT-1000</td>
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<tr>
<td>MLT-1491</td>
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<td>3 Cr.</td>
</tr>
<tr>
<td>MLT-2461</td>
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<td>3 Cr.</td>
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**History**

**History TAG**

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<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>HIST-1010</td>
<td>TMSBS &amp; OHS041</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-1010H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-1010 &amp; HIST-1020</td>
<td></td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
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<tr>
<td>HIST-1010 &amp; HIST-102H</td>
<td></td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
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<tr>
<td>HIST-101H</td>
<td></td>
<td>3 Cr.</td>
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<tr>
<td>or</td>
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<tr>
<td>HIST-1010 &amp; HIST-1020</td>
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<td>3 Cr. &amp; 3 Cr.</td>
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<td>HIST-101H &amp; HIST-102H</td>
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<td>HIST-101H &amp; HIST-102H</td>
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<tr>
<td>HIST-101H and HIST-1020</td>
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<td>3 Cr. &amp; 3 Cr.</td>
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<td>HIST-1020</td>
<td>TMSBS &amp; OHS042</td>
<td>3 Cr.</td>
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<tr>
<td>HIST-102H</td>
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<td>3 Cr.</td>
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<tr>
<td>HIST-1510</td>
<td>TMSBS &amp; OHS043</td>
<td>3 Cr.</td>
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<td>or</td>
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<tr>
<td>HIST-151H</td>
<td></td>
<td>3 Cr.</td>
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<tr>
<td>or</td>
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<tr>
<td>HIST-1510 &amp; HIST-1520</td>
<td></td>
<td>3 Cr. &amp; 3 Cr.</td>
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<tr>
<td>HIST-1510 &amp; HIST-152H</td>
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<td>3 Cr. &amp; 3 Cr.</td>
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<tr>
<td>HIST-151H &amp; HIST-152H</td>
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<td>3 Cr. &amp; 3 Cr.</td>
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<td>HIST-151H &amp; HIST-1520</td>
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<td>3 Cr. &amp; 3 Cr.</td>
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<tr>
<td>HIST-1520</td>
<td>TMSBS &amp; OHS044</td>
<td>3 Cr.</td>
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<tr>
<td>HIST-152H</td>
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<td>3 Cr.</td>
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**Science and Mathematics**

**Biology TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO-1500</td>
<td>TMNS &amp; OSC003</td>
<td>4 Cr.</td>
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<td>or</td>
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<tr>
<td>BIO-150H</td>
<td></td>
<td>4 Cr.</td>
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<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1500 &amp; BIO-1510</td>
<td></td>
<td>4 Cr. &amp; 4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
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<tr>
<td>Course Code</td>
<td>Credits</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>BIO-150H &amp; BIO-1510</td>
<td>4 Cr. &amp; 4 Cr.</td>
<td></td>
</tr>
<tr>
<td>CHEM-2300 &amp; CHEM-2310</td>
<td>5 Cr. &amp; 5 Cr.</td>
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<tr>
<td>PHYS-1210</td>
<td>4 Cr.</td>
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<tr>
<td>PHYS-2310</td>
<td>5 Cr.</td>
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### Chemistry TAG

**For BS Majors**
- CHEM-1300 & CHEM-130L: OSC008 4 Cr. & 1 Cr.
- or
- CHEM-130H 5 Cr.
- CHEM-1310 & CHEM-131L: OSC009 4 Cr. & 1 Cr.
- or
- CHEM-131H 5 Cr.
- CHEM-1300 & CHEM-130L & CHEM-1310 & CHEM-131L: OSC023 4 Cr. & 1 Cr. & 4 Cr. & 1 Cr.
- or
- CHEM-1300 & CHEM-130L & CHEM-131H 4 Cr. & 1 Cr. & 5 Cr.
- or
- CHEM-130H & CHEM-1310 & CHEM-131L 5 Cr. & 4 Cr. & 1 Cr.

**For BA Majors**
- CHEM-1300 & CHEM-130L: OSC008 4 Cr. & 1 Cr.
- or
- CHEM-130H 5 Cr.
- CHEM-1310 & CHEM-131L: OSC009 4 Cr. & 1 Cr.
- or
- CHEM-131H 5 Cr.
- CHEM-2300 & CHEM-2310: OSC010 5 Cr. & 5 Cr.
- PHYS-2310 | 5 Cr. |
- and |
- PHYS-2320 | 5 Cr. |
- or
- PHYS-2310 & PHYS-2320 | 5 Cr. & 5 Cr. |

### Geology TAG
- ESCI-1410 & ESCI-141L: TMNS & OSC025 3 Cr. & 1 Cr.
- or
- ESCI-141H & ESCI-141L 3 Cr. & 1 Cr.

### Mathematics TAG
- MATH-2310: TMM018 & OMT018 4 Cr.
- or
- MATH-231H 4 Cr.
- MATH-2410: TMM019 & OMT019 3 Cr.
- MATH-2520: TMM020 & OMT020 3 Cr.

### Physics TAG
- MATH-2310: TMM018 & OMT018 4 Cr.
- or
- MATH-231H 4 Cr.
- MATH-2410: TMM019 & OMT019 3 Cr.
- MATH-2520: TMM020 & OMT020 3 Cr.

### Social Sciences

#### Anthropology TAG
- ANTH-1010: TMSBS & OSS001 3 Cr.
- ANTH-1210: TMSBS & OSS002 4 Cr.
- ANTH-2110: TMSBS & OSS003 3 Cr.

#### Criminal Justice TAG
- CJ-1000: OSS031 3 Cr.
- CJ-1070: OSS033 3 Cr.
Geography TAG
ESCI-1310 & ESCI-131L TMNS & OSS006 3 Cr. & 3 Cr.
GEOG-1000 OSS007 3 Cr.
GEOG-1010 TMBS & OSS008 3 Cr.
GEOG-1740 OSS051 3 Cr.
or
CNST-1740 3 Cr.

Political Science TAG
POL-1010 TMBS & OSS011 3 Cr.
or
POL-101H 3 Cr.
POL-1020 TMBS & OSS014 3 Cr.
POL-2030 TMBS & OSS013 3 Cr.
POL-2070 TMBS & OSS012 3 Cr.

Psychology TAG
PSY-1010 TMBS & OSS015 3 Cr.
or
PSY-101H 3 Cr.
Select three of the four content areas within the TAG.

PSY-2040 TMBS & OSS016 (Area 3 Cr. 1)
PSY-2050 TMBS & OSS018 (Area 3 Cr. 3)
PSY-2080 TMBS & OSS017 (Area 3 Cr. 2)

Courses can only be transferred to comparable courses within the same age span. Age Spans are Childhood (OSS045), Adolescence (OSS046), Adulthood and Aging (OSS047), Lifespan (OSS048), and Child and Adolescence (OSS049).

PSY-2010 TMBS & OSS045 (Area 3 Cr. 4)
or
PSY-201H OSS045 (Area 4) 3 Cr.
PSY-2020 TMBS & OSS048 (Area 4 Cr. 4)
or
PSY-202H OSS048 (Area 4) 4 Cr.
PSY-2060 TMBS & OSS046 (Area 3 Cr. 4)
PSY-2100 TMBS & OSS047 (Area 3 Cr. 4)

Social Work TAG
SOC-1010 TMBS & OSS021 3 Cr.
or
SOC-101H 3 Cr.
SOC-2051 OSS030 3 Cr.
PSY-1010 TMBS & OSS015 3 Cr.
or
PSY-101H 3 Cr.

Sociology TAG
SOC-1010 TMBS & OSS021 3 Cr.
or
SOC-101H 3 Cr.
SOC-2010 TMBS & OSS025 3 Cr.
or
SOC-201H 3 Cr.
SOC-2020 TMBS & OSS023 3 Cr.
SOC-2550 TMBS & OSS050 3 Cr.

Career-Technical Transfer Assurance Guides

Career-Technical Transfer Assurance Guides (CTAGs)
CTAGs are statewide (Ohio) articulation agreements that guarantee recognition of learning that occurred at an Ohio public adult or secondary (high school) career-technical institution and may be awarded college credit. These discipline-specific articulation agreements ensure that students who completed coursework at these types of institutions can articulate, transfer, and be awarded college credit for agreed upon technical courses and/or programs at any Ohio public institution of higher education without unnecessary duplication or institutional barriers.

Career-Technical Articulation Number (CTAN)
A CTAN consists of learning outcomes representing knowledge and skills in a technical area that are needed to transition from Ohio public career-technical education to an Ohio public institution of higher education. Learning outcomes are based on recognized industry standards in the technical area and are established by faculty panels comprised of subject area experts from across Ohio’s public institutions of higher education. Each CTAN in the technical area is assigned an identifying number. Learn more about CTAGs/CTANs and/or see Tri-C’s approved courses below.
Administrative and Professional Support

CTAPS001  BT-2990  3 Cr.
Office Procedures

Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete the ODE secondary course Office Management (142005) and earn a qualifying score of 54 or higher on the corresponding End of Course examination.
Automotive Technology

CTAUT005  AUTO-1101  3 Cr.
Introduction to Automotive Service and Repair

Student Requirements for Secondary Students: Student must matriculate to an institution of higher education with an approved or comparable program within 2 years after completing the approved secondary program. Student must successfully complete the Ohio Department of Education (ODE) secondary course Ground Transportation Maintenance (177000). Student must pass the ASE/NATEF Student Certification Examination for Maintenance and Light Repair (MLR) or Automobile Service and Technology (AST) and seek credit within two years from the date the examination was taken.

Student Requirements for Adult Career-Technical Students: Student must successfully complete a NATEF accredited program at a (CT)2 approved Ohio adult career-technical institution. Student must pass the ASE/NATEF Student Certification Examination for Maintenance and Light Repair (MLR) or Automobile Service and Technology (AST) and seek credit within two years from the date the examination was taken.*

Maintenance and Light Repair (G1) certification are also eligible to receive credit for this CTAN.

Clinical/Medical Laboratory Technology

CTMLT001  MLT-1000  3 Cr.
Introduction to Medical (Clinical) Laboratory Science

Student Requirements: Student must pass the Ohio Department of Education (ODE) Clinical Laboratory Techniques course (072100).

Construction

CTCON001  CNST-1731  3 Cr.
Plan Reading

Student Requirements: Student must matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program. Student must successfully complete the Ohio Department of Education (ODE) secondary course Plan Reading (178019) and receive a qualifying/passing score on the End of Course examination of 64 or higher.

*Adult Career-Technical Students who possess a current ASE
CTCON002  
Construction Safety  

Student Requirements:  
Student must matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program. Student must successfully complete the Ohio Department of Education (ODE) secondary course Construction Safety (178018) and earn a qualifying score on the corresponding End of Course examination (where applicable). Student must have a valid OSHA 30 hour card in Construction.

CTCON003  
Construction Methods and Materials  

Student Requirements:  
Student must matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program. Student must successfully complete the Ohio Department of Education (ODE) secondary course Carpentry and Masonry Technical Skills (178001) and receive a qualifying/passing score on the End of Course examination of 75 or higher.

CNST-1750  3 Cr.

CNST-2131  3 Cr.

Criminal Justice  
CTCJ001  
CJ-1000  3 Cr.

Introduction to Criminal Justice  

Student Requirements:  
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete all three required Ohio Department of Education (ODE) courses and receive a qualifying score on the End of Course examinations:  
Course 1: The American Criminal Justice System (170911), qualifying score of 47 or higher  
Course 2: Police Work and Practice in Public Safety (170913), qualifying score of 56 or higher  
Course 3: The Correctional System and Services (170915), qualifying score of 60 or higher
Early Childhood Education
CTECE003    ECED-2500    3 Cr.
Infant and Toddler Curriculum

Student Requirements:
Student must access credit within 3 years of program completion.
Student must successfully complete Ohio Department of Education (ODE) secondary course Infant and Toddler Education (50210) through an approved secondary program and earn a score of 57 or higher on the End of Course examination.

Education
CTEDU007    EDUC-1011    3 Cr.
Introduction to Education

Student Requirements:
Student must provide proof of completion of an approved Secondary Tech Prep Teaching Professions Pathway Program and proof of an 85 on the Tech Prep Education Portfolio. Student must enroll in a post-secondary institution within two years of program completion.

Electrical Engineering Technology
CTEET001    EET-1161    3 Cr.
DC Circuits

Student Requirements for Secondary
Students: Student must successfully complete Ohio Department of Education (ODE) course DC and AC Electronic Circuits (175011) or Engineering Principles (175002), and in some cases, Robotics* (Course 175004) from an approved high school program.

*If a program selects Robotics (175004) for Programmable Logic Controls, a different course must be selected for DC Circuits; optimal alignment is to DC and AC Electronic Circuits (175011) or Engineering Principles (175002). A program will not be approved for, nor will a receiving institution award credit for both the DC Circuits and Programmable Logic Controls CTANs if a secondary program completes only the ODE course in Robotics (175004).

Student Requirements for Adult Career-Technical Students:
Student must successfully complete an approved Electronics (CT)2 program at an Ohio Technical Center. Student must complete the requirement for Algebra at the matriculating institution. Students from (CT)2 approved institutions may not receive credit for DC Circuits until this prerequisite is satisfied.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTEET002</td>
<td>Digital Fundamentals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements for Secondary Students: Student must successfully complete Ohio Department of Education (ODE) course Digital Electronics (175007) from an approved high school program.</td>
<td></td>
</tr>
<tr>
<td>CTEET003</td>
<td>Programmable Logic Controls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements for Secondary Students: Student must successfully complete Robotics (175004) from an approved secondary career-technical institution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements for Adult Career-Technical Students: Student must successfully complete an approved (CT)2 program at an Ohio Technical Center.</td>
<td></td>
</tr>
<tr>
<td>EET-1241</td>
<td>3 Cr.</td>
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<td>EET-2520</td>
<td>3 Cr.</td>
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<tr>
<td>CTEFF003</td>
<td>Fire Fighter II</td>
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<tr>
<td></td>
<td>Fire Fighter I and II Certifications or Ohio Fire Fighter II Certification.</td>
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</tr>
<tr>
<td>FIRE-1100 &amp; FIRE-1200</td>
<td>3 Cr. &amp; 2 Cr. &amp; 2 Cr.</td>
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<tr>
<td>FIRE-1500 &amp; FIRE-2321 &amp; EMT-1320</td>
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**Health Information Management**

<table>
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<th>Course Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CTHIM001</td>
<td>Introduction to Health Information Management</td>
<td></td>
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<tr>
<td></td>
<td>In order to access post-secondary college credit for this CTAN, the student must matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program. Student must successfully complete ODE course Health Information Technology (072135) and earn a qualifying score of 62 or higher on the end of course exam.</td>
<td></td>
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<tr>
<td>HIM-1301</td>
<td>3 Cr.</td>
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<tr>
<td>CTHIM002</td>
<td>Legal and Ethical Aspects of Health Information Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary student must be from an approved institution, and must provide evidence of passing all secondary requirements on the official verification form and transcripts. Ohio Department of Education (ODE) Course 072140 is aligned to this CTAN.</td>
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</tr>
<tr>
<td>HIM-1311</td>
<td>3 Cr.</td>
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**Emergency Medical Services**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTEMS002</td>
<td>Emergency Medical Technician (EMT)</td>
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</tr>
<tr>
<td></td>
<td>Student Requirements: Student must hold a current Ohio EMT Certification</td>
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<tr>
<td>EMT-1302 &amp; EMT-130L</td>
<td>6 Cr. &amp; 1 Cr.</td>
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<tr>
<td>CTEMS004</td>
<td>Paramedic</td>
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<tr>
<td></td>
<td>Student Requirements: Student must hold a current Ohio Paramedic Certification</td>
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<tr>
<td>EMT-1310 &amp; EMT-2330 &amp; EMT-2340 &amp; EMT-2350 &amp; EMT-2360 &amp; EMT-2370</td>
<td>1 Cr. &amp; 6 Cr. &amp; 6 Cr. &amp; 6 Cr. &amp; 6 Cr. &amp; 5 Cr.</td>
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**Fire Fighter**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTFF002</td>
<td>Fire Fighter I</td>
<td></td>
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<tr>
<td></td>
<td>Student must hold current and valid Ohio Fire Fighter I Certification; Required NIMS 100 and 700</td>
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<tr>
<td>FIRE-1100 &amp; FIRE-1200 &amp; FIRE-1500</td>
<td>3 Cr. &amp; 2 Cr. &amp; 2 Cr.</td>
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</table>
Horticulture

CTHOR002 PST-1420 3 Cr.
Landscape Maintenance

Student Requirements:
In order to access post-secondary college credit for this CTAN, the student must matriculate to an institution of higher educations with a comparable course NO LATER than 3 years after completing the approved secondary program. Student must successfully complete ODE course Landscape Hardscapes (010640) and earn a score of 56 or higher on the end of course exam.

CTHOR003 PST-1411 2 Cr.
Equipment Operation and Maintenance

Student Requirements:
In order to access post-secondary college credit for this CTAN, the student must matriculate to an institution of higher educations with a comparable course NO LATER than 3 years after completing the approved secondary program. Student must successfully complete ODE course Landscape Systems Management (010615) and earn a score of 64 or higher on the end of course exam.

Hospitality, Tourism, and Culinary Arts

CTCF001 HOSP-1020 2 Cr.
Sanitation and Safety

Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within the currency of the credential after completing the approved program. Student must hold a current ServSafe® Manager Certification offered through the National Restaurant Association (NRA).

CTCF002 HOSP-1010 2 Cr.
Introduction to Hospitality & Tourism

Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years of completing the approved program. Student must successfully complete the Ohio Department of Education (ODE) course Hospitality Fundamentals (330000) from an approved program.
Information Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CTIT002</td>
<td>Network+</td>
<td></td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Cisco Exploration I</td>
<td>3 Cr.</td>
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</table>

**Student Requirements:**
- Target: Matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program.
- Successfully complete secondary courses below and earn a qualifying score on the corresponding End of Course examination(s):
  - Course 1: Networking (145035), qualifying score of 67 or higher, AND
  - Course 2: Network Management (145045) qualifying score of 56 or higher
- OR, the student must hold the current CompTIA Network+ certification, Cisco Certified Network Associate (CCNA) certification, Cisco Certified Entry Networking Technician (CCENT) certification
- OR, the student must have passed Cisco I and II semester tests (proctored and closed book test environment)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>EET-1302</td>
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<tr>
<td>Course Code</td>
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<td>Credits</td>
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<tr>
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<tr>
<td>CTIT008</td>
<td>Cisco Exploration II</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>EET-1312</td>
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Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete the CISCO™ course and pass applicable semester tests (proctored and closed book test environment) in Cisco II curriculum (official CISCO™ End of Course exam).
OR, student must hold current CompTIA Network+ certificate.
OR, student must hold current Cisco certification (Cisco Certified Network Associate (CCNA) certificate).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CTIT009</td>
<td>Cisco Exploration III</td>
<td>3 Cr.</td>
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<tr>
<td>EET-2302</td>
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Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete the CISCO™ course and pass applicable semester tests (proctored and closed book test environment) in Cisco III curriculum (official CISCO™ End of Course exam).
OR, student must hold current Cisco certification (Cisco Certified Network Associate (CCNA) certificate).

<table>
<thead>
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<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>CTIT010</td>
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<td>3 Cr.</td>
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<tr>
<td>EET-2312</td>
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Student Requirements:
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete the CISCO™ course and pass applicable semester tests (proctored and closed book test environment) in Cisco IV curriculum (official CISCO™ End of Course exam).
OR, student must hold current Cisco certification (Cisco Certified Network Associate (CCNA) certificate).
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTIT013</td>
<td>Windows Server 2003</td>
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</tr>
<tr>
<td></td>
<td>Student Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must matriculate to an</td>
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</tr>
<tr>
<td></td>
<td>institution of higher education with</td>
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<tr>
<td></td>
<td>an approved or comparable program</td>
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<tr>
<td></td>
<td>within 3 years after completing the</td>
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<tr>
<td></td>
<td>approved secondary program. Student</td>
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</tr>
<tr>
<td></td>
<td>must successfully complete the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ohio Department of Education (ODE)</td>
<td></td>
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<tr>
<td></td>
<td>secondary course Network Operating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systems (145040) and receive a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>qualifying/passing score of 64 or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>higher on the “End of Course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>examination OR, the student must hold</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the current Microsoft Server Certification</td>
<td></td>
</tr>
<tr>
<td>ITNT-2320</td>
<td>3 Cr.</td>
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</table>

**Mechanical Engineering Technology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTMET004</td>
<td>Manufacturing Processes</td>
<td></td>
</tr>
<tr>
<td>MET-1240</td>
<td>3 Cr.</td>
<td></td>
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<tr>
<td>CTMET005</td>
<td>CADD</td>
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<td>MET-2041</td>
<td>3 Cr.</td>
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</table>

**Media Arts**

<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTMDA003</td>
<td>Introduction to Single Camera Video</td>
<td></td>
</tr>
<tr>
<td>MARS-1180</td>
<td>Production</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must matriculate to an</td>
<td></td>
</tr>
<tr>
<td></td>
<td>institution of higher education with</td>
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</tr>
<tr>
<td></td>
<td>an approved or comparable program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within 3 years after completing the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approved secondary program. Student</td>
<td></td>
</tr>
<tr>
<td></td>
<td>must successfully complete the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ohio Department of Education (ODE)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>secondary course Video Production (340145) and earn a qualifying score on the corresponding End of Course examination of 59 or higher.</td>
<td></td>
</tr>
<tr>
<td>MA-1503 &amp;</td>
<td>2 Cr. &amp; 1 Cr.</td>
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<tr>
<td>MA-150L</td>
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</table>

**Medical Assisting Technology**

<table>
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<tr>
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<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CTMAT004 &amp;</td>
<td>Basic Administrative Medical Assisting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Functions &amp; Bookkeeping Functions</td>
<td></td>
</tr>
<tr>
<td>MA-1503 &amp;</td>
<td>2 Cr. &amp; 1 Cr.</td>
<td></td>
</tr>
<tr>
<td>MA-150L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must provide proof to receiving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>institution that: (1) she/he holds the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CMA-AAMA or RMA-AMT credential and that</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) she/he has completed a medical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>assisting program approved by the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ohio Department of Education (ODE)</td>
<td></td>
</tr>
</tbody>
</table>
CTMAT006
Insurance Claims
Student Requirements:
Student must provide proof to receiving institution that: (1) she/he holds the CMA-AAMA or RMA-AMT credential and that (2) she/he has completed a medical assisting program approved by the Ohio Department of Education (ODE)

CTMAT008
Fundamental Procedures
Student Requirements:
Student must provide proof to receiving institution that: (1) she/he holds the CMA-AAMA or RMA-AMT credential and that (2) she/he has completed a medical assisting program approved by the Ohio Department of Education (ODE)

CTMAT009
Specimen Collection
Student Requirements:
Student must provide proof to receiving institution that: (1) she/he holds the CMA-AAMA or RMA-AMT credential and that (2) she/he has completed a medical assisting program approved by the Ohio Department of Education (ODE)

CTMAT010
Diagnostic Testing
Student Requirements:
Student must provide proof to receiving institution that: (1) she/he holds the CMA-AAMA or RMA-AMT credential and that (2) she/he has completed a medical assisting program approved by the Ohio Department of Education (ODE)

CTMAT011
Patient Care
Student Requirements:
Student must provide proof to receiving institution that: (1) she/he holds the CMA-AAMA or RMA-AMT credential and that (2) she/he has completed a medical assisting program approved by the Ohio Department of Education (ODE)

Medical Terminology
CTMT001
Medical Terminology
Student Requirements:
Students must pass the Ohio Department of Education (ODE) Medical Terminology course (072150).

Nursing – Practical Nursing to Associate Degree
CTPNUR001
Practical Nursing Program
Students completing Tri-C's Licensed Practical Nurse (LPN) program are guaranteed to receive 30% of the technical credit in a public Associate Degree Registered Nursing (RN) program. The receiving institution determines the specific courses eligible to receive transfer credit.

CTPADNUR002
Student Requirements:
LPN and successful completion of Ohio Nursing Articulation Model (ONAM) transition course.
Performing Arts

**CTPAT001**  
Stagecraft

**Student Requirements:**
Student must matriculate to an institution of higher education with an approved or comparable program within 3 years after completing the approved secondary program. Student must successfully complete the Ohio Department of Education (ODE) secondary course Stagecraft (340250) and earn a qualifying score on the corresponding End of Course examination of 66 or higher.

**Pharmacy Technician**

**CTPT001**  
Introduction to Pharmacy Technician

**Student requirements:**
A Pharmacy program must contain 350 clock hours of instruction. This course must provide at least 75 clock hours. To be eligible for credit, student must hold the Pharmacy Technician Certification Board (PTCB) credential.

**CTPT002**  
Pharmacy Concepts

**Student requirements:**
A Pharmacy program must contain 350 clock hours of instruction. This course must provide at least 75 clock hours. To be eligible for credit, student must hold the Pharmacy Technician Certification Board (PTCB) credential.

**THEA-1430**  
3 Cr.

**MA-1010 & PHM-1300**  
2 Cr. & 3 Cr.

**PHM-2080 & PHM-2701**  
1 Cr. & 4 Cr.

**PHM-2860**  
3 Cr.

**CTPT003**  
Pharmacy Laboratory/ Clinical Experience

**Student Requirements:**
A Pharmacy program must contain 350 clock hours of instruction. This course must provide at least 225 clock hours of psychomotor experiences. To be eligible for credit, student must hold the Pharmacy Technician Certification Board (PTCB) credential.

**Police Officer Training**

**CTBPO001**  
Basic Police Officer

**Student Requirements:**
**HLTH-1230 & CJ-1300**  
1 Cr. & 4 Cr.  & 3 Cr. & 3 & 2 Cr. & 2 Cr. & 1 Cr.

& **CJ-1310 & CJ-2370 &**  
& **CJ-2380 & PE-1000 &**  
& **CJ-1300 &**  
& **PE-1190**

**Military Transfer Assurance Guides**
Military Transfer Assurance Guides (MTAGs)

Military Training/Experience Credit Transfer

In response to the Ohio legislative requirement to create a military articulation and transfer assurance guide for college-level learning that took place through military training, experience, and/or coursework (Ohio Revised Code 3333.164), Tri-C will grant college credit to students with military training, experience, and/or coursework that is recognized by the American Council on Education (ACE) or a regionally accredited military institution, such as Community College of the Air Force.

The Ohio Department of Higher Education Articulation and Transfer Network has and continues to develop MTAGs to streamline and systematize the awarding of credit for military training, experience, and/or coursework. MTAGs identify specific courses that are part of the statewide transfer guarantee for military training, experience, and/or coursework. In order to streamline the awarding, transferability, and applicability of college credit, service members and veterans are guaranteed to earn certain types of credit(s) or course(s) as specified in the MTAGs, which are based on the baseline standards and procedures of Ohio Revised Code 3333.164 and endorsed by the Chancellor of the Ohio Department of Higher Education. Equivalent courses, credits, or blocks of credit are to be awarded and applied towards general education and/or major course requirements at the receiving institution in accordance with the MTAG guarantee. Please note, there is some military training, experience, and/or coursework for which the receiving institution may be able to award college credit towards general or free electives only. In addition, Ohio public institutions of higher education shall ensure that appropriate equivalent credit is awarded for military training, experience, and/or coursework that meets the baseline standards and procedures according to Ohio Revised Code 3333.164. This requirement goes beyond credit/courses awarded based on the MTAG alignment process.

Military Transfer Assurance Guides

The MTAGs serve as advising tools, identifying the course(s) or program(s) that are part of the statewide guarantee. MTAGs include the military course number, title, and version/rating as appropriate to the various levels of training and experience offered within the military, as well as the ACE approved course number. Each MTAG is assigned a corresponding Ohio Articulation Number (OAN) from the standard Transfer Assurance Guide (TAG) tables, which indicates the course(s) and credit hours students will be awarded for the completed military training, experience, and/or coursework. Learn more (p. 70) about OANs (select Ohio Transfer to Degree Guarantee on the landing page). Learn more about MTAGs.
ACADEMIC PATHWAYS

• Business
• Creative Arts
• Health Careers
• Hospitality
• Humanities, Liberal Arts, Social & Behavioral Sciences
• Industrial Manufacturing and Construction
• Information Technology
• Public Safety
• Science, Technology, Engineering, and Mathematics

Tri-C also offers many pathways for students planning to transfer to a four year college or university. Learn more about Transfer Opportunities.

In addition to our Academic Programs, Tri-C also offers educational opportunities for professional development, workforce training, community education, and personal enrichment.

Still working on making a career decision? Tri-C offers many resources to students to help them in selecting an academic program including academic counseling and career exploration/planning tools.

Business

• Accounting
• Business Management
• Business Management (Human Resources Management)
• Business Management (International Business)
• Business Management (Small Business Management)
• Business Technology
• Captioning and Court Reporting
• Construction Engineering Technology
• Hospitality Management (Culinary Art)
• Hospitality Management (Hotel, Destination, and Event Management)
• Hospitality Management (Restaurant/Food Service Management)
• Information Technology (Business Solutions)
• Information Technology (Cybersecurity)
• Information Technology (Networking Software)
• Information Technology (Programming and Development)
• Interior Design
• Lean Six Sigma (Professional Development Programs)

• Marketing
• Organizational Effectiveness (Professional Development Programs)
• Paralegal Studies
• Professions (Professional Development Programs)
• Purchasing and Supply Management
• Visual Communication and Design (Graphic Design)
• Visual Communication and Design (Illustration)
• Visual Communication and Design (Photography)
• Visual Communication and Design (Web and Interactive Media)

General Application Procedures

Business and Technology Programs

Certain programs at Cuyahoga Community College require students to meet proficiency requirements in order to progress to the next level of course work within the student’s major area of study. In addition to the proficiency requirements, some may also require students to complete an application for that program.

Students are responsible for meeting the admission and/or proficiency requirements for a listed program major.

Prior to taking any coursework, students should follow the regular procedures for admission to Cuyahoga Community College. These procedures can be found in the Admissions (p. 53) section of the catalog.

In addition to the admission procedures, all students must do the following:

1. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility.

2. If indicated on the program sequence page(s), submit a completed application form to the program to which you wish to apply. Application forms may be obtained from the departmental office.

3. Complete all other requirements for your program as specified on the program sequence page(s). Additional details about the program can be obtained from the program coordinator/manager or by appointment with a Tri-C counselor.

If an application is required for your program, the application does not necessarily guarantee admission to that program.

Transition to New Math Curriculum

In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College’s mathematics curriculum, the following “grandfathering” time periods have been established:

• For Graduation: MATH-1141, MATH-1200, and MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College's Math Requirement for graduation through Summer 2021.
• For Admission to Selective Admission Programs: For students admitted to begin these programs prior to Fall 2019 MATH-1141, MATH-1200, or MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

Definition of Eligibility
Eligibility for a specific course may be demonstrated by any of the following:

1. Completion of Tri-C’s assessment with a score appropriate for placement into the specific course listed; OR
2. Completion of the prerequisite for the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university); OR
3. Completion of the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university).

Quarter Courses
Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

Accounting
Certificate(s) may have an open elective or an open Math, Communications, Arts & Humanities, Social & Behavioral Sciences, Natural and Physical Sciences that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
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<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td>3</td>
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<td>BADM-201H</td>
<td>Honors Business Communications</td>
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</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
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<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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</tbody>
</table>

Electives
Recommended Electives
Select from the following courses to fulfill the elective requirement. Please check with counseling for transferability.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>ACCT-1030</td>
<td>Payroll</td>
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<tr>
<td>ACCT-2041</td>
<td>Business Taxation</td>
<td>4</td>
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<td>ACCT-2050</td>
<td>Volunteer Income Tax Assistance</td>
<td>2</td>
</tr>
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<td>ACCT-2320</td>
<td>Intermediate Accounting II</td>
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<td>ACCT-2340</td>
<td>Cost Accounting</td>
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<td>ACCT-2500</td>
<td>Governmental/Non-Profit Accounting</td>
<td>4</td>
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<tr>
<td>ACCT-2510</td>
<td>Auditing</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>ACCT-28xx</td>
<td>Accounting Special Topics</td>
<td>2-4</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates
• Bookkeeping, Certificate of Proficiency (p. 214)
• Payroll, Certificate of Proficiency (p. 381)
• Tax Preparation, Certificate of Proficiency (p. 416)
• Accounting, Associate of Applied Business (p. 180)
• Accounting/CPA Preparation, Post-Degree Professional Certificate (p. 182)

Training and Credentials
• Enrolled Agent (p. 286)

Business Management
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
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<th>Title</th>
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</tr>
</thead>
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<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
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</tbody>
</table>

Select one of the following:

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>
Recommended Electives

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<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1070</td>
<td>Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
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<tr>
<td>BADM-1460</td>
<td>Workers’ Compensation Law</td>
<td>3</td>
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<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
<td>3</td>
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<tr>
<td>BADM-2180</td>
<td>Purchasing Management</td>
<td>3</td>
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<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2340</td>
<td>Human Resources Law and Application</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>Global Commerce and Communication</td>
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<tr>
<td>BADM-2830</td>
<td>Cooperative Field Experience</td>
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<tr>
<td>MARK-1080</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2261</td>
<td>Salesmanship and Promotional Strategies</td>
<td>3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates

- Accounting/CPA Preparation, Post-Degree Professional Certificate (p. 182)

Degrees and Certificates

- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)

Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 230)
- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Business Management (Human Resources Management)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>
Certificate(s) may have additional courses that do not overlap with the
Business Management (Small Business Management)

Degrees and Certificates

Related Degrees and Certificates

- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)

Degrees and Certificates

- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)

Training and Credentials

- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Business Management (International Business)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>Global Commerce and Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>Select one of the following:</td>
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<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
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<tr>
<td>BADM-2161</td>
<td>Introduction to Purchasing and Supply Management</td>
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</tr>
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<td>BADM-2780</td>
<td>Global Marketing and Distribution</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
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<tr>
<td>BADM-2790</td>
<td>International Business Strategy and Application</td>
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<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select Foreign Language elective</td>
<td>3-4</td>
</tr>
</tbody>
</table>

1. Foreign language electives should be selected in the same language. Department approval required to select another foreign language. American Sign Language courses are not foreign language elective options for this degree.
2. MATH-1800-1820 may not be used to meet this requirement; MATH-1470 Modern Mathematics for Business and Social Science I or higher is recommended for students planning to transfer.
Training and Credentials

- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Business Technology

Code | Title | Credit Hours
--- | --- | ---
BADM-1020 | Introduction to Business | 3
BT-1201 | Word Processing | 3
MATH-1xxx | 1000-level Math course or higher (p. 28) | 3
Select one of the following:
ENG-1010 | College Composition I | 3
ENG-101H | Honors College Composition I | 3
Select one of the following:
IT-1090 | Computer Applications | 3
IT-109H | Honors Computer Applications | 3
Select one of the following:
ACCT-1311 | Financial Accounting | 3
BADM-1122 | Principles of Management and Organizational Behavior | 3
BT-1700 | Business Spreadsheets (Excel) | 3
ECON-2000 | Principles of Microeconomics | 3
Select one of the following:
ENG-1020 | College Composition II | 3
ENG-102H | Honors College Composition II | 3
ACCT-1520 | QuickBooks Immersion | 2
BADM-1301 | Small Business Management | 3
ECON-2010 | Principles of Macroeconomics | 3
MARK-2010 | Principles of Marketing | 3
Select one of the following:
BADM-2010 | Business Communications | 3
BADM-201H | Honors Business Communications | 3
BADM-1080 | Social Media Marketing | 3
BADM-2450 | New Business Development | 5
BADM-2151 | Business Law | 3
PHIL-2020 | Ethics | 3

1 MATH-1800-1819 Special Topics in Math and MATH-2800-2819 Advanced Special Topics in Math & MATH-1820 Independent Study/Research in Mathematics/MATH-2820 Independent Advanced Study/Research in Mathematics may not be used to meet this requirement. MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.

Related Degrees and Certificates

- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)

Degrees and Certificates

- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
Captioning and Court Reporting

Students must select either Option A (Court Reporting - Stenowriting) or Option B (Voicewriting) to complete this degree program.

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
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</tbody>
</table>

Select one of the following options:

Option A

- C&CR-1000 Introduction to Court Reporting
- C&CR-1300 Realtime Theory I

Option B

- C&CR-1100 Introduction to Voice Captioning
- C&CR-1200 Voicewriting I
- C&CR-1210 Voicewriting II

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I
- C&CR-2200 Medical Terminology for Captioning and Court Reporting
- C&CR-2351 Editing Legal Documents
- MATH-1xxx 1000-level MATH course or higher (p. 28)

Select one of the following options:

Option A

- C&CR-1331 Realtime Theory II
- C&CR-1335 Realtime Theory III

Option B

- C&CR-1220 Voicewriting III
- C&CR-1451 Speedbuilding and Transcription at 140 WPM
- C&CR-1341 Realtime Theory IV (Option A)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>C&amp;CR-1000</td>
<td>Introduction to Court Reporting</td>
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<tr>
<td>C&amp;CR-1300</td>
<td>Realtime Theory I</td>
<td>4</td>
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<tr>
<td>C&amp;CR-1331</td>
<td>Realtime Theory II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1335</td>
<td>Realtime Theory III</td>
<td>2</td>
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<tr>
<td>C&amp;CR-1341</td>
<td>Realtime Theory IV</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional program courses 51-53

Total Credit Hours 62-64

(B) Voicewriting

Voicewriting Option teaches students to utilize voice-recognition software and technology. Voicewriting technology enables users to create and edit documents, send email, access the internet and perform other functions in a hands-free environment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>C&amp;CR-1100</td>
<td>Introduction to Voice Captioning</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1200</td>
<td>Voicewriting I</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1210</td>
<td>Voicewriting II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1220</td>
<td>Voicewriting III</td>
<td>4</td>
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</tbody>
</table>

Additional program courses 51-53

Total Credit Hours 60-62

Related Degrees and Certificates

- Captioning and CART Providing, Short-Term Certificate (p. 223)
- Court Reporting Technologies, Short-Term Certificate (p. 251)
- Voicewriting, Short-Term Certificate (p. 424)
- Captioning and Court Reporting Certified Stenowriting, Certificate of Proficiency (p. 223)
- Captioning and Court Reporting Certified Voicewriting, Certificate of Proficiency (p. 224)
• Captioning and Court Reporting, Associate of Applied Business (p. 225)

Construction Engineering Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101 H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
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<tr>
<td>IT-109 H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1750</td>
<td>Construction Safety</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
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</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>CNST-2201</td>
<td>Introduction to Building Information Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2210</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
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<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
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<tr>
<td>MET-1601</td>
<td>Technical Statics</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2330</td>
<td>Construction Scheduling</td>
<td>3</td>
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<td>CNST-xxx</td>
<td>CNST Elective 1</td>
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<td>MET-2200</td>
<td>Strength of Materials</td>
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<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Sciences requirement (p. 33)</td>
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<td>Select one of the following:</td>
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<tr>
<td>ACCT-1020</td>
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<tr>
<td>ACCT-1311</td>
<td>Financial Accounting 2</td>
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</tr>
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</table>

1 CNST-1510 Green Building & Sustainability I recommended for university transfer
2 ACCT-1311 Financial Accounting recommended for university transfer

Related Degrees and Certificates

• Construction Project Management, Certificate of Proficiency (p. 249)
• Construction Engineering Technology, Associate of Applied Science (p. 248)

Hospitality Management (Culinary Art)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.
• Professional Culinarian/Cook, Certificate of Proficiency (p. 399)
• Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business (p. 307)

Degrees and Certificates
• Hospitality Management (Hotel, Destination, and Event Management), Associate of Applied Business (p. 308)
• Hospitality Management (Restaurant/Food Service Management), Associate of Applied Business (p. 309)

Hospitality Management (Hotel, Destination, and Event Management)
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
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<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td></td>
<td>IT-1090</td>
<td>Computer Applications</td>
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<td></td>
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<td>Honors Computer Applications</td>
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<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
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</tr>
<tr>
<td>HOSP-1481</td>
<td>Housekeeping and Facilities Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1540</td>
<td>Lodging Operations Lab</td>
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<td>HOSP-1580</td>
<td>Front Office Operations</td>
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<td>Arts and Humanities (p. 28)</td>
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<td>ENG-102H</td>
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<td>HOSP-1960</td>
<td>Lodging/Tourism Field Experience</td>
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<tr>
<td>HOSP-1380</td>
<td>Dimensions of Tourism</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
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<tr>
<td>HOSP-2480</td>
<td>Hospitality Law</td>
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<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
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<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
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<tr>
<td>BADM-xxx</td>
<td>Business Elective</td>
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<tr>
<td>HOSP-2380</td>
<td>Hospitality Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
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</tr>
<tr>
<td>HOSP-2580</td>
<td>Convention Management and Meeting Planning</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2862</td>
<td>Lodging and Tourism Management Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Social &amp; Behavioral Sciences requirement (p. 29)</td>
<td>3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates
• Event Planning, Short-Term Certificate (p. 291)
• Food and Beverage Operations, Certificate of Proficiency (p. 299)
• Lodging Rooms Division, Certificate of Proficiency (p. 331)
• Personal Chef, Certificate of Proficiency (p. 382)
• Professional Baking, Certificate of Proficiency (p. 398)
• Professional Culinarian/Cook, Certificate of Proficiency (p. 399)
• Hospitality Management with a Concentration in Hotel, Destination & Event Management, Associate of Applied Business (p. 308)

Degrees and Certificates
• Hospitality Management (Restaurant/Food Service Management), Associate of Applied Business (p. 309)
• Hospitality Management (Culinary Art), Associate of Applied Business (p. 307)

Training and Credentials
• Event Planning (p. 300)

Hospitality Management (Restaurant/Food Service Management)
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

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<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
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</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1360</td>
<td>Fundamentals of Restaurant/Food Service Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1680</td>
<td>Beverage Management</td>
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<tr>
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<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
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<td></td>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td></td>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxx</td>
<td>Business Elective</td>
<td>3</td>
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<tr>
<td>HOSP-2380</td>
<td>Hospitality Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2580</td>
<td>Convention Management and Meeting Planning</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2862</td>
<td>Lodging and Tourism Management Experience</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>ACCT-1020 Applied Accounting</td>
<td>3</td>
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<tr>
<td>HOSP-1650</td>
<td>Dining Room Operations</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2350</td>
<td>Restaurant Operations</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Arts and Humanities Requirements (p. 28)</td>
<td>3</td>
</tr>
</tbody>
</table>

Cuyahoga Community College 2019-2020 Catalog
ENG-1020 College Composition II
ENG-102H Honors College Composition II
HOSP-2360 Restaurant Marketing 2
HOSP-2371 Restaurant/Foodservice Entrepreneurship 2
HOSP-2500 Hospitality Cost Control 3
HOSP-2871 Food & Beverage Management Experience 2
Social and Behavioral Science OR Natural/Physical Science Requirements (p. 29)

Related Degrees and Certificates
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinary/Cook, Certificate of Proficiency (p. 399)
- Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business (p. 309)

Degrees and Certificates
- Hospitality Management (Lodging-Tourism Management), Associate of Applied Business (p. 308)
- Hospitality Management (Culinary Art), Associate of Applied Business (p. 307)

Information Technology (Business Solutions)
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td>3</td>
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<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I^1</td>
<td>3</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2830</td>
<td>Cooperative Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
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</table>

IT-2700 Systems Analysis and Design 3
Select one of the following: 4
IT-2620 Visual Basic .NET Programming 3
IT-2680 Visual C#.NET
IT-2600 E-Business Programming Technologies 3
Select one of the following: 3-4
MARK-2010 Principles of Marketing 3
ECON-2010 Principles of Macroeconomics 3
BADM-xxxx Business Elective 3
Select one of the following: 3
PHIL-2020 Ethics 3
PHIL-202H Honors Ethics 3
Select one of the following: 3
COMM-1010 Fundamentals of Speech Communication 3
COMM-101H Honors Speech Communication 3

Social and Behavioral Sciences requirement (p. a)

^1 Students who do not place into MATH-1410 Elementary Probability and Statistics I on the assessment test must take MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

^2 Cannot also be selected to fulfill open Business Elective.

Related Degrees and Certificates
- Mobile Application Development, Short-Term Certificate (p. 357)
- Web Application Development, Short-Term Certificate (p. 424)
- Information Technology - Business Solutions, Associate of Applied Business (p. 314)
- .Net Programming, Post-Degree Professional Certificate (p. 177)
- Data Analytics, Post-Degree Professional Certificate (p. 259)
- Information Technology-Programming and Development, Post-Degree Professional Certificate (p. 320)

Information Technology (Cybersecurity)
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 28)</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one of the following: 3
ENG-1010 College Composition I 3
ENG-101H Honors College Composition I 3
BADM-1020 Introduction to Business 3
Select one of the following:
COMM-1010 Fundamentals of Speech Communication 3
COMM-101H Honors Speech Communication 3

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Academic Pathways - Cuyahoga Community College 2019-2020 Catalog

IT-1050  Programming Logic  3
ITNT-2300  Networking Fundamentals  3
IT-2740  Fundamentals of Client Operating Systems and Hardware for Cybersecurity  4
BADM-1070  Introduction to Project Management  3
ITNT-2320  Network Administration I  3
ITNT-2370  Network Security Fundamentals  3
ITNT-2380  Linux Administration  3

Select one of the following:

BADM-2010  Business Communications
BADM-201H  Honors Business Communications
EET-1302  Cisco I: Basic Networking Technologies  3
EET-1312  Cisco II Basic Routing and Switching  3
IT-2750  Scripting Fundamentals for Cybersecurity  3

Natural Science (lecture) (p. 29)  3
BADM-1050  Professional Success Strategy  3
IT-2710  Advanced Topics in Network Security  3

Select one of the following:

PHIL-2020  Ethics
PHIL-202H  Honors Ethics

Select one of the following:

ITNT-2310  TCP/IP  3
ITNT-2380  Linux Administration  3

Arts & Humanities/Social & Behavioral Sciences requirement (p. 28)  3

Select one of the following:

ENG-1010  College Composition I
ENG-101H  Honors College Composition I
BADM-1020  Introduction to Business  3
ITNT-2370  Network Security Fundamentals  3

Select one of the following:

COMM-1010  Fundamentals of Speech Communication
COMM-101H  Honors Speech Communication
ITNT-2380  Linux Administration  3
MATH-1xxx  1000-level MATH course or higher (p. 28)  3
BADM-1050  Professional Success Strategy  3
ITNT-2990  Networking Capstone  3
ITXX-2xxx  2000 level ITNT elective  1-3

Natural and Physical Sciences requirement (lecture) (p. 29)  3

Electives

ITNT-2420  Network Administration II  3
IT-2830  Cooperative Field Experience  1-3

Related Degrees and Certificates

• Information Technology - Cybersecurity, Associate of Applied Business (p. 220)
• Cybersecurity, Post-Degree Professional Certificate (p. 258)

Degrees and Certificates

• Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)
• Information Technology - Networking Software Associate of Applied Business (p. 216)
• Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

Training and Credentials

• Cisco Technical Training Institute (p. 235)
• CompTIA Certified Computer Support Specialist (p. 243)

Information Technology (Networking Software)

Certificate(s) may have an open elective or an open Math, Communications, Arts & Humanities, Social & Behavioral Sciences, Natural and Physical Sciences that will not display on this page as an overlapping course.  See Certificate Program page for complete list of certificate requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>EET-1035</td>
<td>Operating Systems and Software for PC Technicians</td>
<td>4</td>
</tr>
<tr>
<td>EET-1055</td>
<td>Computer Hardware Support</td>
<td>4</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
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<tr>
<td>ITNT-2300</td>
<td>Networking Hardware</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2320</td>
<td>Network Administration I</td>
<td>3</td>
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</table>

Arts & Humanities/Social & Behavioral Sciences requirement (p. 28)  3

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2370</td>
<td>Network Security Fundamentals</td>
<td>3</td>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2380</td>
<td>Linux Administration</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2990</td>
<td>Networking Capstone</td>
<td>3</td>
</tr>
<tr>
<td>ITXX-2xxx</td>
<td>2000 level ITNT elective</td>
<td>1-3</td>
</tr>
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</table>

Natural and Physical Sciences requirement (lecture) (p. 29)  3

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ITNT-2420</td>
<td>Network Administration II</td>
<td>3</td>
</tr>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates

• Cisco, Short-Term Certificate (p. 236)
• Computer Maintenance Technology, Certificate of Proficiency (p. 244)
• Information Technology - Networking Software, Associate of Applied Business (p. 316)

**Degrees and Certificates**

• Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)
• Information Technology - Cybersecurity, Associate of Applied Business (p. 315)
• Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

**Training and Credentials**

• Cisco Technical Training Institute (p. 235)

**Information Technical Training Institute (Programming and Development)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>IT-1150</td>
<td>Introduction to Web Programming</td>
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<tr>
<td>IT-2650</td>
<td>Java Programming</td>
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<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
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<tr>
<td>MATH-1xxx</td>
<td>MATH-1000 level course or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>IT-2320</td>
<td>Interactive Internet Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>IT-2660</td>
<td>Data Structures &amp; Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>INTD-1101</td>
<td>Hand Drafting and Sketching for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1111</td>
<td>Introduction to Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td>3</td>
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</tbody>
</table>

1 Course cannot be used for both a requirement and an elective. ITNT-2300 can only be used to meet an elective requirement for students who successfully complete IT-2830.

**Programming Electives**

Select from the following courses to fulfill the programming elective requirement. Courses cannot be used for both a requirement and elective (in the case of an “or” selection above):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>IT-1100</td>
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<tr>
<td>IT-2080</td>
<td>Data Visualization</td>
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<tr>
<td>IT-2090</td>
<td>Data Analytics Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2100</td>
<td>iOS Application Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2110</td>
<td>Android Mobile Application Development</td>
<td>3</td>
</tr>
<tr>
<td>IT-2600</td>
<td>E-Business Programming Technologies</td>
<td>3</td>
</tr>
<tr>
<td>IT-2620</td>
<td>Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2720</td>
<td>Ethical Hacking and Systems Defense</td>
<td>3</td>
</tr>
<tr>
<td>IT-2730</td>
<td>Intrusion Detection/Prevention Systems Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT-2740</td>
<td>Fundamentals of Client Operating Systems and Hardware for Cybersecurity</td>
<td>4</td>
</tr>
<tr>
<td>IT-2750</td>
<td>Scripting Fundamentals for Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>IT-2670</td>
<td>C/C++ Programming Language</td>
<td>4</td>
</tr>
<tr>
<td>IT-2680</td>
<td>Visual C# .NET</td>
<td>4</td>
</tr>
</tbody>
</table>

**Related Degrees and Certificates**

• Mobile Application Development, Short-Term Certificate (p. 357)
• Web Application Development, Short-Term Certificate (p. 424)
• Information Technology - Programming and Development, Associate of Applied Business (p. 318)
• Information Technology-Programming and Development, Post-Degree Professional Certificate (p. 320)

**Training and Credentials**

• Cleveland Codes Tri-C Software Developers Academy (p. 238)

**Interior Design**

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1101</td>
<td>Hand Drafting and Sketching for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1111</td>
<td>Introduction to Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one of the following:

- IT-1090 Computer Applications
- IT-109H Honors Computer Applications
- INTD-1120 Architectural Drafting for Interiors I
- INTD-2320 History of Interiors
- INTD-2330 Interior Design Materials and Sources
- INTD-2430 Architectural Materials and Methods
- MATH-1xxx 1000-level MATH course or higher

Select one of the following:

- ART-1081 2D Design and Color
- INTD-1130 Architectural Drafting for Interiors II
- INTD-2300 Interior Design Studio I
- INTD-2380 Fundamentals of Lighting
- VC&D-1000 Visual Communication Foundation
- INTD-2400 Interior Design Studio II
- INTD-2460 Interior Design Presentation
- INTD-2471 Professional Practice of Interior Design
- INTD-2851 Interior Design Field Experience

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- PSY-1010 General Psychology
- PSY-101H Honors General Psychology

Related Degrees and Certificates

- Interior Decorating, Certificate of Proficiency (p. 323)
- Interior Design, Associate of Applied Business (p. 323)

Lean Six Sigma (Professional Development Programs)

Training and Credentials

- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- Lean Six Sigma Yellow Belt, Green Belt for Health Care (p. 329)
- Lean Six Sigma Yellow Belt for Education (p. 328)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Marketing

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MARK-1080</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Select one of the following:

- BADM-2010 Business Communications
- BADM-201H Honors Business Communications
- BADM-1122 Principles of Management and Organizational Behavior
- MARK-2010 Principles of Marketing
- ECON-2010 Principles of Macroeconomics
- MATH-1240 Contemporary Mathematics

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- ACCT-1311 Financial Accounting
- BT-2040 Emerging Workplace Technology
- MARK-1090 Social Media Content Strategies
- PHIL-1020 Introduction to Logic

Select one of the following:

- MARK-2261 Salesmanship and Promotional Strategies
- MARK-2270 Principles of Advertising
- MARK-2080 Social Media Analytics
- MARK-2090 Digital Marketing Design
- BADM-2151 Business Law
- PHIL-2060 Business Ethics

3 Social and Behavioral Sciences Requirements (p. 33)

ELECTIVES

1 BADM-1080, BADM-1090, BADM-2080, and BADM-2090 are cross-listed with MARK-1080, MARK-1090, MARK-2080, and MARK-2090.

Related Degrees and Certificates

- Social Media Marketing, Short-Term Certificate (p. 409)
- Marketing, Associate of Applied Business (p. 337)

Degrees and Certificates

- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Social Media Marketing, Certificate of Proficiency (p. 409)

Organizational Effectiveness (Professional Development Programs)

Training and Credentials

- Frontline Manager Certificate Program (p. 300)

Paralegal Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>PL-1001</td>
<td>Introduction to the Paralegal Profession</td>
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</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Select one of the following:

- IT-1090 Computer Applications
IT-109H  Honors Computer Applications  3
Select one of the following:  3
POL-1010  American National Government  
POL-101H  Honors American National Government  
MATH-1100  Mathematical Explorations (or higher)  3
PHIL-1020  Introduction to Logic  3
PL-1300  Civil Procedure  3
PL-1401  Legal Research and Writing I  3
PL-1502  Law Office Technology  3
Select one of the following:  3
ENG-1020  College Composition II  
ENG-102H  Honors College Composition II  
PL-2301  Torts and Evidence  4
PL-2401  Legal Research and Writing II  3
PL-2440  Business Transactions  3
PL-xxxx  Any PL elective course  2-3
Select one of the following:  3
ACCT-1311  Financial Accounting  
EHST-1310  Introduction to Environmental Law  
MA-1020  Medical Terminology I  
PL-2851  Paralegal Practicum  1  1
PL-2991  Paralegal Capstone  2  1
PL-xxxx  Any PL elective course  2-3
PL-xxxx  Any PL elective course  3
PL-2xxx  Any 2000-level PL elective course  3
Select one of the following:  3
POL-1020  State & Local Government  
POL-2100  Constitutional Law  

1 Can be waived with documentation of equivalent experience. Minimum of 60 credits for the degree still required.
2 PL grades below a “C” will not be accepted and those courses will have to be re-taken.

### Related Degrees and Certificates
- Paralegal Studies, Associate of Applied Business (p. 377)
- Paralegal Studies, Post-Degree Professional Certificate (p. 376)

### Degrees and Certificates
- Legal Administrative Specialist, Certificate of Proficiency (p. 331)

### Professions (Professional Development Programs)

### Training and Credentials
- Budgeting Certificate (p. 214)
- Enrolled Agent (p. 286)
- Home Inspector Training (p. 306)
- Payroll/PayTrain Certificate (p. 382)
- Digital Marketing Manager: Professional Online Certificate (p. 271)
- Digital and Social Selling Online Certificate (p. 269)
- Accounting, Finance, and Tax Online Certificates (p. 181)

### Purchasing and Supply Management
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<td>Introduction to Business</td>
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<td>Introduction to Purchasing and Supply Management</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher) 1</td>
<td>3</td>
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<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
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<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
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<tr>
<td>ENG-1020</td>
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<td>ENG-102H</td>
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<td>ACCT-1341</td>
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<td>BADM-2110</td>
<td>Production/Operation Management</td>
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<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
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<td>MARK-2010</td>
<td>Principles of Marketing</td>
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<td>BADM-2120</td>
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<td>BADM-2151</td>
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<td>BADM-2180</td>
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<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
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<tr>
<td>MARK-2261</td>
<td>Salesmanship and Promotional Strategies</td>
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</tbody>
</table>

1 MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement. MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.
2 PHIL-2020 Ethics will be accepted in place of PHIL-2060 Business Ethics.

### Related Degrees and Certificates
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)
- Purchasing and Supply Management, Associate of Applied Business (p. 400)
- Purchasing and Supply Management, Post-Degree Professional Certificate (p. 401)
Degrees and Certificates

- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)

Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 230)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Visual Communication and Design

(Graphic Design)

<table>
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<th>Code</th>
<th>Title</th>
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<td>Typography I</td>
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<td>Honors College Composition I</td>
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<td>Vector Graphics</td>
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<td>VCGD-1500</td>
<td>Advertising and Design</td>
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<td>Brand Identity Design</td>
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<tr>
<td>VCGD-2232</td>
<td>Typography II</td>
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<td>Information Graphic Design</td>
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<td>Package Design</td>
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<td>VCGD-2631</td>
<td>Graphic Design Studio</td>
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<td>VCIM-2700</td>
<td>User Experience Design</td>
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<td>Portfolio Preparation</td>
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</table>

Related Degrees and Certificates

- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business (p. 419)

Visual Communication and Design

(Illustration)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
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<tr>
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<td>VCL-2142</td>
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<td>VCL-2040</td>
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<td>VCL-2341</td>
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<td>VCLM-2271</td>
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<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
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<td>ART-2000</td>
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<td>VCXX-xxxx</td>
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</table>

Related Degrees and Certificates

- 3D Animation, Short-Term Certificate (p. 177)
- 3D Design, Short-Term Certificate (p. 178)
- Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business (p. 420)

Visual Communication and Design

(Photography)

<table>
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<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
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VCPH-1150  History of Photography  3
VCPH-1261  Photography I  3
Select one of the following:  3
   ENG-1010  College Composition I
   ENG-101H  Honors College Composition I
MATH-1xxx  1000-level MATH course or higher  3
   (p. 28)
VCGD-2232  Typography II  3
VCPH-1450  Digital Imaging I  3
VCPH-2050  Commercial Studio Techniques I  3
VCPH-2160  Digital Video for Photographers  3
VCPH-2260  Photography II  3
VCPH-2450  Digital Imaging II  3
VCPH-2550  Commercial Studio Techniques II  3
VCPH-2660  Photography III  3
Select one of the following:  3
   COMM-1010  Fundamentals of Speech Communication
   COMM-101H  Honors Speech Communication
Select one of the following:  3
   SOC-1010  Introductory Sociology
   SOC-101H  Honors Introductory Sociology
   MJS-1310  Film Appreciation  3
   VCPH-2530  Professional Practices in Photography  3
   VCPH-2541  Individual Projects - Photography  3
   VCPH-2760  Editorial Photography  3
   VCPH-2990  Photographic Portfolio Preparation  2

1 MARS-1180 Introduction to Media Arts and Filmmaking taken prior to Fall 2017 will be accepted in place of VCPH-2160.

Related Degrees and Certificates
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Photography, Associate of Applied Business (p. 421)

Visual Communication and Design (Web and Interactive Media)

<table>
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<tr>
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<td>1000-level MATH course or higher</td>
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<td>Select one of the following:</td>
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<tr>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML (Option A)</td>
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<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design (Option B)</td>
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<td>Vector Graphics</td>
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<td>VCIL-1640</td>
<td>3D Design</td>
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</table>

Communication requirement (p. 27)  3

VCIM-1970  Midpoint Portfolio Review  1
or VC&D-2830  Cooperative Field Experience  3
Select one of the following:  3
   VCIM-1770  Web Publishing II: Site Theory & Construction (Option A)
   VCIM-1400  Game Design II: Game Engines (Option B)
   VCIM-2271  2D Animation  3
   VCIM-2371  Interactive Media I  3
   Arts and Humanities requirements (p. 28)  3
Select one of the following:  3
   VCIM-2281  Web Publishing III: JavaScript (Option A)
   VCIM-2200  Game Design III: Game Design Studio (Option B)
   VCIM-2380  Interactive Media II: App Design  3
   VCIM-2072  Service Learning: Real World Experience in Web, Game Design, and Interactive Media  3
   VC&D-2991  Portfolio Preparation  3

Social and Behavioral Science/Natural Science requirements (p. 29)  3
Select one of the following:  3
   VCIM-2291  Web Publishing IV: Data-Driven Sites  3
   VCIM-2401  Game Design IV-Game Publishing  3

Options
(A) Technical Electives for Web Design & Construction Specialist
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills

<table>
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<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction</td>
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<td>Web Publishing III: JavaScript</td>
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<tr>
<td>Additional program courses</td>
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</table>

Total Credit Hours  64

(B) Technical Electives for Game Designer
Game Designer: Helps students learn the fundamentals of 2D and 3D Game Design for various platforms including console, computer, and mobile devices.

<table>
<thead>
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<th>Title</th>
<th>Credit Hours</th>
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<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
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<td>VCIM-1400</td>
<td>Game Design II: Game Engines</td>
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<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio</td>
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<tr>
<td>VCIM-2401</td>
<td>Game Design IV-Game Publishing</td>
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<tr>
<td>Additional program courses</td>
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Total Credit Hours  64
Related Degrees and Certificates

- Game Design, Short-Term Certificate (p. 301)
- Web Design & Development, Certificate of Proficiency (p. 425)
- Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business (p. 422)

Creative Arts

- Art
  - Associate of Arts Degree/University Transfer
- Dance
  - Interior Design
  - Marketing
- Media and Journalism Studies
- Media Arts and Filmmaking
- Music
- Recording Arts and Technology
- Theatre Arts
  - Visual Communication and Design (Graphic Design)
  - Visual Communication and Design (Illustration)
  - Visual Communication and Design (Photography)
  - Visual Communication and Design (Web and Interactive Media)

Art

Art courses at Cuyahoga Community College (Tri-C®) connect students with top-notch faculty and working professional artists who can help them achieve their creative goals and grow as artists. A wide range of courses are offered: lecture classes in Art Appreciation and Art History, and studio classes in 2D & 3D Design, Drawing, Painting, Printmaking, Ceramics, Sculpture and Art Therapy. Digital Arts and Honors courses are also available. Tri-C students participate in portfolio-building activities that prepare them to transfer to a four-year institution or to enter the practicing art world.

Students interested in pursuing advanced studies in Art should plan to earn an Associate of Arts degree at Tri-C and then transfer to a four-year college or university to complete a Bachelor of Arts degree in Art or a Bachelor of Fine Arts degree. Please visit the transfer center page to view available transfer pathways and articulation agreements from Tri-C to four-year institutions, including an agreement with Cleveland State University.

Careers

There are a variety of art-related careers in commercial, nonprofit and government settings. Some of the many potential careers in the Arts include: Fine Artist (Ceramicist, Painter, Printmaker, Photographer, etc.), Art Teacher, Art Historian, Art Curator, Art Preparator/Handler, Art Therapist, Arts Administrator, Art Director, Art Critic/Writer, Museum Technician, Textile/Fabric Artist or Designer, Muralist, and many more!

Learn more (p. 473) about available courses at Tri-C in this discipline.

Program contact and additional information: Learn more

Associate of Arts Degree/University Transfer

The Associate of Arts degree is a flexible 2 year degree designed for students who want to begin their studies at Tri-C and plan to transfer to a baccalaureate degree-granting college or university for completion of a four-year degree in the Creative and Performing Arts. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Associate of Arts Degree Requirements (p. 35)

Learn more about transfer opportunities at Tri-C.

Learn more about Creative and Performing Arts courses offered at Tri-C:
  - Art (p. 473)
  - Dance (p. 508)
  - Media and Journalism Studies (p. 615)
  - Music (p. 625)
  - Theatre Arts (p. 687)

Dance

Cuyahoga Community College (Tri-C®) Dance promotes your artistic and personal development by providing technical and creative dance studies in a supportive learning community.

The program includes a variety of courses to enhance your understanding, skills and appreciation of dance, whether pursuing dance as a career, or simply exploring the personal benefits of studying dance. Accomplished instructors mentor students, challenging them to think creatively and helping them identify goals. Performance opportunities as well as opportunities to gain practical work experience in dance are available. For students who desire a career in dance but are not sure where to begin, Tri-C offers an accessible, affordable and quality program.
to gain hands-on experience, explore creativity and identify a pathway to a sustainable career.

Tri-C collaborates with arts organizations to offer master classes, residencies and live performances. Students have worked with local, national and international dance professionals. We also provide opportunities to collaborate with fellow Tri-C students and faculty in disciplines such as media arts/film, recording arts and technology, music, theater and more.

Students interested in pursuing studies in the discipline of Dance should plan to pursue an Associate of Arts degree at Tri-C and transfer to a four-year College or University to pursue a Bachelor of Arts degree in Dance. Please visit the transfer center page to view available transfer pathways/articulation agreements from Tri-C to four year partners.

**Careers**

The Dance program is designed to support transfer to a four-year institution. With additional education and experience, graduates can aspire to the following positions: performer, choreographer, teacher, dance therapist, entrepreneur or business owner (e.g., dance or fitness studio owner), dance accompanist, dance or movement researcher.

Learn more (p. 508) about available courses at Tri-C in this discipline: Program contact and additional information: Learn more

**Interior Design**

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
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<td>INTD-1111</td>
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<td>Honors Computer Applications</td>
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**Related Degrees and Certificates**

- Interior Decorating, Certificate of Proficiency (p. 323)
- Interior Design, Associate of Applied Business (p. 323)

**Marketing**

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<td>Social and Behavioral Sciences Requirements (p. 33)</td>
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</table>
The Media and Journalism Studies (MJS) program at Cuyahoga Community College (Tri-C®) offers exciting and rewarding opportunities for students interested in pursuing degrees and careers in various media fields.

Tri-C continually enhances its course offerings to reflect the vast changes taking place in journalism and mass communication. Courses are geared for individuals working toward careers in writing for various media, including work in digital and social media, newspapers, magazines, television and public relations. Courses are also available for aspiring screenwriters, sportswriters, public relations, advertising and sales professionals. Many MJS courses transfer to four-year colleges where students may continue working toward bachelor’s degrees in journalism, communications, or related disciplines.

Students benefit from real-world experience, such as working on The Voice, the college’s award-winning student-run newspaper, and with media outlets throughout Northeast Ohio. Tri-C offers students the opportunity to be placed in engaging internships where they work with professionals in the media.

Students interested in pursuing studies in the discipline of Media and Journalism Studies should plan to pursue an Associate of Arts degree at Tri-C and transfer to a four-year College or University to pursue a Bachelor of Arts degree. Please visit the transfer center page to view available transfer pathways/articulation agreements from Tri-C to four year partners.

**Careers**

The MJS program is designed to support transfer to a four-year institution. With additional education and experience, graduates can aspire to the following positions: newspaper or magazine writer/editor, social media specialist, copywriter (web and print), public relations specialist, marketer, advertiser, and broadcast journalist.

---

**Learn more** (p. 615) about available courses at Tri-C in this discipline.

Program contact and additional information: Learn more.

### Media Arts and Filmmaking

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<td>MARS-2940</td>
<td>MARS Field Experience</td>
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</table>

*1 May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.  
2 MATH-1530 College Algebra is recommended for those who are planning to transfer to a four-year institution.*
3 Students may choose to take an upper-level elective in MARS instead of taking MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production. They may then join MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media as a team member or lead and work on one of the projects that were developed in MARS-2620. Students wishing to produce or direct their own projects in MARS-2720 must take MARS-2620 or have department approval.

4 Course may be repeated once for up to six credits.

**Electives**

In the 3rd and 4th semester, students choose a three-credit course from the following courses as an elective.

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<td>MARS-2780</td>
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</table>

**Related Degrees and Certificates**

- Media Arts and Filmmaking (Digital Video Editing), Short-Term Certificate (p. 345)
- Media Arts and Filmmaking (Motion Graphics), Short-Term Certificate (p. 346)
- Media Arts and Filmmaking, Associate of Applied Business (p. 346)

**Music**

The Music program at Cuyahoga Community College (Tri-C®) offers a rich variety of opportunities for students who want to hone their vocal skills or instrumental chops, deepen their understanding of music theory, history and technology, prepare for a career in music or simply make music a part of their overall college education.

Tri-C music students reap the rewards of learning from top-notch, working musicians with extensive experience in both performance and recording arts, and in all aspects of the music industry.

Tri-C offers credit-bearing classes in every aspect of musical training, including private vocal and instrument classes, ear training, theory, improvisation, history and the music business. Students also can participate in vocal and instrumental ensembles of various types. Internships provide opportunities for students to engage in real-world work experiences that will set them up for success in and beyond the world of music.

Students interested in pursuing studies in the discipline of Music should plan to pursue an Associate of Arts degree at Tri-c and transfer to a four-year College or University to pursue a Bachelor of Arts degree in Music. Please visit the transfer center page to view available transfer pathways/articulation agreements from Tri-C to four year partners, including agreements with Berklee College of Music, The Hartt School at The University of Hartford, and Cleveland State University.

**Careers**

The Music program is designed to support transfer to a four-year institution. With additional education and experience, graduates can aspire to the following positions: composition, film scoring, music business/management, music production and engineering, music therapy, performance, and songwriting.

Learn more (p. 625) about available courses at Tri-C in this discipline.

Program contact and additional information: Learn more.

**Recording Arts and Technology**

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<td>ENG-1010</td>
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<td>Survey of Jazz</td>
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<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
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<td>MUS-1040</td>
<td>Survey of African-American Music</td>
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<td>Survey of World Music</td>
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<td>Basic Audio Electronics</td>
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<td>MUS-1110</td>
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Theatre Arts

The Theatre Arts program at Cuyahoga Community College (Tri-C®) can help students explore their interest in acting and stagecraft as an avocation, or it can set the stage for a career in theatrical performance, production, management and more.

Through studies in acting, stage management, and technical theatre, Tri-C Theatre Arts students will build a solid base for transferring to a four-year institution for a bachelor’s degree in performance or theatre technology.

Students in this program have access to seven different theatre facilities across three Tri-C campuses. The facilities provide students with an opportunity to practice stagecraft and acting by putting on quality productions for theatre lovers.

Tri-C also presents a full schedule of performances presented in those state-of-the-art theatres at the Western, Eastern and Metropolitan Campuses each spring and fall.

Students interested in pursuing studies in the discipline of Theatre Arts should plan to pursue an Associate of Arts degree at Tri-c and transfer to a four-year College or University to pursue a Bachelor of Arts degree in Theatre. Please visit the transfer center page to view available transfer pathways/articulation agreements from Tri-C to four year partners, including agreements with Cleveland State University.

Career Outlook

There are a variety of careers available to pursue in Theatre: onstage, backstage, play writing, and production. Potential careers include actor, director, critic, theatre manager, stage manager, playwright, casting or talent agent, scenic and costume design, lighting and sound manager and many more.

Learn more (p. 687) about available courses at Tri-C in this discipline.

Program contact and additional information: Learn more.

Visual Communication and Design (Graphic Design)

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Related Degrees and Certificates

- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business (p. 419)

Visual Communication and Design (Illustration)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

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<td>VCIL-1142</td>
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<td>VCIL-2142</td>
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**Related Degrees and Certificates**

- 3D Animation, Short-Term Certificate (p. 177)
- 3D Design, Short-Term Certificate (p. 178)
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business (p. 420)

**Visual Communication and Design (Photography)**

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<tr>
<td>VCGD-2232</td>
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<td>Digital Imaging I</td>
<td>3</td>
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<tr>
<td>VCPH-2050</td>
<td>Commercial Studio Techniques I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2160</td>
<td>Digital Video for Photographers</td>
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<td>VCPH-2660</td>
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<td>COMM-1010</td>
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<td>VCPH-2530</td>
<td>Professional Practices in Photography</td>
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<td>VCPH-2541</td>
<td>Individual Projects - Photography</td>
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<td>VCPH-2760</td>
<td>Editorial Photography</td>
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<tr>
<td>VCPH-2990</td>
<td>Photographic Portfolio Preparation</td>
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</table>

1 MARS-1180 Introduction to Media Arts and Filmmaking taken prior to Fall 2017 will be accepted in place of VCPH-2160.

**Related Degrees and Certificates**

- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Photography, Associate of Applied Business (p. 421)

**Visual Communication and Design (Web and Interactive Media)**

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<td>ENG-1010</td>
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<td>VCD-1200</td>
<td>Game Design I: Introduction to Game Design</td>
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<td>VCPH-1150</td>
<td>History of Photography</td>
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<td>VCPH-1261</td>
<td>Typography I</td>
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<td>Digital Imaging I</td>
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<td>Vector Graphics</td>
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<td>VCIL-1640</td>
<td>3D Design</td>
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<td>VCM-1970</td>
<td>Midpoint Portfolio Review or VC&amp;D-2830</td>
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<td>VCGD-2200</td>
<td>Game Design III: Game Design Studio (Option B)</td>
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<td>VCM-2380</td>
<td>Interactive Media II: App Design</td>
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<td>VCM-2072</td>
<td>Service Learning: Real World Experience in Web, Game Design, and Interactive Media</td>
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<td>VCD-2991</td>
<td>Portfolio Preparation</td>
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<tr>
<td>VCGD-2401</td>
<td>Game Design IV-Game Publishing</td>
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Options

(A) Technical Electives for Web Design & Construction Specialist
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills

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<td>Total Credit Hours</td>
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(B) Technical Electives for Game Designer
Game Designer: Helps students learn the fundamentals of 2D and 3D Game Design for various platforms including console, computer, and mobile devices.

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<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
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<td>VCIM-1400</td>
<td>Game Design II: Game Engines</td>
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<tr>
<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2401</td>
<td>Game Design IV-Game Publishing</td>
<td>3</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>52</td>
<td></td>
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<tr>
<td>Total Credit Hours</td>
<td>64</td>
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Related Degrees and Certificates

- Game Design, Short-Term Certificate (p. 301)
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Web Design & Development, Certificate of Proficiency (p. 425)
- Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business (p. 422)

Health Careers and Nursing

- Cancer Registrar
- Dental Hygiene
- Diagnostic Medical Sonography
- Diagnostic Medical Sonography (General Sonography)
- Dietetic Technology
- Electroneurodiagnostic Technology
- Electroneurodiagnostic Technology (Polysomnography)
- Emergency Medical Technology
- Environmental, Health and Safety Technology
- Fire-Emergency Medical Services
- Health Care (Workforce Training Programs)
- Health Information Management Technology
- Human Services
- Laboratory Phlebotomy
- Mammography
- Massage Therapy
- Medical Assisting
- Medical Laboratory Technology
- Nuclear Medicine
- Nursing
- Nursing (Accelerated Track)
- Nursing (ACCESS LPN to RN Track)
- Occupational Therapy Assistant Technology
- Optical Technology
- Patient Navigator
- Pharmacy Technology
- Physical Therapist Assisting Technology
- Practical Nursing
- Radiography
- Respiratory Care
- Sport and Exercise Studies
- Sterile Processing and Distribution Technology
- Surgical Technology
- Veterinary Technology

General Application Procedures

Health Careers

Courses in health career programs are offered in a sequence which begins in the Fall Semester (unless indicated otherwise in the application procedures listed on the program sequence pages).

Admission each year is limited to the number of openings in each program. Those students applying and meeting all of the specific admission requirements will be admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures. Also see the program sequence page(s) for additional application requirements.

1. Submit a completed Application for Admission to Cuyahoga Community College, unless you have previously applied. Prior Tri-C students who have not been enrolled for three years or longer must...
submit an application for Admission/Readmission to Tri-C. See page 20 for information on applying to Tri-C.

2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript directly to the Office of the Registrar at Tri-C (P.O. Box 5966, Cleveland, OH 44101-0966).

3. Contact all colleges/universities you have attended and have them send an official transcript(s) directly to the Office of the Registrar at Tri-C. To ensure time for processing, the transcript should be received at Tri-C at least six to eight weeks prior to the time you expect to apply to the health career program. Applicants who have attended institutions outside the U.S. must contact the Office of the Registrar for special procedures.

4. Complete all required courses and meet the grade point average (GPA) requirement as specified on the program sequence page(s). If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility. In addition to academic requirements, programs may also require certain kinds of experience or other criteria. Refer to the program sequence page(s) for additional information.

5. Submit the program’s application form to the Health Careers Enrollment Center (Metropolitan Campus, MHCS 193, Cleveland, OH 44115). Please note that additional documents may be required to accompany your application form (such as additional copies of high school and college/university transcripts, even if already on file in the Office of the Registrar). You will receive directions concerning additional documents when you obtain the program’s application form. Call 216-987-4247 to obtain an application. Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

Courses used as prerequisites or core courses for the Health Career and Nursing programs MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites and core courses will NOT be accepted by the Health Career and Nursing programs. Students are responsible for consulting with their program manager or counselor to determine P/NP grading options.

Required Criminal Background Check (BCI)
All health career programs at Tri-C are considered selective admission programs. These programs have a limited number of openings each year and have specific admission requirements that must be met prior to admission. The completion of a criminal background check is one of the admission requirements to a Health Career program. The background checks are required in order to:

1. ascertain the ability of students to eventually become licensed, registered and/or certified in their health career profession and
2. the ability of the students to attend mandatory clinical, practicum and/or internship rotations at internal and external facilities in accordance with the requirements of the applicable program of study.

Please see http://www.tri-c.edu/programs/healthcareers/Pages/BackgroundCheckInformation.aspx for important information regarding the BCI requirements and processes.

Required Immunizations
All students enrolled in Health Career programs may be required to receive or have sufficient proof of certain immunizations. See your program manager for a list of required immunizations for your program.

Transition to New Math Curriculum
In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College’s mathematics curriculum, the following “grandfathering” time periods have been established:

- For Graduation: MATH-1141, MATH-1200, and MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College’s Math Requirement for graduation through Summer 2021.
- For Admission to Selective Admission Programs: For students admitted to begin these programs prior to Fall 2019, MATH-1141, MATH-1200 or MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

Definition of Eligibility
Eligibility for a specific course may be demonstrated by any of the following:

1. Completion of Tri-C’s assessment with a score appropriate for placement into the specific course listed; OR
2. Completion of the prerequisite for the course listed with a grade of “C” or higher (including equivalent courses transferred from another college or university); OR
3. Completion of the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university).

Quarter Courses
Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

Nursing (Associate of Applied Science Degree)
Nursing (Accelerated Track)
Nursing ACCESS in Nursing (LPN-RN Track)
Practical Nurse Program (Certificate of Proficiency)

Admission each year is limited to the number of openings in each program. Those students meeting all of the specific admission requirements will be provided with an application and admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures. Additional requirements for each program are listed with the program sequence.

1. Submit a completed Application for Admission or Readmission to Cuyahoga Community College. Prior Tri-C students who have not
been enrolled for three years or longer must submit an Application for Admission/Readmission to Tri-C. Online admission at www.tri-c.edu.

2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript(s) directly to the Office of the Registrar, P. O. Box 5966, Cleveland, OH 44101-0966.

3. Contact all colleges/universities you have attended and have them send an official transcript directly to the Office of the Registrar at Tri-C. To ensure time for processing, the official transcript(s) should be received by the Office of the Registrar at least four weeks prior to contacting the Nursing department. Applicants who have attended institutions outside the U.S. must contact the Enrollment Center for special procedures. It is strongly recommended that all students schedule an appointment with a counselor at their campus of record.

4. Complete all required courses and meet the grade point average (GPA) requirements as specified in the program admissions requirements. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses listed on the program sequence pages are the minimum levels for eligibility.

5. In addition to academic requirements, successful completion of the Elsevier Admission Test (A2) is required in order to receive an application to the program.

6. Once all prerequisites have been completed, student may request a review online at http://www.tri-c.edu/programs/nursing, or via email at nursing@tri-c.edu. Potential applicants will receive written notification regarding eligibility for the program.

7. A background check (finger printing and court search) must be completed no sooner than months prior to the start of your program and no later than eight-weeks prior to the start of your program. Go to www.tri-c.edu/programs/nursing for additional information.

Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

All courses required for the Nursing programs MUST have a traditional letter grade, including the admissions requirements. The P/NP grading option will NOT be accepted by the Nursing programs.

Misdemeanors and Felonies

The Ohio Board of Nursing frequently receives calls from prospective students, school officials and the Bureau of Vocational Rehabilitation Services regarding whether the Board will permit a person who has a prior record of misdemeanors and/or felonies to sit for the licensure examination or become licensed. The Board of Nursing has no statutory authority to advise as to whether an individual will be permitted to take the licensure examination or be able to be licensed until the individual actually applies to the Board for licensure by examination (Ohio Board of Nursing [9/23/98]. Requirements for Section 5 of the Application for Licensure as a Nurse).

Felony Preclusion Bill

The Felony Preclusion Bill, signed by the Governor in April 2002, is an initiative to identify applicants for licensure with felony convictions. The Ohio Board of Nursing has the authority in this law to refuse to grant licensure to applicants with any of the felony convictions specified in the law. The egregious felonies listed in the bill include: aggravated murder, robbery, and aggravated burglary. The law requires a criminal records check for new applicants for licensure.

Required Criminal Background check (BCI)

All students enrolled in Health Career and Nursing programs requiring off-campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Students returning to a Health Career program after one year of absence will need to complete another BCI. Students with a BCI record are not guaranteed acceptance into a clinical site, acceptance by their professional licensure/registration board, or employment in a health care field. Due to the increased rise in patient identity theft, students with a convicted felony for forgery will not be accepted into a health career program. Log onto www.tri-c.edu/nursing for further information. Reports from the background checks will be sent to the Dean of Nursing. Please be assured that this information will be kept confidential.

Transition to New Math Curriculum

In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College's mathematics curriculum, the following "grandfathering" time periods have been established:

- For Graduation: MATH-1141, MATH-1200, & MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College's Math Requirement for graduation through Summer 2021.

- For Admission to Selective Admission Programs: For students admitted to begin these programs prior to Fall 2019, MATH-1141, MATH-1200 or MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

Definition of Eligibility

Eligibility for a specific course may be demonstrated by any of the following:

a. Completion of Tri-C’s placement test with a score appropriate for the specific course listed; OR

b. Completion of the prerequisite for the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university); OR

c. Completion of the course listed with a grade of “C” or higher (including equivalent courses transferred in from another college or university).

Quarter Courses

Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree program.

Cancer Registrar

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<th>Credit Hours</th>
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<td>HIM-2500</td>
<td>Introduction to Cancer Registry and Disease Management</td>
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<tr>
<td>HIM-2510</td>
<td>The Cancer Disease Process and Management</td>
<td>3</td>
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<tr>
<td>HIM-2520</td>
<td>Oncology Coding and Staging</td>
<td>3</td>
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</table>
HIM-2530  Oncology Treatment and Coding  3
HIM-2540  Abstracting Principles and Methodologies for Oncology  3
HIM-2550  Database Analytics, Quality and Tracking  3
HIM-2560  Oncology Database and Manuals  3
HIM-2870  Clinical Professional Practice Experience for Cancer Registry  2

Degrees and Certificates
- Health Information Management Technology (p. 304), Associate of Applied Science (p. 304)

Dental Hygiene

<table>
<thead>
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<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>PSY-1010</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<td>DENT-1300</td>
<td>Preventive Oral Health Services I</td>
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<td>DENT-1311</td>
<td>Dental Anatomy, Histology &amp; Embryology</td>
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<td>DENT-1320</td>
<td>Dental Hygiene Fundamentals</td>
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<td>DENT-1400</td>
<td>Preventive Oral Health Services II</td>
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<td>DENT-1410</td>
<td>Current Concepts in Dental Materials</td>
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<td>Periodontics</td>
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<td>Head and Neck Anatomy</td>
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<td>Pharmacology and Therapeutics</td>
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<td>DENT-2340</td>
<td>Community Oral Health I</td>
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<td>Nutrition for Dental Hygiene 3</td>
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<td>Preventive Oral Health Services IV</td>
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<td>DENT-2990</td>
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Diagnostic Medical Sonography

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<td>DMS-1303</td>
<td>Introduction to Sonography</td>
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<td>Introduction to Sonographic Scanning</td>
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<td>DMS-1351</td>
<td>Patient Care Skills</td>
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<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
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<td>Introduction to Medical Terminology 2</td>
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<td>Echocardiography I (Option A)</td>
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<td>PSY-1060</td>
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<td>Select one of the following:</td>
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<td>DMS-2602</td>
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<td>Cardiac Diagnostic Procedures</td>
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<td>DMS-235A</td>
<td>Sonographic Principles, Performance, and Safety</td>
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DMS-2940  Field Experience III  3  
DMS-2985  Physics Review  1  
DMS-2991  Sonography Capstone  1  

Select one of the following:

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<td>Specialty Registry Review</td>
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<td>HTEC-1110</td>
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<tr>
<td>DMS-2650</td>
<td>Pediatric Cardiac Sonography (Option A)</td>
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<tr>
<td>DMS-2760</td>
<td>Transcranial Doppler Sonography (Option B)</td>
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1  MATH-1530 College Algebra or higher will be accepted in place of MATH-1410 Elementary Probability and Statistics I.  
2  MA-1020 Medical Terminology I will be accepted in place of MA-1010 Introduction to Medical Terminology.  
3  Course selection can only be used once toward a graduation requirement.  
4  PHIL-2050 Bioethics will be accepted in lieu of HTEC-1110 Ethics for Health Care Professionals.

### Options

**A) Echocardiography Option**

Take the following courses to complete Option A:

<table>
<thead>
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<tbody>
<tr>
<td>DMS-1602</td>
<td>Echocardiography I</td>
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<td>Echocardiography II</td>
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<td>Pediatric Cardiac Sonography</td>
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Total Credit Hours 62-63

**B) Vascular Option**

Take the following courses to complete Option B:

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<td>DMS-2702</td>
<td>Vascular Sonography II</td>
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<td>DMS-2760</td>
<td>Transcranial Doppler Sonography</td>
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<td>Additional program courses</td>
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Total Credit Hours 60-61

### Technical Electives

Select from the following courses to fulfill DMS elective option:

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<tbody>
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<td>DMS-1381</td>
<td>Cardiac Diagnostic Procedures</td>
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<tr>
<td>DMS-2330</td>
<td>Sonographic Pathology</td>
<td>3</td>
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<td>DMS-2450</td>
<td>Breast Sonography</td>
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<td>DMS-2650</td>
<td>Pediatric Cardiac Sonography</td>
<td>3</td>
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<tr>
<td>DMS-2750</td>
<td>Principles of Vascular Imaging for Abdomen and Cardiac Sonographers</td>
<td>3</td>
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</table>

DMS-2960  Supplemental Field Experience  2  
DMS-2983  Supplemental Specialty Registry Review  1

### Degrees and Certificates

- Diagnostic Medical Sonography (General Sonography), Associate of Applied Science (p. 263)

**Diagnostic Medical Sonography (General Sonography)**

<table>
<thead>
<tr>
<th>Code</th>
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<td>Anatomy and Physiology I</td>
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<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>DMS-1071</td>
<td>Concepts of Physics in Diagnostic Sonography</td>
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<td>DMS-1303</td>
<td>Introduction to Sonography</td>
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<td>DMS-1320</td>
<td>Introduction to Sonographic Scanning</td>
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<td>DMS-1351</td>
<td>Patient Care Skills</td>
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<tr>
<td>MA-1410</td>
<td>Elementary Probability and Statistics I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>DMS-1500</td>
<td>Obstetrical Sonography</td>
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<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
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Select one of the following:

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<td>DMS-2401</td>
<td>Abdominal Sonography II</td>
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Select one of the following:

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<td>Honors College Composition II</td>
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<td>DMS-235A</td>
<td>Sonographic Principles, Performance, and Safety</td>
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<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
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<td>DMS-2940</td>
<td>Field Experience III</td>
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<td>DMS-2985</td>
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<td>DMS-2991</td>
<td>Sonography Capstone</td>
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<td>DMS-2950</td>
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<td>Ethics for Health Care Professionals</td>
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1  MATH-1530 College Algebra or higher will be accepted in place of MATH-1410 Elementary Probability and Statistics I.
Electives

Technical Electives
Select from the following courses to fulfill DMS elective option:

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<td>Sonographic Pathology</td>
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<td>Pediatric Cardiac Sonography</td>
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<tr>
<td>DMS-2750</td>
<td>Principles of Vascular Imaging for Abdomen and Cardiac Sonographers</td>
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Degrees and Certificates

- Diagnostic Medical Sonography, Associate of Applied Science (p. 265)

Dietetic Technology

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<td>BIO-2341</td>
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<td>DIET-1200</td>
<td>Basic Nutrition</td>
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<td>DIET-1310</td>
<td>Introduction to Dietetics</td>
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<td>DIET-1320</td>
<td>Nutrition Applications</td>
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<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
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<td>Contemporary Mathematics (or higher)</td>
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<td>DIET-1580</td>
<td>Cost Control Procedures</td>
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<td>Purchasing Procedures</td>
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<td>DIET-1600</td>
<td>Introduction to Supervision</td>
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<td>DIET-1850</td>
<td>Food and Nutrition Systems Practicum</td>
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<td>Medical Nutrition Therapy I</td>
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<td>Life Cycle Nutrition - Pregnancy and Lactation</td>
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<td>Life Cycle Nutrition - Nutrition for Children</td>
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<td>Life Cycle Nutrition - Nutrition through Adulthood</td>
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<td>Community Nutrition Practicum</td>
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<td>DIET-2311</td>
<td>Medical Nutrition Therapy II</td>
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<td>Medical Nutrition Therapy III</td>
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<td>DIET-2501</td>
<td>Nutrition Application in Long Term Care</td>
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<td>DIET-2850</td>
<td>Medical Nutrition Care Practicum</td>
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<td>Geriatric Nutrition Practicum</td>
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Electroneurodiagnostic Technology

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<td>END-1300</td>
<td>Introduction to Electroneurodiagnostic Technology</td>
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<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
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<td>Introduction to Electroencephalography (EEG)</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>END-1450</td>
<td>Intermediate Electroencephalography (EEG)</td>
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<td>Basic Evoked Potentials</td>
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<td>END-1911</td>
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<tr>
<td>END-2400</td>
<td>Intraoperative Monitoring for Electroneurodiagnostic Technologists</td>
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<td>END-2451</td>
<td>Neonatal/Pediatric Electroencephalography</td>
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<td>END Directed Practice II</td>
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<td>Nerve Conduction Studies</td>
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<td>Neurophysiology of Electroencephalography</td>
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<td>Intermediate Intraoperative Monitoring</td>
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<td>END Directed Practice III</td>
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Electroneurodiagnostic Technology with a concentration in Polysomnography, Associate of Applied Science (p. 279)

**Electroneurodiagnostic Technology (Polysomnography)**

<table>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>END-1300</td>
<td>Introduction to Electroneurodiagnostic Technology</td>
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<tr>
<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology (^4)</td>
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<tr>
<td>END-2412</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders (^8)</td>
<td>2</td>
</tr>
<tr>
<td>END-2520</td>
<td>Intermediate Polysomnography (^9,13)</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry may be taken in place of BIO-1100 Introduction to Biological Chemistry.

\(^2\) Excludes developmental education, ENG-1001 Intensive College Reading & Writing, and English as a Second Language courses.

\(^3\) MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics.

\(^4\) MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1141, MATH-1270, and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.

\(^5\) MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics or higher became a program admission requirement effective Fall 2016. MATH-1141 or higher completed with a grade of "C" or higher prior to Fall 2016 will be accepted in place of MATH-1240 through Fall 2019.

\(^6\) BIO-2340, or BIO-234A and BIO-234B, will be accepted in place of BIO-2341.

\(^7\) ENDS-2411 will be accepted in place of END-2411.

\(^8\) BIO-2340, or BIO-234A and BIO-234B, will be accepted in place of BIO-2341.

\(^9\) With a grade of "C" or higher.

\(^10\) Students with the RPSCG credential may qualify for a waiver or comparable credit for END-2510, END 2520, END-2530, and END-2915. See Program Director for more information on applying for a waiver or comparable credit.

Electroneurodiagnostic Technology, Associate of Applied Science (p. 281)

**Emergency Medical Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I (^1)</td>
<td>4</td>
</tr>
<tr>
<td>EMT-1302</td>
<td>Emergency Medical Technician - Basic</td>
<td>6</td>
</tr>
<tr>
<td>EMT-130L</td>
<td>EMT Basic Practical Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology (^2)</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (^3)</td>
<td>3</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
</tbody>
</table>
Select one of the following:

- MATH-1240
- EHST-1310
- MATH-1240

Select one of the following:

- PSY-1010
- PSY-101H
- EHST-2991
- EHST-2390
- EHST-2360

Select one of the following:

- EMT-2371
- Paramedic Capstone Course

1. Requires passing Biology Placement Test or completion of BIO-1100 Introduction to Biological Chemistry with a “C” or higher.
2. MA-1020 Medical Terminology I will be accepted in place of MA-1010 Introduction to Medical Terminology.
3. Nursing Transfer or CSU BA in Public Safety Management (PSM) Transfer consider MATH-1240 Contemporary Mathematics or MATH-1410 Elementary Probability and Statistics I.
4. Consecutive eight week course.

**Related Degrees and Certificates**

- Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)
- Paramedic, Certificate of Proficiency (p. 378)
- Emergency Medical Technology, Associate of Applied Science (p. 285)

**Degrees and Certificates**

- Fire - Emergency Medical Services, Associate of Applied Science (p. 294)

**Training and Credentials**

- Advanced EMS Training (p. 183)

**Environmental, Health and Safety Technology**

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

**Note:** Select option (a) or (b) before beginning this program.

**Code** | **Title** | **Credit Hours**
---|---|---
EHST-2330 | Paramedic Theory I ⁴ | 6
EHST-2350 | Paramedic Theory III ⁴ | 6
Select one of the following:

- PSY-1010 | General Psychology
- PSY-101H | Honors General Psychology
- EHST-2340 | Paramedic Theory II ⁴ | 6
- EHST-2360 | Paramedic Theory IV ⁴ | 6

Select one of the following:

- EMT-2371 | Paramedic Capstone Course

1. Requires passing Biology Placement Test or completion of BIO-1100 Introduction to Biological Chemistry with a “C” or higher.
2. MA-1020 Medical Terminology I will be accepted in place of MA-1010 Introduction to Medical Terminology.
3. Nursing Transfer or CSU BA in Public Safety Management (PSM) Transfer consider MATH-1240 Contemporary Mathematics or MATH-1410 Elementary Probability and Statistics I.
4. Consecutive eight week course.

**Train the Credentials**

- Fire - Emergency Medical Services, Associate of Applied Science (p. 294)

**Environmental, Health and Safety Technology**

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

**Note:** Select option (a) or (b) before beginning this program.

**Code** | **Title** | **Credit Hours**
---|---|---
EHST-1351 | Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR |
DEGR-XXXX | General Elective (See list below) |
Select one of the following:

- BIO-1050 | Human Biology |
- & BIO-105L | Human Biology Laboratory |
- BIO-1060 | Environment, Ecology, and Evolution |
- & BIO-106L | Environment, Ecology, & Evolution Laboratory |

Select one of the following:

- EHST-2352 | Evacuation and Emergency Planning |
- EHST-1330 | Hazardous Waste Operations and Emergency Response (Option B) |

Select one of the following:

- BADM-2330 | Human Resource Management ((Option A)) |
- PSY-1050 | Introduction to Industrial/Organizational Psychology ((Option B)) |
- ESCI-1410 | Physical Geology |
- & ESCI-141L | and Lab in Physical Geology (Option B) |

Select one of the following:

- COMM-1000 | Fundamentals of Interpersonal Communication |
- COMM-1010 | Fundamentals of Speech Communication |
- COMM-101H | Honors Speech Communication |
- EHST-2390 | Solid and Hazardous Waste Management |
- EHST-2941 | Field Experience |
- EHST-2991 | Professional Practice |
- DEGR-xxxx | General Elective course (See Recommended List Below) |

Select one of the following:

- EHST-2221 | Introduction to Safety and Health Management |
- EHST-2380 | Risk Assessment |

Select one of the following:

- ENG-1020 | College Composition II |
- ENG-102H | Honors College Composition II |
- ENG-2151 | Technical Writing |

1. MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.
2. EHST-135A Safety and Health in the Workplace: OSHA 30 General Industry and EHST-135B Safety and Health in the Workplace OSHA 10 Construction together equal EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR. Course contains embedded training modules and issues training certificates independent of program.
Options

(A) Option A (Environmental, Health and Safety Management)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1360</td>
<td>Fundamentals of OSHA Compliance</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2352</td>
<td>Evacuation and Emergency Planning</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2221</td>
<td>Introduction to Safety and Health Management</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-2330 Human Resource Management
- PSY-1050 Introduction to Industrial/Organizational Psychology

Additional program courses 52-55

Total Credit Hours 61-64

(B) Option B (Environmental Field Technology)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response</td>
<td>2</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</td>
</tr>
<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional program courses 52-55

Total Credit Hours 60-63

Electives

Recommended for students planning to transfer into a four year degree program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1510</td>
<td>Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>Honors General Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-130L</td>
<td>General Chemistry Laboratory I</td>
<td>1</td>
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<tr>
<td>CHEM-1310</td>
<td>General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-131H</td>
<td>Honors General Chemistry II</td>
<td>5</td>
</tr>
</tbody>
</table>

Recommended electives for students pursuing Option A: Safety Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1460</td>
<td>Workers' Compensation Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2330</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Recommended electives for students pursuing Option B: Environmental Field Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>or PST-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2150</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2210</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-151L</td>
<td>Lab in Historical Geology</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1510</td>
<td>Historical Geology</td>
<td>3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates

- Environmental, Health and Safety Technology, Associate of Applied Science (p. 288)
- Environmental, Health and Safety Technology, Post-Degree Professional Certificate (p. 290)

Training and Credentials

- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)
### Fire-Emergency Medical Services

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EMT-1320</td>
<td>Heavy Rescue</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>EMT-1330</td>
<td>Defensive Driving - EMT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>FIRE-1100</td>
<td>Principles of Emergency Services</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>FIRE-1200</td>
<td>Principles of Fire and Emergency Services</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>FIRE-1500</td>
<td>Fire Behavior and Combustion</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>FIRE-2321</td>
<td>Fire Protection Systems</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>EMT-1302</td>
<td>Emergency Medical Technician - Basic</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>EMT-130L</td>
<td>EMT Basic Practical Lab</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EMT-1401</td>
<td>Anatomy &amp; Physiology for Paramedics</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:  

- ENG-1010 College Composition I  
- ENG-101H Honors College Composition I  
- EMT-2330 Paramedic Theory I  
- EMT-2350 Paramedic Theory III  
- MATH-1xxx 1000-level MATH course or higher (p. 32)  
- EMT-2340 Paramedic Theory II  
- EMT-2360 Paramedic Theory IV  

Select one of the following:  

- ENG-1020 College Composition II  
- ENG-102H Honors College Composition II  
- COMM-1010 Fundamentals of Speech Communication  
- COMM-101H Honors Speech Communication  
- EMT-2371 Paramedic Capstone Course

Select one of the following:  

- POL-1010 American National Government  
- PSY-1010 General Psychology  
- PSY-101H Honors General Psychology  
- SOC-1010 Introductory Sociology  
- SOC-101H Honors Introductory Sociology  
- UST-1010 Introduction to Urban Studies

1. BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics.  
2. Consecutive eight-week course.

### Related Degrees and Certificates

- Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)  
- Paramedic, Certificate of Proficiency (p. 378)  
- Fire - Emergency Medical Services, Associate of Applied Science (p. 294)

### Degrees and Certificates

- Emergency Medical Technology (p. 285)

---

### Training and Credentials

- Fire Training Academy (p. 296)

### Health Care (Workforce Training Programs)

### Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)  
- State-Tested Nursing Assistant (Accelerated) (p. 411)  
- Comprehensive Professional Medical Coding (Classroom) (p. 242)  
- Comprehensive Professional Medical Coding (Online) (p. 243)  
- Community Health Worker (p. 241)  
- Comprehensive Patient Access Specialist (p. 241)

### Health Information Management Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
<th>Hours</th>
</tr>
</thead>
</table>
| BIO-2331 | Anatomy and Physiology I  
| HTCC-1120 | Critical Thinking in Healthcare  
| MA-1010  | Introduction to Medical Terminology  
| Select one of the following:  
- ENG-1010 College Composition I  
- ENG-101H Honors College Composition I  
| Select one of the following:  
- IT-1090 Computer Applications  
- IT-109H Honors Computer Applications  
| BIO-2341 | Anatomy and Physiology II  
| HIM-1301 | Introduction to Health Information Management  
| HIM-1311 | Legal Aspects of Health Care  
| HIM-1401 | Systems in Healthcare Delivery  
| MATH-1xxx 1000-level MATH course or higher (p. 32)  
| BIO-2600 | Pathophysiology  
| HIM-1411 | Healthcare Statistical Applications & Research  
| HIM-1423 | Health Data Documentation, Sources and Classification Systems  
| HIM-1432 | Computer Systems in Health Information Management  
| HIM-2160 | Coding with ICD-10-CM  
| Select one of the following:  
- PSY-1010 General Psychology  
- PSY-101H Honors General Psychology  
| HIM-2130 | Coding with CPT (Current Procedural Terminology)  
| HIM-2410 | Management Practices in Health Information

---

1. BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics.
Related Degrees and Certificates

- Health Unit Coordinator, Short-Term Certificate (p. 306)
- Medical Billing Specialist, Short-Term Certificate (p. 351)
- Health Information Management Technology, Associate of Applied Science (p. 304)
- Cancer Registrar, Post-Degree Professional Certificate (p. 222)

Degrees and Certificates

- Cancer Registrar, Post-Degree Professional Certificate (p. 222)

Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Comprehensive Professional Medical Coding (Classroom) (p. 242)
- Comprehensive Professional Medical Coding (Online) (p. 243)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Human Services

Note: Select option (a) or (b) before beginning this program.

**Code** | **Title** | **Credit Hours**
--- | --- | ---
HS-1101 | Foundation of Substance Abuse, Addiction, and Group Work | 4
HS-1300 | Introduction to Human Services | 3
Select one of the following: | | |
ENG-1010 | College Composition I | 3
ENG-101H | Honors College Composition I | Select one of the following: | | |
PSY-1010 | General Psychology | 3
PSY-101H | Honors General Psychology | HS-1850 | Introduction to Human Services Principles and Practices | 5
PHIL-1000 | Critical Thinking | 3
Select one of the following: | | |
ENG-1020 | College Composition II | 3
ENG-102H | Honors College Composition II | Select one of the following options: | | |
| | | 3-4

**Option A**

HS-1200 | Treatment Modalities and Diversity Issues in Chemical Dependency & HS-1210 | Prevention and Chemical Dependency (Option A)

**Option B**

HS-1220 | Diagnostic Tools and Legal Considerations (Option B)
HS-2600 | Systems Approach to Case Management | 4
HS-2850 | Human Services Principles and Practices I | 5
HS-1120 | Suicide Prevention & Intervention | 2
Select one of the following options:

**Option A**

HS-2200 | Ethics in Chemical Dependency (Option A)

**Option B**

HS-1110 | Crisis Intervention and Child Abuse Issues & HS-2300 | Family Theory and Services
Select one of the following:

COMM-1010 | Fundamentals of Speech Communication |
COMM-101H | Honors Speech Communication |
BIO-1050 | Human Biology | 3
BIO-105L | Human Biology Laboratory | 1
HS-2860 | Human Services Principles and Practices II | 3
HS-2990 | Human Services Capstone | 2
MATH-1xxx | 1000-level MATH course or higher | 3
Select one of the following:

PSY-2020 | Life Span Development |
PSY-202H | Honors Life Span Development |

For students planning to transfer, highly recommend MATH-1410 Elementary Probability and Statistics I.

Options

(A) Alcohol/Chemical Dependency

**Code** | **Title** | **Credit Hours**
--- | --- | ---
HS-1200 | Treatment Modalities and Diversity Issues in Chemical Dependency | 4
HS-1210 | Prevention and Chemical Dependency | 2
HS-2200 | Ethics in Chemical Dependency | 3
Additional program courses | 54
Total Credit Hours | 63

(B) Generalist Option

**Code** | **Title** | **Credit Hours**
--- | --- | ---
HS-1110 | Crisis Intervention and Child Abuse Issues | 3
HS-1220 | Diagnostic Tools and Legal Considerations | 4
HS-2300 | Family Theory and Services | 4
Additional program courses | 54
Total Credit Hours | 65

1. For students planning to transfer, highly recommend MATH-1410 Elementary Probability and Statistics I.
Related Degrees and Certificates

• Chemical Dependency, Short-Term Certificate (p. 231)
• Human Services, Associate of Applied Science (p. 310)

Laboratory Phlebotomy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050</td>
<td>Human Biology ¹</td>
<td>3</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>MLT-1300</td>
<td>Introduction to Blood Collection ²</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1851</td>
<td>Medical Laboratory Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>MLT-2970</td>
<td>Advanced Phlebotomy ³</td>
<td>1</td>
</tr>
</tbody>
</table>

¹ BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, or BIO-2341 Anatomy and Physiology II, will be accepted in place of BIO-1050 Human Biology.

² Consecutive five or eight-week course.

³ Completed second eight weeks with MLT-1851 Medical Laboratory Practicum I.

Degrees and Certificates

• Medical Laboratory Technology, Associate of Applied Science (p. 352)
• Medical Assisting, Associate of Applied Science (p. 348)

Mammography

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-2610</td>
<td>Introduction to Mammography</td>
<td>1</td>
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<tr>
<td>RADT-2620</td>
<td>Anatomy and Pathology of the Breast</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2630</td>
<td>Positioning Techniques for Breast Imaging</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2640</td>
<td>Physics of Mammography</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2650</td>
<td>Interventional and Special Imaging Procedures</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2660</td>
<td>MQSA and ACR Regulatory Standards</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2670</td>
<td>Mammography Quality Control</td>
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<td>RADT-2930</td>
<td>Mammography Applications</td>
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Degrees and Certificates

• Radiography, Associate of Applied Science (p. 402)

Massage Therapy

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<td>Applied Musculo-Skeletal Anatomy</td>
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<td>Pathology for Massage Therapists</td>
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<td>Functional Assessment in Massage Therapy</td>
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<td>COMM-1000</td>
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<td>MT-2991</td>
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<td>MT-2311</td>
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<td>MT-2201</td>
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Related Degrees and Certificates

• Advanced Massage Therapy, Short-Term Certificate (p. 183)
• Massage Therapy, Certificate of Proficiency (p. 340)
• Massage Therapy, Associate of Applied Science (p. 338)
• Massage Therapy, Post-Degree Professional Certificate (p. 341)

Medical Assisting

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

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<td>MATH-1100</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology ²</td>
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BIO-105L Human Biology Laboratory 2
MA-1321 Medical Office Laboratory Procedures
MA-132L Medical Office Laboratory Procedures
MA-1402 Basic Clinical Medical Assisting
MA-140L Basic Clinical Medical Assisting Lab
MA-1503 Administrative Procedures for the Medical Office
MA-150L Administrative Procedures Laboratory
DIET-1200 Basic Nutrition
EMT-1310 Cardiopulmonary Resuscitation
MA-2110 Reimbursement for Physician Services
MA-2413 Advanced Clinical Medical Assisting
MA-241L Advanced Clinical Assisting Lab
MA-2860 Medical Assisting Practicum
MA-2980 Medical Assisting Seminar
Select one of the following:

ENG-102H Honors College Composition II
ENG-1020 College Composition II
HIM-1112 Physician Office Coding
HTEC-1120 Critical Thinking in Healthcare
Select one of the following:

IT-1090 Computer Applications
IT-109H Honors Computer Applications
Select one of the following:

PSY-101H Honors General Psychology
PSY-1010 General Psychology
BADM-1301 Small Business Management
MLT-1300 Introduction to Blood Collection
MLT-1851 Medical Laboratory Practicum I
MLT-2970 Advanced Phlebotomy
COMM-1000 Fundamentals of Interpersonal Communication

Medical Laboratory Technology

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<td>Medical Terminology I</td>
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<td>MATH-1410</td>
<td>Elementary Probability and Statistics I 2</td>
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<td>MLT-1000</td>
<td>Introduction to Medical Laboratory Technology</td>
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<td>MLT-1351 Problem Solving Techniques for the Medical Laboratory</td>
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<td>MLT-1491 Urinalysis and Body Fluids</td>
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<td>MLT-2461 Hematology</td>
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<td>BIO-2500 Microbiology</td>
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<td>MLT-2471 Immunohematology &amp; Serology</td>
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<td>MLT-2980 Professional Development and Life Skills</td>
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1 Enrollment in CHEM-1020 Introduction to Organic Chemistry and Biochemistry requires students to have either achieved a sufficient score on Chemistry Placement Test or completed CHEM-1010 Introduction to Inorganic Chemistry with "C" or higher.

2 Students who do not place into MATH-1410 Elementary Probability and Statistics I on assessment test must take MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

3 Enrollment in BIO-2331 Anatomy and Physiology I requires either appropriate placement score on Biology Placement Test or a grade of "C" or higher in BIO-1100 Introduction to Biological Chemistry.

Related Degrees and Certificates
- Laboratory Phlebotomy, Short-Term Certificate (p. 325)
- Medical Assisting, Certificate of Proficiency (p. 350)
- Medical Assisting, Associate of Applied Science (p. 348)

Degrees and Certificates
- Medical Administrative Specialist, Certificate of Proficiency (p. 348)
- Medical Billing Specialist, Short-Term Certificate (p. 351)

Training and Credentials
- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Degrees and Certificates
- Laboratory Phlebotomy, Short-Term Certificate (p. 325)

Nuclear Medicine

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<tr>
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<td>PHYS-1050</td>
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<td>NMED-1200</td>
<td>Radiation Safety &amp; Biology</td>
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<td>NMED-1301</td>
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<td>NMED-1603</td>
<td>Nuclear Radiopharmacy and Pharmacology</td>
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<td>Nuclear Medicine Instrumentation</td>
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<td>Patient Care for Nuclear Medicine</td>
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<td>NMED-1770</td>
<td>Immunology and Pathophysiology for Sectional Imaging</td>
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<td>NMED-1800</td>
<td>Sectional Anatomy for Advanced Molecular Imaging</td>
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<td>NMED-230L</td>
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<td>NMED-2600</td>
<td>Molecular and Fusion Imaging</td>
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<td>NMED-2700</td>
<td>Nuclear Medicine Research Methods</td>
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<td>Nuclear Medicine Field Experience III</td>
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Select one of the following:

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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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1. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.
2. PHYS-1210 College Physics I will be accepted in place of PHYS-1050 Everyday Physics.
3. Students must earn a “C” or higher in all Nuclear Medicine courses to be awarded the AAS degree in Nuclear Medicine Technology.

**Degrees and Certificates**

- Nursing (Accelerated Track), Associate of Applied Science (p. 359)
- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)
- Practical Nursing, Certificate of Proficiency (p. 394)

**Training and Credentials**

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

**Nursing (Accelerated Track)**

<table>
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<tr>
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<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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BIO-2500 Microbiology 4
MATH-1240 Contemporary Mathematics (or higher) 3 3
Select one of the following: 3-8
BIO-1100 Introduction to Biological Chemistry
CHEM-1010/1020 Introduction to Inorganic Chemistry 1

Select one of the following: 3
ENG-1010 College Composition I 2
ENG-101H Honors College Composition I

Select one of the following: 3
PSY-1010 General Psychology
PSY-101H Honors General Psychology
NURS-1300 Health Assessment 2
NURS-1451 Self-Care Needs: Adult Life Span 7

Select one of the following: 4
PSY-2020 Life Span Development
PSY-202H Honors Life Span Development
NURS-1601 Health Deviations I 7
NURS-1701 Community/Home Nursing 1
NURS-2301 Specialized Health Care Needs 8

Select one of the following: 3
ENG-1020 College Composition II
ENG-102H Honors College Composition II
NURS-2501 Health Deviations II 8

1 CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Recommended for students planning to transfer to a BSN program. Students who transfer credits for ENG-1020 College Composition II with a grade of “C” or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

2 Students who transfer credits for ENG-1020 College Composition II with a grade of “C” or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

3 MATH-1800 Special Topics in Mathematics - MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

Degrees and Certificates

• Nursing, Associate of Applied Science (p. 363)
• Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)

Nursing (ACCESS LPN to RN Track)

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<td>NURS-160A</td>
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<td>NURS-160D</td>
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1 CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Recommended for students planning to transfer to a BSN program.

2 Students who transfer credits for ENG-1020 College Composition II with a grade of “C” or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

3 MATH-1800 Special Topics in Mathematics - MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

4 After successful completion of NURS-160A Access to Registered Nursing & while enrolled in NURS-160D Health Deviations I for LPNs, students will be required to complete the Award of Comparable Credit Assessment of Prior Learning form requesting By-Pass credit for NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span, and NURS-1601 Health Deviations I.

5 NURS-160A Access to Registered Nursing is a bridge course that replaces NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span, and NURS-1601 Health Deviations I.

6 After successful completion of NURS-160A Access to Registered Nursing while enrolled in NURS-160D Health Deviations I for LPNs, students will be required to complete the Award of Comparable Credit Assessment of Prior Learning form requesting By-Pass credit for NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span & NURS-1601 Health Deviations I (16 Cr) or if eligible apply for transfer of credit for NURS-1300, NURS-1451 & NURS-1601 through the Career Technical Assurance Guide (CTAG) process. Awarded comparable or CTAG credit will not affect a student’s GPA. Students must maintain term enrollment in order to receive credit.

7 LPN’s accepted into Cuyahoga Community College Nursing Program are required to take NURS-160D Health Deviations I for LPNs prior to progressing to NURS-2301 Specialized Health Care Needs. PSY-2020 Life Span Development, BIO-2331 Anatomy and Physiology I, BIO-2341 Anatomy and Physiology II, & BIO-2500 Microbiology Must also be successfully completed with a grade of “C” or higher prior to enrolling in NURS-2301 Specialized Health Care Needs.

Degrees and Certificates

• Practical Nursing, Certificate of Proficiency (p. 394)

Occupational Therapy Assistant Technology

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
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<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
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</table>
OTAT-1300 Occupational Therapy Principles 2
OTAT-1310 Task Analysis 2
Select one of the following: 3
   ENG-1010 College Composition I
   ENG-101H Honors College Composition I
   MATH-1xxx 1000-level MATH course or higher (p. 32) 3
OTAT-1320 Fundamentals of Developmental Disabilities 2
OTAT-1330 Techniques in Developmental Disabilities 3
OTAT-1850 Practicum I 2
PTAT-1300 Functional Anatomy 4
Select one of the following: 3
   PSY-1010 General Psychology
   PSY-101H Honors General Psychology
   ENG-1020 College Composition II
   ENG-102H Honors College Composition II

Optical Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
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<td>Anatomy and Physiology of the Eye</td>
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<td>1000-level MATH course or higher (p. 32)</td>
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<td>OPT-1310</td>
<td>Theoretical Optics I</td>
<td>2</td>
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<tr>
<td>OPT-1510</td>
<td>Optical Dispensing I</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1400</td>
<td>Introduction to Fabrication Principles</td>
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</tr>
<tr>
<td>OPT-1411</td>
<td>Basic Spectacle Fabrication</td>
<td>1</td>
</tr>
<tr>
<td>OPT-1610</td>
<td>Contact Lens I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1320</td>
<td>Theoretical Optics II</td>
<td>2</td>
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<tr>
<td>OPT-1421</td>
<td>Advanced Spectacle Fabrication</td>
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<tr>
<td>OPT-1520</td>
<td>Optical Dispensing II</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1621</td>
<td>Contact Lens II</td>
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<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
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Select one of the following: 3

Optical Technology

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<tr>
<td>OPT-1710</td>
<td>Introduction to Patient Care</td>
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<tr>
<td>OPT-2501</td>
<td>Optical Business</td>
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<tr>
<td>OPT-2550</td>
<td>Advanced Optical Dispensing Lab</td>
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<tr>
<td>OPT-2650</td>
<td>License Review Spectacle</td>
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<td>OPT-2940</td>
<td>Optical Field Experience I</td>
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<td>OPT-2971</td>
<td>Optical Field Experience Seminar I</td>
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<td>OPT-2660</td>
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<td>Refractometry</td>
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<td>Optical Field Experience II</td>
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<td>OPT-2981</td>
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<td></td>
<td>Communications requirement (p. 31) 1</td>
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</table>

Select one of the following: 3
   PHIL-2050 Bioethics
   PHIL-205H Honors Bioethics

1 Highly recommend ENG-1020 College Composition II or ENG-2151 Technical Writing.

Related Degrees and Certificates

- Ophthalmic Medical Assisting, Short-Term Certificate (p. 373)
- Optical Technology, Certificate of Proficiency (p. 374)
- Optical Technology, Associate of Applied Science (p. 373)

Patient Navigator

Credits from the Patient Navigator Certificate can be applied towards the elective credits requirement for the Associate of Arts or the Associate of Science Degree.

<table>
<thead>
<tr>
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<th>Credit Hours</th>
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<tr>
<td>MA-2600</td>
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<td>MA-2610</td>
<td>Advanced Health Care Delivery Coordination</td>
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<td>MA-2620</td>
<td>Patient-Centered Medical Home</td>
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<tr>
<td>MA-2840</td>
<td>Patient Navigator Practicum</td>
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</table>

Degrees and Certificates

- Medical Assisting, Associate of Applied Science degree (p. 348)

Pharmacy Technology

<table>
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<th>Credit Hours</th>
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<td>BIO-1100</td>
<td>Introduction to Biological Chemistry 1</td>
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</table>

Select one of the following: 3
   ENG-1010 College Composition I
   ENG-101H Honors College Composition I
   BIO-1050 Human Biology 2 3
   BIO-105L Human Biology Laboratory 1
### Related Degrees and Certificates

- Pharmacy Technician, Certificate of Proficiency (p. 383)
- Pharmacy Technology, Associate of Applied Science (p. 384)

### Physical Therapist Assisting Technology

<table>
<thead>
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<th>Title</th>
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<td>BIO-2331</td>
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<td>HTEC-1000</td>
<td>Introduction to Patient Care</td>
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<td>MA-1020</td>
<td>Medical Terminology I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
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<tr>
<td>PTAT-1100</td>
<td>Introduction to Physical Therapist</td>
<td>2</td>
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<tr>
<td>PTAT-1300</td>
<td>Functional Anatomy</td>
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<tr>
<td>PTAT-1312</td>
<td>Fundamentals of Physical Therapy</td>
<td>3</td>
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<tr>
<td>PTAT-1320</td>
<td>Introduction to Therapeutic Exercise</td>
<td>2</td>
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<tr>
<td>PTAT-1401</td>
<td>Clinical Pathophysiology</td>
<td>2</td>
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<tr>
<td>PTAT-1411</td>
<td>Physical Therapy Procedures</td>
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<td>PTAT-1420</td>
<td>Therapeutic Exercise</td>
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<td>PTAT-2341</td>
<td>Psychosocial issues in Physical Therapy</td>
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<td>ENG-1020</td>
<td>College Composition II</td>
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<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<td>PSY-1010</td>
<td>General Psychology</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<tr>
<td>PTAT-2940</td>
<td>Field Experience 1</td>
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<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare</td>
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<td>HTEC-1610</td>
<td>Introduction to Pharmacology</td>
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<td>PTAT-2200</td>
<td>Physical Therapy in Acute Care Setting</td>
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<tr>
<td>PTAT-2301</td>
<td>Long Term Physical Therapy Rehabilitation</td>
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<td>Pediatric Physical Therapy</td>
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<td>PTAT-2330</td>
<td>Geriatric Physical Therapy</td>
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<tr>
<td>PTAT-2840</td>
<td>Clinical Practicum I</td>
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<tr>
<td>PTAT-2850</td>
<td>Clinical Practicum II</td>
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<tr>
<td>PTAT-2970</td>
<td>Practicum Seminar</td>
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</table>

1. Full-time placement at an off-campus clinical site for five consecutive weeks.
2. Full-time placement at an off-campus clinical site for six consecutive weeks.

### Practical Nursing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-1050</td>
<td>Human Biology 1</td>
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<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<tr>
<td>PNUR-1200</td>
<td>Physical Assessment for the Practical Nurse</td>
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<tr>
<td>PNUR-1210</td>
<td>Fundamentals of Practical Nursing</td>
<td>3</td>
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<tr>
<td>PNUR-1322</td>
<td>Nursing Management of the Adult I</td>
<td>3</td>
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<tr>
<td>PNUR-1330</td>
<td>Nursing Management of Adults II</td>
<td>8</td>
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<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PNUR-1341</td>
<td>Lifespan Nursing for the Practical Nurse</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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</table>
Degrees and Certificates

- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)

Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Radiography

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging ¹</td>
<td>4</td>
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<tr>
<td>DMS-1351</td>
<td>Patient Care Skills</td>
<td>1</td>
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<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher) ²</td>
<td>3</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<tr>
<td>BIO-2200</td>
<td>Radiobiology</td>
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<tr>
<td>RADT-1300</td>
<td>Fundamentals of Radiography</td>
<td>4</td>
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<tr>
<td>RADT-1400</td>
<td>Radiographic Positioning</td>
<td>3</td>
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</table>

Select one of the following:

- RADT-1911 Clinical Radiography I (Option A) ³
- RADT-191S Clinical Radiography I (Option B) ⁴
- RADT-191A Clinical Radiography I-A and Clinical Radiography I-B (Option C)
- RADT-1351 Image Acquisition and Evaluation
- RADT-1410 Intermediate Radiographic Positioning
- RADT-2401 Imaging Systems

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II

Select one of the following:

- RADT-2911 Clinical Radiography II (Option A)
- RADT-291S Clinical Radiography II (Option B)
- RADT-291A/291B Clinical Radiography II-A (Option C)
- PHYS-2250 Radiographic Physics and Quality Control

RADT-2350 Radiographic Pathology 3
RADT-2362 Interventional Radiography and Pharmacology 1

Select one of the following:

- RADT-2921 Clinical Radiography III (Option A)
- RADT-292S Clinical Radiography III (Option B)
- RADT-2921 Clinical Radiography III (Option C)

Options

(A) Fall Start - Daytime Track

Students beginning the program in a fall semester (daytime track) will complete the following clinical courses: RADT-1911 Clinical Radiography I, RADT-2911 Clinical Radiography II and RADT-2921 Clinical Radiography III.

<table>
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<th>Title</th>
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<tr>
<td>RADT-1911</td>
<td>Clinical Radiography I</td>
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<tr>
<td>RADT-2911</td>
<td>Clinical Radiography II</td>
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<tr>
<td>RADT-2921</td>
<td>Clinical Radiography III</td>
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</table>

Additional program courses 45

Total Credit Hours 64

(B) Spring Start - Daytime Track

Students beginning the program in a spring semester (daytime track) will complete the following clinical courses: RADT-191S Clinical Radiography I, RADT-291S Clinical Radiography II and RADT-292S Clinical Radiography III.
### Respiratory Care

<table>
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<td>Introduction to Biological Chemistry ¹</td>
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<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>RESP-1300</td>
<td>Respiratory Care Equipment</td>
<td>4</td>
</tr>
<tr>
<td>RESP-1310</td>
<td>Cardiopulmonary Physiology</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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</tr>
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<td>ENG-102H</td>
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<td>General Psychology</td>
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<td>PSY-101H</td>
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<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>RESP-1320</td>
<td>Acid-Base and Hemodynamics</td>
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<td>RESP-1330</td>
<td>Cardiopulmonary Assessment and Pulmonary Diseases</td>
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<td>RESP-1340</td>
<td>Pharmacology for Respiratory Care</td>
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<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
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<td>PHIL-205H</td>
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<td>RESP-2210</td>
<td>Introduction to Mechanical Ventilation</td>
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<td>RESP-2300</td>
<td>Basic Therapeutic Procedures</td>
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<td>RESP-2940</td>
<td>Respiratory Care Field Experience I</td>
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<td>BIO-2500</td>
<td>Microbiology</td>
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<td>Mechanical Ventilation</td>
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<td>RESP-2320</td>
<td>Pediatric/Neonatal Respiratory Care</td>
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<td>RESP-2330</td>
<td>Respiratory Home Care/Rehabilitation</td>
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<td>RESP-2341</td>
<td>Patient Management Problems</td>
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<tr>
<td>RESP-2960</td>
<td>Respiratory Care Field Experience III</td>
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</table>

¹ CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry.

² Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100 Introduction to Biological Chemistry.

### Degrees and Certificates

- Mammography, Short-Term Certificate (p. 333)

### Sport and Exercise Studies

<table>
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<td>Personal Health Education</td>
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<tr>
<td>SES-1001</td>
<td>Introduction to Sport and Exercise Studies</td>
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<td>SES-1040</td>
<td>Teaching Exercise Training Techniques</td>
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<td>BIO-1050/105L Human Biology</td>
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<td>BIO-1500</td>
<td>Principles of Biology I</td>
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<td>ENG-1010</td>
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<td>SES-1201</td>
<td>Fitness and Wellness Coaching</td>
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<td>SES-2000</td>
<td>Essentials of Sports Injury Care</td>
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<tr>
<td>SES-2310</td>
<td>Advanced Training Concepts and Techniques</td>
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<td>BIO-2331</td>
<td>Anatomy and Physiology I ²</td>
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<td>SES-2010</td>
<td>Exercise and Movement Anatomy</td>
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<tr>
<td>SES-2100</td>
<td>Sport and Exercise Physiology</td>
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<tr>
<td>SES-2410</td>
<td>Exercise Testing and Prescription</td>
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<td>Select one of the following:</td>
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<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II ²</td>
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<td>SES-xxxx</td>
<td>Fitness and Exercise Studies Elective</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
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</tbody>
</table>

³ Requires sufficient score on Mathematics placement test to take this course in the same semester as MATH-1xxx 1000-level MATH course or higher.
Surgical Technology

Surgical Technology, Associate of Applied Science (p. 414)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
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<tbody>
<tr>
<td>BIO-2331</td>
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<td>MA-1020</td>
<td>Medical Terminology I</td>
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<td>Survey of Surgical Technology</td>
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<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>HTEC-1610</td>
<td>Introduction to Pharmacology</td>
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<td>SURT-1300</td>
<td>Introduction to Surgery</td>
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<td>SURT-130L</td>
<td>Surgery Lab</td>
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<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
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<td>SURT-1330</td>
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<td>SURT-1911</td>
<td>Clinical Experience I</td>
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<tr>
<td>SURT-1921</td>
<td>Clinical Experience II</td>
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<td>MA-2010</td>
<td>Medical Terminology II</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<td>Surgical Specialties</td>
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<td>Clinical Experience III</td>
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<td>PHIL-2050</td>
<td>Bioethics</td>
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<td>SURT-2862</td>
<td>Clinical Experience IV</td>
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Surgical Technology Elective

Select from the following courses to fulfill Surgical Technology elective:

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<td>Mathematical Explorations (or higher)</td>
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<tr>
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<td>Sterile Processing Tech I</td>
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<td>SURT-1720</td>
<td>Introduction to Hospital Administration</td>
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<td>SURT-1766</td>
<td>Clinical Experience I</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
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<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
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<td>IT-1090</td>
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<tr>
<td>SURT-1710</td>
<td>Sterile Processing Tech II</td>
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Select one of the following:

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<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
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<td>3</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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</tr>
</tbody>
</table>

**Related Degrees and Certificates**

- Sterile Processing and Distribution Technology, Certificate of Proficiency (p. 413)
- Surgical Technology, Associate of Applied Science (p. 414)

**Degrees and Certificates**

- Sterile Processing and Distribution Technology, Certificate of Proficiency (p. 413)

**Veterinary Technology**

<table>
<thead>
<tr>
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</thead>
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<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>2</td>
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<td>VT-1120</td>
<td>Introduction to Veterinary Technology</td>
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<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
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<tr>
<td>VT-1325</td>
<td>Veterinary Office Applications</td>
<td>2</td>
</tr>
<tr>
<td>VT-1401</td>
<td>Veterinary Science I</td>
<td>4</td>
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<tr>
<td>VT-1521</td>
<td>Veterinary Pathology I</td>
<td>2</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
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<td>VT-1410</td>
<td>Veterinary Science II</td>
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<td>VT-1530</td>
<td>Veterinary Pathology II</td>
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<tr>
<td>VT-1600</td>
<td>Veterinary Surgical Nursing and Assisting</td>
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<td>VT-1700</td>
<td>Veterinary Diagnostic Imaging</td>
<td>3</td>
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<td>VT-2200</td>
<td>Dentistry for Veterinary Technicians</td>
<td>1</td>
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<td>VT-2300</td>
<td>Pharmacology for Veterinary Technicians</td>
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<td>VT-2402</td>
<td>Veterinary Pathology III</td>
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<tr>
<td>VT-2851</td>
<td>Veterinary Practicum and Seminar I</td>
<td>1</td>
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<td>VT-2412</td>
<td>Veterinary Pathology IV</td>
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<tr>
<td>VT-2520</td>
<td>Animal Health and Disease</td>
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<tr>
<td>VT-2610</td>
<td>Veterinary Anesthesia, Anesthesiology &amp; Dental Techniques</td>
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<td>VT-2860</td>
<td>Veterinary Practicum and Seminar II</td>
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<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>COMM-1000</td>
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<td>3</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>VT-2650</td>
<td>Veterinary Emergency and Critical Care</td>
<td>1</td>
</tr>
<tr>
<td>VT-2700</td>
<td>Avian and Exotic Animal Medicine</td>
<td>2</td>
</tr>
<tr>
<td>VT-2940</td>
<td>Veterinary Field Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

**Arts & Humanities/Social & Behavioral Sciences requirement** (p. 33)

1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Must complete BIO-1100 (or CHEM-1010) with a grade of "C" or higher for admission to the Veterinary Technology Program.

2. Must complete MATH-1240 Contemporary Mathematics (or equivalent) with a grade of "C" or higher for the admission to Veterinary Technology program. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1270 taken prior to Fall 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.

3. Must complete ENG-1010 College Composition I with a grade of "C" or higher for Veterinary Technology Program admission.

**Hospitality**

- Event Planning (Professional Development Programs)
- Hospitality Management (Culinary Arts)
- Hospitality Management (Hotel, Destination, and Event Management)
- Hospitality Management (Restaurant/Food Service Management)

**Event Planning (Professional Development Programs)**

**Training and Credentials**

Event Planning (p. 300)

**Hospitality Management (Culinary Art)**

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
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<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
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<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
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<tr>
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<td></td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>VT-2650</td>
<td>Veterinary Emergency and Critical Care</td>
<td>1</td>
</tr>
<tr>
<td>VT-2700</td>
<td>Avian and Exotic Animal Medicine</td>
<td>2</td>
</tr>
<tr>
<td>VT-2940</td>
<td>Veterinary Field Experience</td>
<td>2</td>
</tr>
</tbody>
</table>
Hospitality Management (Hotel, Destination, and Event Management)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
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<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
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<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
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</table>

Select one of the following:

| ENG-1010 | College Composition I                | 3            |
| ENG-101H | Honors College Composition I         | 3            |

Select one of the following:

| IT-1090  | Computer Applications                | 3            |
| IT-109H  | Honors Computer Applications         | 3            |
| ACCT-1020| Applied Accounting                   | 3            |
| HOSP-1481| Housekeeping and Facilities Management | 3         |
| HOSP-1540| Lodging Operations Lab               | 1            |
| HOSP-1580| Front Office Operations              | 2            |

Arts and Humanities (p. 28)

Select one of the following:

| ENG-1020 | College Composition II               | 3            |
| ENG-102H | Honors College Composition II        | 3            |

Related Degrees and Certificates

- Culinarian/Cook, Short-Term Certificate (p. 257)
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 399)
- Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business (p. 307)

Degrees and Certificates

- Hospitality Management with a Concentration in Hotel, Destination, and Event Management, Associate of Applied Business (p. 308)
- Hospitality Management with a Concentration in Restaurant/Food Service Management Associate of Applied Business (p. 309)

Electives

<table>
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<td>HOSP-1730</td>
<td>International Cuisine</td>
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<tr>
<td>HOSP-2550</td>
<td>Baking Production and Sales II</td>
<td>3</td>
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<tr>
<td>HOSP-2750</td>
<td>Culinary Competition</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
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</table>

Select one of the following:

| ENG-1010 | College Composition I                | 3            |
| ENG-101H | Honors College Composition I         | 3            |

Select one of the following:

| IT-1090  | Computer Applications                | 3            |
| IT-109H  | Honors Computer Applications         | 3            |
| ACCT-1020| Applied Accounting                   | 3            |
| HOSP-1481| Housekeeping and Facilities Management | 3         |
| HOSP-1540| Lodging Operations Lab               | 1            |
| HOSP-1580| Front Office Operations              | 2            |

Arts and Humanities (p. 28)

Select one of the following:

| ENG-1020 | College Composition II               | 3            |
| ENG-102H | Honors College Composition II        | 3            |

Related Degrees and Certificates

- Culinarian/Cook, Short-Term Certificate (p. 257)
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 399)
- Hospitality Management with a Concentration in Hotel, Destination & Event Management, Associate of Applied Business (p. 308)
Degrees and Certificates

- Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business (p. 309)
- Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business (p. 307)

Training and Credentials

- Event Planning (p. 300)

Hospitality Management (Restaurant/ Food Service Management)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

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<td>Introduction to the Hospitality Industry</td>
<td>2</td>
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<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
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<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
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<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
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<tr>
<td>HOSP-1360</td>
<td>Fundamentals of Restaurant/Food Service Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
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<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
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</tr>
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<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
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<td>HOSP-1680</td>
<td>Beverage Management</td>
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<td>Restaurant/Food Service Management Field Experience</td>
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<td>1000-level MATH course or higher (p. 28)</td>
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<td>HOSP-1650</td>
<td>Dining Room Operations</td>
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<td>Hospitality Purchasing</td>
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<tr>
<td>HOSP-2360</td>
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<td>HOSP-2371</td>
<td>Restaurant/Foodservice Entrepreneurship</td>
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<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
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<tr>
<td>HOSP-2871</td>
<td>Food &amp; Beverage Management Experience</td>
</tr>
<tr>
<td>Social and Behavioral Science OR Natural/Physical Science Requirements (p. 29)</td>
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</table>

Related Degrees and Certificates

- Culinarian/Cook, Short-Term Certificate (p. 257)
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 399)
- Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business (p. 309)

Humanities, Liberal Arts, Social & Behavioral Sciences

- Associate of Arts Degree/University Transfer
  - Conflict Resolution and Peace Studies
  - Deaf Interpretive Services
  - Early Childhood Education
  - Human Services
  - Paralegal Studies
  - Teacher Education

Associate of Arts Degree/University Transfer

The Associate of Arts degree is a flexible 2 year degree designed for students who want to begin their studies at Tri-C and plan to transfer to a baccalaureate degree-granting college or university for completion of a four-year degree in the Humanities, Liberal Arts, or Social and Behavioral Sciences. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Associate of Arts Degree Requirements (p. 35)

Learn more about transfer opportunities at Tri-C.

Learn more about Humanities, Liberal Arts, and Social and behavioral Science courses offered at Tri-C:

- American Sign Language (p. 432)
- Anthropology (p. 433)
- Chinese (p. 495)
- Communication Studies (p. 501)
- Economics (p. 524)
- Education (p. 525)
- English (p. 536)
- French (p. 553)
- Geography (p. 556)
- German (p. 557)
- History (p. 563)
- Humanities (p. 573)
- Italian (p. 589)
Conflict Resolution and Peace Studies

Coursework from the Short Term Certificate in Conflict Resolution and Peace Studies can be applied towards the requirements of an Associate of Arts Degree (p. 35) or an Associate of Science Degree (p. 38).

**Deaf Interpretive Services**

Select from the below list of courses to fulfill elective requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
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<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
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<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
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<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>COMM-2160</td>
<td>Intercultural Communication</td>
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<tr>
<td>HIST-1020</td>
<td>History of Civilization II</td>
<td>3</td>
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<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
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<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
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<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
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<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
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<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
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<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
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<tr>
<td>POL-2050</td>
<td>Study Abroad in Peace and Conflict Resolution</td>
<td>3</td>
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<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
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<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>Honors Life Span Development</td>
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<td>PSY-2040</td>
<td>Social Psychology</td>
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<td>PSY-2060</td>
<td>Adolescent Psychology</td>
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<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
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<tr>
<td>SOC-2010</td>
<td>Social Problems</td>
<td>3</td>
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<td>SOC-201H</td>
<td>Honors Social Problems</td>
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<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
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<td>WST-1510</td>
<td>Introduction to Women's Studies</td>
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<td>WST-200H</td>
<td>Honors Women and Reform</td>
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<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
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<td>ASL-1100</td>
<td>Deaf Culture</td>
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<tr>
<td>DIS-1300</td>
<td>Interpreting Fundamentals</td>
<td>3</td>
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<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
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<td>DIS-2300</td>
<td>Transliterating</td>
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<td>DIS-2310</td>
<td>Interpreting II</td>
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<td>DIS-2320</td>
<td>Educational Interpreting</td>
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<td>DIS-1402</td>
<td>American Sign Language Linguistics</td>
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<td>DIS-1740</td>
<td>Field Experience Lab I</td>
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<td>DIS-1940</td>
<td>Field Experience I</td>
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<td>DIS-1971</td>
<td>Field Experience Seminar I</td>
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<td>DIS-2410</td>
<td>Voicing</td>
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<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
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<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
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<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
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<td>DIS-2420</td>
<td>Advanced Voicing</td>
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<td>Individuals with Exceptionalities</td>
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<td>1000-level MATH course or higher (p. 32)</td>
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<tr>
<td>PE-1430</td>
<td>Physical Relaxation Techniques</td>
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</table>
To satisfy the program requirements and earn the Associate of Applied Science degree, all students pursuing an AAS degree for Deaf Interpretive Services, are required to have earned a grade of a "C" or higher in DIS-2940 Field Experience II and its companion lab course, DIS-2740 Field Experience Lab II.

### Early Childhood Education

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

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<th>Title</th>
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<td>Children's Development and Programs</td>
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<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
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<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<td>PSY-1010 General Psychology</td>
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<td>PSY-101H Honors General Psychology</td>
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<td>BIO-1050 Human Biology</td>
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<td>BIO-105L Human Biology Laboratory</td>
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<td>ECED-1301 Language and Literacy in an Integrated</td>
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<td>ECED-1311 Art and Creative Expression in an</td>
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<td>Integrated Curriculum</td>
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<td>EDUC-1011 Introduction to Education</td>
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<td>ENG-102H Honors College Composition II</td>
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<td>ECED-2300 Child Behavior and Guidance</td>
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<td>EDUC-2050 Human Diversity in Education</td>
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<td>ECED-1321 Math and Science Inquiry in an</td>
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<td>Integrated Curriculum</td>
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<td>ECED-1331 Music and Movement in an Integrated</td>
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<td>EDUC-1411 Individuals with Exceptionalities</td>
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<td>ECED-1860 Experience with Young Children in Early</td>
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<td>Childhood Settings</td>
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<td>ECED-2500 Infant/Toddler Development, Relationships,</td>
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<td>and Programs</td>
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<td>ECED-2401 Families, Communities, Schools</td>
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<td>ECED-2870 Early Childhood Education Student</td>
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<td>PSY-2110 Educational Psychology</td>
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</table>

### Related Degrees and Certificates

- Child Care Administration, Short-Term Certificate (p. 232)
- Child Development, Short-Term Certificate (p. 233)
- Early Childhood Education, Associate of Applied Science (p. 273)

### Human Services

**Note:** Select option (a) or (b) before beginning this program.

<table>
<thead>
<tr>
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<th>Credit Hours</th>
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<td>HS-1101</td>
<td>Foundation of Substance Abuse, Addiction, and Group Work</td>
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<td>HS-1300</td>
<td>Introduction to Human Services</td>
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<td>PSY-1010 General Psychology</td>
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<td>HS-1850</td>
<td>Introduction to Human Services Principles and Practices</td>
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<td>PHIL-1000</td>
<td>Critical Thinking</td>
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<td>ENG-1020 College Composition II</td>
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<td>Select one of the following options:</td>
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<td>Options</td>
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<tr>
<td>A</td>
<td>HS-1200 &amp; HS-1210 Treatment Modalities and Diversity Issues in Chemical Dependency and Prevention and Chemical Dependency (Option A)</td>
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<td>Options</td>
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<tr>
<td>B</td>
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<td>HS-1220</td>
<td>Diagnostic Tools and Legal Considerations (Option B)</td>
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<td>HS-2600</td>
<td>Systems Approach to Case Management</td>
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<td>Human Services Principles and Practices I</td>
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<td>HS-1120</td>
<td>Suicide Prevention &amp; Intervention</td>
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<td>Options</td>
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<tr>
<td>A</td>
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<tr>
<td>HS-1110</td>
<td>Crisis Intervention and Child Abuse Issues and Family Theory and Services</td>
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<td>Options</td>
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<td>HS-2860</td>
<td>Human Services Principles and Practices II</td>
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<td>Human Services Capstone</td>
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1. omitted
PSY-2020  Life Span Development
PSY-202H  Honors Life Span Development

1  For students planning to transfer, highly recommend MATH-1410 Elementary Probability and Statistics I.

Options
(A) Alcohol/Chemical Dependency

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>HS-1200</td>
<td>Treatment Modalities and Diversity Issues in Chemical Dependency</td>
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<td>HS-1210</td>
<td>Prevention and Chemical Dependency</td>
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<td>HS-2200</td>
<td>Ethics in Chemical Dependency</td>
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(B) Generalist Option

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<th>Title</th>
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<td>HS-1110</td>
<td>Crisis Intervention and Child Abuse Issues</td>
<td>3</td>
</tr>
<tr>
<td>HS-1220</td>
<td>Diagnostic Tools and Legal Considerations</td>
<td>4</td>
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<tr>
<td>HS-2300</td>
<td>Family Theory and Services</td>
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Related Degrees and Certificates
- Chemical Dependency, Short-Term Certificate (p. 231)
- Human Services, Associate of Applied Science (p. 310)

Paralegal Studies

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<td>Applied Accounting (or higher)</td>
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<td>PL-1001</td>
<td>Introduction to the Paralegal Profession</td>
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<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>IT-1090</td>
<td>Computer Applications</td>
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<td>Honors Computer Applications</td>
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<td>POL-1010</td>
<td>American National Government</td>
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<td>POL-101H</td>
<td>Honors American National Government</td>
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<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations (or higher)</td>
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<td>PHIL-1020</td>
<td>Introduction to Logic</td>
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<td>PL-1300</td>
<td>Civil Procedure</td>
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<td>PL-1401</td>
<td>Legal Research and Writing I</td>
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<td>PL-1502</td>
<td>Law Office Technology</td>
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<td>ENG-102H</td>
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<td>PL-2301</td>
<td>Torts and Evidence</td>
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<td>PL-2401</td>
<td>Legal Research and Writing II</td>
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PL-2440  Business Transactions  3
PL-xxxx  Any PL elective course  2-3
Select one of the following:  3
ACCT-1311  Financial Accounting
EHST-1310  Introduction to Environmental Law
MA-1020  Medical Terminology I
PL-2851  Paralegal Practicum  1
PL-2991  Paralegal Capstone  1
PL-xxxx  Any PL elective course  2-3
PL-xxxx  Any PL elective course  3
PL-xxxx  Any 2000-level PL elective course  3
Select one of the following:  3
POL-1020  State & Local Government
POL-2100  Constitutional Law

1  Can be waived with documentation of equivalent experience. Minimum of 60 credits for the degree still required.
2  PL grades below a “C” will not be accepted and those courses will have to be re-taken.

Related Degrees and Certificates
- Paralegal Studies, Associate of Applied Business (p. 377)
- Paralegal Studies, Post-Degree Professional Certificate (p. 376)

Degrees and Certificates
- Legal Administrative Specialist, Certificate of Proficiency (p. 331)

Teacher Education

Cuyahoga Community College offers several opportunities for those interested in pursuing a career in the field of Education. The courses offered within each program will vary depending upon the college and career path of each student. To be a lead educator in any public school setting – a 4-year degree with licensure is required by The Ohio Department of Education. However, Tri-C is where futures begin and many choose an Associate’s Degree at Tri-C first and then transfer to the 4 year school of their choice.

Learn more about how much money you can save by starting at Tri-C and learn more about the Education Associate Degree & Transfer pathway.

Early Childhood Education (Ages 0 - 5 years) - Associate of Applied Science degree

The Associate of Applied Science degree in Early Childhood Education prepares students to teach young children in a variety of inclusive
childhood settings, including preschools pre-kindergarten, Head Start, childcare centers and infant/toddler programs. Qualified students who complete this program can earn the Ohio Pre-Kindergarten Associate Licensure (certain requirements must be met).

Learn more about the AAS in Early Childhood Education.

Learn more about available course at Tri-C in this discipline.

**Early Childhood Education Focus for Associate of Arts (Pre-K through 5th grade)**

This course work would begin the path to teach in a public school system from Pre-Kindergarten levels through Fifth grade, upon transfer to an appropriate four year college and successful completion. Coursework to teach at this level would focus on the developmental age group of early childhood, including early literacy, the importance of pre-math skills, incorporating science and music, reading, mathematics, social studies.

At Tri-C students would complete an Associate of Arts degree made up of foundational coursework, including general education coursework, and introductory education classes to prepare for transfer to a four year baccalaureate program. The Associate of Arts degree is a flexible degree designed to allow students to select coursework based on the planned four-year program of transfer and study. Students should meet with an academic counselor to create the best path for their individual college and career goals.

Please visit the transfer center page to view available transfer pathways and articulation agreements from Tri-C to four-year institutions.

Learn more about a few focused courses in this discipline.

**Adolescence to Young Adults (AYA) Licensure Focus for Associate of Arts (6th through 12th grade)**

This path would qualify students to teach in a public school system from 6th to 12th grade. Coursework to teach at this level would focus on instruction for middle school and high school age students. To prepare for teaching at this level, students would select at least one specialty areas (i.e. English, Mathematics, Social Studies, Science). Students may also want to consider the dual-licensure track at the four year institution for the evolving co-teaching classroom.

At Tri-C students would complete an Associate of Arts degree made up of foundational coursework, including general education coursework, and introductory education classes to prepare for transfer to a four year baccalaureate program. The Associate of Arts degree is a flexible degree designed to allow students to select coursework based on the planned four-year program of study. Students should meet with an academic counselor to create the best path for their individual college and career goals.

Please visit the transfer center/university partnerships page to view available transfer pathways and articulation agreements from Tri-C to four-year institutions.

Learn more here and here about Ohio Teacher Licensure requirements.

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**Industrial Manufacturing and Construction**

- Advanced Manufacturing and Engineering (Workforce Training Programs)
- Apprenticeship Programs in the Construction Trades and Manufacturing
- Associate of Science Degree/University Transfer
- Automotive Technology
- Construction Engineering Technology
- Electrical/Electronic Engineering Technology
- Electrical/Electronic Engineering Technology (Bio-Medical)
- Electrical/Electronic Engineering Technology (Computer Networking Hardware)
- Electrical/Electronic Engineering Technology (Digital Communications, including RF, Radio Frequency)
- Integrated Systems Engineering Technology
- ISO Standards and Certified Training (Professional Development Programs)
- Lean Six Sigma (Professional Development Programs)
- Manufacturing Industrial Engineering Technology
- Mechanical Engineering Technology
- Operations Engineering Technology
- Operations Engineering Technology (Automated Manufacturing)
- Operations Engineering Technology (Engineering Management)
- Plant Science and Landscape Technology
- Purchasing and Supply Management
- Truck Driving and Logistics (Workforce Training Programs)

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**Advanced Manufacturing and Engineering (Workforce Training Programs)**

**Degrees and Certificates**

- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 179)
- Automation Maintenance, Certificate of Proficiency (p. 210)
- Building Maintenance, Certificate of Proficiency (p. 215)
- CNC Machining and Composites Manufacturing, Short-Term Certificate (p. 239)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)
- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
• Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)
• Industrial Welding, Certificate of Proficiency (p. 313)
• Integrated Systems Engineering Technology, Associate of Applied Science (p. 321)

Training and Credentials
• CNC Technology Certificate Program (p. 239)
• Computer Aided Design (CAD) (p. 244)
• Electrical Technician Certificate of Completion (p. 274)
• Facility Technician (p. 293)
• Fast-Track Welding Certificate Program (p. 294)
• Steelworkers for the Future (p. 413)
• Industrial Automation WCED Certificate of Completion (p. 312)
• Right Skills Now CNC Operations Program (p. 408)
• Precisions Machining Technology 3 (PMT 3) (p. 397)
• Manufacturing Technical Readiness Program (p. 336)
• Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)

Apprenticeship Programs in the Construction Trades and Manufacturing
• Applied Industrial Technology (Bricklaying & Allied Crafts), Apprenticeship
• Applied Industrial Technology (Carpentry), Apprenticeship
• Applied Industrial Technology (Cement Masonry), Apprenticeship
• Applied Industrial Technology (Communication Transport Systems), Apprenticeship
• Applied Industrial Technology (Construction Tending and Hazardous Material Abatement), Apprenticeship
• Applied Industrial Technology (Drywall Finishing), Apprenticeship
• Applied Industrial Technology (Electrical Construction), Apprenticeship
• Applied Industrial Technology (Floorlaying), Apprenticeship
• Applied Industrial Technology (Glazing), Apprenticeship Program
• Applied Industrial Technology (Ironworking), Apprenticeship Program
• Applied Industrial Technology (Lifting Technology), Apprenticeship
• Applied Industrial Technology (Manufacturing Technology), Apprenticeship Program
• Applied Industrial Technology (Millwrighting), Apprenticeship Program
• Applied Industrial Technology (Operating Engineers), Apprenticeship Program
• Applied Industrial Technology (Painting), Apprenticeship Program
• Applied Industrial Technology (Pile Driving), Apprenticeship Program

Associate of Science Degree/University Transfer
The Associate of Science degree is a flexible 2 year degree designed for students who want to begin their studies at Tri-C and plan to transfer to a baccalaureate degree-granting college or university for completion of a four-year degree. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Associate of Science Degree Requirements (p. 38)
Learn more about science and mathematics courses offered at Tri-C:
• Biology (p. 480)
• Chemistry (p. 492)
• Earth Science (p. 522)
• Mathematics (p. 605)
• Physical Science (p. 652)
• Physics (p. 655)

Automotive Technology
Certificate(s) may have an open elective or an open Math, Communications, Arts & Humanities, Social & Behavioral Sciences, Natural and Physical Sciences that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1101</td>
<td>Introduction to Automotive Service Procedures</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1400</td>
<td>Automotive Alignment, Steering and Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1450</td>
<td>Automotive Braking Systems</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1502</td>
<td>Automotive Electrical Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>AUTO-1050</td>
<td>Numerical Applications in Automotive Service</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1300</td>
<td>Automotive Engines</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1510</td>
<td>Automotive Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Social and Behavioral Sciences requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUTO-2310</td>
<td>Manual Transmission and Drivetrain</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2350</td>
<td>Automotive HVAC</td>
<td>2</td>
</tr>
</tbody>
</table>
AUTO-2400  |  Engine Performance  |  3  
AUTO-2940  |  Automotive Field Experience IV  |  1  
MATH-1xxx  |  1000-level MATH course or higher (p. 32)  |  3  
Arts and Humanities/Natural Sciences Requirements (p. 33)  |  3  
AUTO-2300  |  Automatic Transmissions  |  3  
AUTO-2450  |  Automotive Electronic Engine Controls  |  3  
AUTO-2701  |  Automotive Service Operations  |  3  
AUTO-2950  |  Automotive Field Experience V  |  1  
DEGR-xxxx  |  General Elective (see Elective list)  |  3  
DEGR-xxxx  |  General Elective (see Elective list)  |  3  

ASEP Students must also complete AUTO-1940 Automotive Field Experience I, AUTO-1950 Automotive Field Experience II, AUTO-1960 Automotive Field Experience III, and AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP.

### Electives
Recommend selecting from the below courses to fulfill elective requirement. Elective requirement may be fulfilled by other courses not listed here.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEN-1022</td>
<td>Strategies for Success</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Related Degrees and Certificates
- Automotive Maintenance and General Service, Short-Term Certificate (p. 211)
- Automotive Technology, Certificate of Proficiency (p. 212)
- Automotive Technology, Associate of Applied Science (p. 211)

### Construction Engineering Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNST-1750</td>
<td>Construction Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
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</tbody>
</table>

Select one of the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>2</td>
<td></td>
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<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

1 CNST-1510 Green Building & Sustainability I recommended for university transfer
2 ACCT-1311 Financial Accounting recommended for university transfer

### Related Degrees and Certificates
- Construction Project Management, Certificate of Proficiency (p. 249)
- Construction Engineering Technology, Associate of Applied Science (p. 248)

### Electrical/Electronic Engineering Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>EET-1190</td>
<td>Printed Circuit Layout</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
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</table>

Select one of the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-1210</td>
<td>AC Electric Circuits</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Select one of the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td></td>
<td></td>
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</table>

One of the following: 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
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<td></td>
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</table>

One of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2111</td>
<td>Industrial Electronics I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
EET-2170  Signal Analysis  3
EET-2242  C and ASM Programming with Embedded Applications  3
One of the following:  3
MATH-1540  Trigonometry
MATH-154H  Honors Trigonometry
EET-2220  Electronics II  3
EET-2290  Electrical Design Project  3
EET-2500  Instrumentation and Control  2
ITNT-2300  Networking Fundamentals  3
PHYS-1210  College Physics I  4
Select one of the following:  2-3
EET-2520  Programmable Logic Controllers
EET-xxxx  EET Elective Course

MATH-1580  Precalculus and MATH-1610  Calculus I or higher will be accepted in place of MATH-1530  College Algebra & MATH-1540  Trigonometry.

Electives
Select from the below courses to fulfill elective requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1100</td>
<td>Introduction to Robotics</td>
<td>2</td>
</tr>
<tr>
<td>EET-1150</td>
<td>Basic Robotics with Math</td>
<td>2</td>
</tr>
<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates
- Electronic Engineering Technician, Certificate of Proficiency (p. 283)
- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)

Degrees and Certificates
- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)
- Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 277)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)

Electrical/Electronic Engineering Technology (Bio-Medical)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1101</td>
<td>Direct Current Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
<td>1</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>
| Select one of the following:  3
| ENG-1010  | College Composition I              |              |
| ENG-101H  | Honors College Composition I       |              |
| BIO-1050  | Human Biology                      | 3            |
| BIO-105L  | Human Biology Laboratory           | 1            |
| EET-1210  | AC Electric Circuits               | 3            |
| EET-1241  | Digital Fundamentals               | 3            |
| ENG-2151  | Technical Writing                  | 3            |
| Select one of the following:  4
| MATH-1530 | College Algebra                    |              |
| MATH-153H | Honors College Algebra             |              |
| EET-2111  | Industrial Electronics I           | 3            |
| EET-2120  | Electronics I                      | 3            |
| EET-2170  | Signal Analysis                    | 3            |
| EET-2400  | Biomedical Instrumentation I        | 3            |
| Select one of the following:  3
| MATH-1540 | Trigonometry                        |              |
| MATH-154H | Honors Trigonometry                 |              |
| EET-2220  | Electronics II                     | 3            |
| EET-2410  | Biomedical Instrumentation II       | 3            |
| EET-2490  | Biomedical Design Project          | 2            |
| PHYS-1210 | College Physics I                  | 4            |
| ITNT-2300 | Networking Fundamentals             | 3            |
| Select one of the following:  3
| PHIL-2020 | Ethics                              |              |
| PHIL-202H | Honors Ethics                       |              |
| EET-2901  | Clinical Internship                | 3            |

Related Degrees and Certificates
- Electronic Engineering Technician, Certificate of Proficiency (p. 283)
- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)

Electrical/Electronic Engineering Technology (Computer Networking Hardware)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
</tbody>
</table>
| Select one of the following:  3
| IT-1090  | Computer Applications               |              |
| IT-109H  | Honors Computer Applications        |              |
| BADM-1020 | Introduction to Business            | 3            |
| EET-1035 | Operating Systems and Software for PC Technicians | 4           |
Select one of the following:

- PHIL-2020 Ethics
- PHIL-202H Honors Ethics
- EET-1210 AC Electric Circuits
- EET-1241 Digital Fundamentals
- PHYS-1210 College Physics I

Select one of the following:

- MATH-1530 College Algebra
- MATH-153H Honors College Algebra

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- ENG-2151 Technical Writing

- EET-2120 Electronics I
- EET-2130 Digital Communication Fundamentals
- EET-2170 Signal Analysis
- EET-2242 C and ASM Programming with Embedded Applications

- ITNT-2300 Networking Fundamentals
- MATH-1540 Trigonometry
- EET-2220 Electronics II
- EET-2231 Wired & Wireless Communication
- EET-2591 Communications Design Project

- ITNT-2310 TCP/IP
- PHYS-1220 College Physics II

Related Degrees and Certificates

- Electronic Engineering Technician, Certificate of Proficiency (p. 283)
- Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 277)

Degrees and Certificates

- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)
- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)

Integrated Systems Engineering Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

Note: Students must select Option A, B, or C before starting this program. Courses required for program admission to a stackable certificate will be listed as overlapping courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ISET-1300</td>
<td>Mechanical/Electrical Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1310</td>
<td>Mechanical Power Transmission</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

EET-1161  Direct Current Circuits 3
EET-1180  Surface Mount Soldering 1
EET-1190  Printed Circuit Layout 2
MET-1100  Technology Orientation 2

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Related Degrees and Certificates

- Cisco, Short-Term Certificate (p. 236)
- Computer Maintenance Technology, Certificate of Proficiency (p. 244)
- Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)

Degrees and Certificates

- Information Technology - Networking Software Associate of Applied Business degree (p. 316)

Training and Credentials

- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)
Option B:

- ISET-1450  Heating Ventilation Air Conditioning/Refrigeration I (Option B)

Option C:

- ISET-1101  Welding Blue Print Reading (Option C)

Select one of the following:

- ENG-1010  College Composition I
- ENG-101H  Honors College Composition I
- ISET-1340  Industrial Piping and Tubing
- ISET-1420  Applied Electricity II

Option A:

- ISET-1320  Fundamentals of Fluid Power (Option A)

Option B:

- ISET-1460  Fundamental Boiler Technology (Option B)

Option C - Select one of the following:

- ISET-2100  Gas Metal Arc Welding (MIG) (Option C)
- ISET-2120  Shielded Metal Arc Welding (STICK) (Option C)

Select one of the following:

- IT-1090  Computer Applications
- IT-109H  Honors Computer Applications
- ISET-2200  Industrial Motor Controls
- COMM-1000  Fundamentals of Interpersonal Communication
- ENG-2151  Technical Writing
- ISET-2240  Applied National Electric Code
- ISET-2500  Programmable Logic Controllers Maintenance I
- PSY-1050  Introduction to Industrial/Organizational Psychology

Option A:

- MET-2300  Fluid Power (Option A)

Option B:

- ISET-2450  Heating Ventilation Air Conditioning/Refrigeration II (Option B)

Option C - Select one of the following:

- ISET-2110  Gas Tungsten Arc Welding (TIG) (Option C)
- ISET-2131  Oxyfuel Processes/Plasma Processes
- BADM-1050  Professional Success Strategy
- ISET-2210  Commercial Wiring
- ISET-2220  Fundamentals of Electronics and Instrumentation
- ISET-2990  Reliability Centered Maintenance

Option A - Select one of the following:

- ISET-2510  Programmable Logic Controllers Maintenance II (Option A)¹
- ISET-2520  Programmable Logic Controllers Maintenance III (Option A)¹

Option B:

- ISET-2460  Applied Boiler Technology (Option B)

¹ Consecutive eight week course.

Options

(A) Integrated Systems 8

Fluid Power and Programmable Logic Controllers Option (A)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power</td>
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<td>MET-2300</td>
<td>Fluid Power</td>
<td>3</td>
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<tr>
<td>ISET-2510</td>
<td>Programmable Logic Controllers Maintenance II</td>
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<tr>
<td>ISET-2520</td>
<td>Programmable Logic Controllers Maintenance III</td>
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Additional program courses

Total Credit Hours 60

(B) Environmental Systems

Boiler Technology, HVAC, Option (B)

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<td>Fundamental Boiler Technology</td>
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<tr>
<td>ISET-2450</td>
<td>Heating Ventilation Air Conditioning/Refrigeration II</td>
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<tr>
<td>ISET-2460</td>
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</table>

Additional program courses

Total Credit Hours 60

(C) Integrated Systems

Welding, Option (C)

To complete this option, students must complete ISET-1101 Welding Blue Print Reading and two of the four welding courses listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>ISET-1101</td>
<td>Welding Blue Print Reading</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following:

- ISET-2100  Gas Metal Arc Welding (MIG)
- ISET-2120  Shielded Metal Arc Welding (STICK)
- ISET-2110  Gas Tungsten Arc Welding (TIG)
- ISET-2131  Oxyfuel Processes/Plasma Processes

Additional program courses

Total Credit Hours 62

Related Degrees and Certificates

- Introductory Welding, Short-Term Certificate (p. 324)
- Welding Technology, Short-Term Certificate (p. 426)
- Building Maintenance Technician, Certificate of Proficiency (p. 215)
- Industrial Welding, Certificate of Proficiency (p. 313)
- Mechatronics, Certificate of Proficiency (p. 344)
- Integrated Systems Engineering Technology, Associate of Applied Science (p. 321)
Training and Credentials
- Fast-Track Welding Certificate Program (p. 294)
- Electrical Technician Certificate of Completion (p. 274)
- Facility Technician (p. 293)
- FirstEnergy Power Systems Institute PSL, Associate of Technical Study (p. 297)
- Steelworkers for the Future (p. 413)
- Industrial Automation Certificate of Completion (p. 312)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)

ISO Standards and Certified Training (Professional Development Programs)

Training and Credentials
- Plexus AS9100C Understanding and Internal Auditing (Aerospace) (p. 391)
- Plexus: ISO 13485 – Medical Devices Understanding and Internal Auditing (p. 392)
- Exemplar Global Certified ISO 9001 Internal Auditor Training with ISO/TS 16949 Automotive Emphasis (p. 292)
- Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditing (p. 293)
- Exemplar Global Certified/Plexus ISO 9001:2015 Lead Auditor Training (p. 292)

Lean Six Sigma (Professional Development Programs)

Training and Credentials
- Lean Six Sigma for Education: Yellow Belt (p. 328)
- Lean Six Sigma for Health Care: Yellow Belt and Green Belt (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Manufacturing Industrial Engineering Technology
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
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<th>Title</th>
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<td>MET-1100</td>
<td>Technology Orientation</td>
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<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
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<tr>
<td>MET-1261</td>
<td>Product Ideation &amp; Design I</td>
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<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
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<tr>
<td>MET-1250</td>
<td>Introduction to Additive Manufacturing</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
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<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
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<td>MET-2000</td>
<td>CAD/CAM Processes</td>
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<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
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<td>MET-1400</td>
<td>CNC Programming and Operation</td>
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<tr>
<td>MET-2060</td>
<td>Product Ideation &amp; Design II</td>
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<td>Select one of the following:</td>
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<td>ENG-1020</td>
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<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td>Select one of the following:</td>
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<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
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<td>MET-2601</td>
<td>3D Solid Modeling</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>MET-2400</td>
<td>Statistical Quality Control</td>
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<td>MET-xxxx</td>
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<td>CNST-1410</td>
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<td>PHYS-1210</td>
<td>College Physics I</td>
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<td>HLTH-1230</td>
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<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
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<td>PHYS-1220</td>
<td>College Physics II</td>
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<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Sciences requirements (p. 334)</td>
<td></td>
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</tbody>
</table>

Related Degrees and Certificates
- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)
- 3D Digital Design & Manufacturing Technology, Certificate of Proficiency (p. 179)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Manufacturing Industrial Engineering Technology, Associate of Applied Science (p. 334)
Training and Credentials

- CNC Technology Certificate Program (p. 239)
- Computer Aided Design (CAD) (p. 244)
- Right Skills Now CNC Operations Program (p. 408)
- Precision Machining Technology 3 (PMT 3) (p. 397)
- Manufacturing Technical Readiness Program (p. 336)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)
- Plexus AS9100C Understanding and Internal Auditing (Aerospace) (p. 391)
- Plexus: ISO 13485 – Medical Devices Understanding and Internal Auditing (p. 392)
- Plexus Understanding ISO 14001: 2015/Internal Auditing for ISO 14001 (p. 392)
- Exemplar Global Certified ISO 9001 Internal Auditor Training with ISO/TS 16949 Automotive Emphasis (p. 292)
- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)
- Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditing Training (p. 293)

Mechanical Engineering Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>MATH-1530</td>
<td>College Algebra ¹</td>
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<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
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</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
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<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-1601</td>
<td>Technical Statics ²</td>
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<tr>
<td>PHYS-1210</td>
<td>College Physics I ³</td>
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<tr>
<td>EN-1020</td>
<td>College Composition II</td>
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<tr>
<td>EN-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
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<tr>
<td>MET-1621</td>
<td>Technical Dynamics ⁴</td>
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<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
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<tr>
<td>MET-2200</td>
<td>Strength of Materials ⁵</td>
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<tr>
<td>MET-2240</td>
<td>Mechanical Engineering Lab</td>
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<tr>
<td>MET-2300</td>
<td>Fluid Power</td>
<td>3</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MET-2700</td>
<td>Machine Design</td>
<td>4</td>
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<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
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</table>

1  MATH-1610 Calculus I will be accepted in place of both MATH-1530 College Algebra and MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed to meet degree requirements.
2  MET-2610 Statics will be accepted in place of MET-1601 Technical Statics to meet this requirement. MET-2610 Statics, MET-2620 Dynamics, and MET-2630 Engineering Strength of Materials are recommended for students planning to transfer.
3  PHYS-2310 General Physics I & PHYS-2320 General Physics II will be accepted in place of PHYS-1210 College Physics I & PHYS-1220 College Physics II, PHYS-2310 General Physics I & PHYS-2320 General Physics II are recommended for students planning to transfer.
4  MET-2620 Dynamics will be accepted in place of MET-1621 Technical Dynamics to meet this requirement.
5  MET-2630 Engineering Strength of Materials will be accepted in place of MET-2200 Strength of Materials to meet this requirement.
6  MET-2320 Thermal Dynamics will be accepted in place of MET-2300 Fluid Power to meet this requirement.

Related Degrees and Certificates

- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Mechanical Engineering Technology, Associate of Applied Science (p. 343)

Operations Engineering Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
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<th>Title</th>
<th>Credit Hours</th>
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<td>Safety and Health in the Workplace: OSHA</td>
<td>3</td>
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<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
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<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
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</tr>
<tr>
<td>MET-1631</td>
<td>Industrial Supply Logistics</td>
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<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
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<td>MET-2070</td>
<td>Introduction to Industrial Warehousing</td>
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Select one of the following:

- Abstract
- Title
- Credit Hours
- Page
- Year


**Operations Engineering Technology (Automated Manufacturing)**

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>3</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tr>
<tr>
<td>EET-1220</td>
<td>Circuits and Electronics for Automation</td>
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<td>MET-1400</td>
<td>CNC Programming and Operation</td>
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<td>MET-2140</td>
<td>Manufacturing Automation and Control</td>
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<td>MET-2250</td>
<td>Robotics Operations Certification</td>
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<td>3D Solid Modeling</td>
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<td>Introduction to Industrial/Organizational Psychology</td>
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<td>MET-2400</td>
<td>Statistical Quality Control</td>
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<td>MET-2750</td>
<td>Technical Operations Management</td>
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<td>MET-XXXX</td>
<td>Elective</td>
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</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics</td>
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</tbody>
</table>

1. CNST-1750 Construction Safety may be used to meet this requirement.
2. CNST-1731 Construction Print Reading may be used to meet this requirement.
3. MATH-1610 Calculus I can be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.
4. COMM-1010 Fundamentals of Speech Communication may be used to meet this requirement.
5. BADM-2151 Business Law may be used to meet this requirement.
6. MET-2430 Engineering Probability and Statistics or MATH-1410 Elementary Probability and Statistics I may be used to meet this requirement.

**Related Degrees and Certificates**

- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Operations Engineering Technology, Associate of Applied Science (p. 371)

**Degrees and Certificates**

- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)
MATH-1410 Elementary Probability and Statistics I or MET-2430 Engineering Probability and Statistics may be used to meet this requirement.

PHYS-2310 General Physics I may be used to meet this requirement.

### Related Degrees and Certificates
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)

### Degrees and Certificates
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)
- Operations Engineering Technology, Associate of Applied Science (p. 371)

### Operations Engineering Technology (Engineering Management)
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
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<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
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<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
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<tr>
<td>MET-XXXX</td>
<td>Elective</td>
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<td>ENG-1010</td>
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<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
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<td>CHEM-1300</td>
<td>General Chemistry I</td>
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<td>CHEM-1300L</td>
<td>General Chemistry Laboratory I</td>
<td>3</td>
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<td>CHEM-130H</td>
<td>Honors General Chemistry I</td>
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<td>Honors College Composition II</td>
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<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
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<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
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<td>Engineering Probability and Statistics</td>
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<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
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<tr>
<td>Social &amp; Behavioral Sciences requirement (p. 33)</td>
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<tr>
<td>MET-2610</td>
<td>Statics</td>
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</table>

Select one of the following:
- MET-2750 Technical Operations Management 3
- MET-XXX Elective 1-3

Select one of the following:
- MET-XXX Elective 3
- EET-XXX Elective 3

1. CNST-1750 Construction Safety may be used to meet this requirement.
2. MET-2550 Engineering Analysis Using MATLAB or IT-1090 Computer Applications will be accepted in place of MET-1120 Computer Applications and Programming to meet this requirement.
3. CNST-1731 Construction Print Reading may be used to meet this requirement.
4. CNST-2510 Introduction to Asset Management or MET-2500 Fundamentals of Products Development and Manufacture will be accepted in place of MET-2750 Technical Operations Management.

### Related Degrees and Certificates
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)

### Degrees and Certificates
- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
- Operations Engineering Technology, Associate of Applied Science (p. 371)

### Plant Science and Landscape Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH-xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
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<tr>
<td>PST-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
<td>3</td>
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<tr>
<td>PST-1411</td>
<td>Equipment Operations and Safety</td>
<td>2</td>
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<tr>
<td>PST-xxxx</td>
<td>Plant Science Elective (select from below list)</td>
<td>2</td>
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</table>

Select one of the following:
- ENG-1010 College Composition I 3
- ENG-101H Honors College Composition I 3
- PSCI-1020 Everyday Chemistry 3
- PSCI-102L Everyday Chemistry Laboratory 1
- PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants 3
- PST-1420 Landscape Practices 3
Purchasing and Supply Management

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>BADM-1020</td>
<td>Introduction to Business</td>
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<tr>
<td>BADM-2161</td>
<td>Introduction to Purchasing and Supply Management</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
<td>3</td>
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<tr>
<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
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<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
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<td>BADM-2151</td>
<td>Business Law</td>
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<td>BADM-2180</td>
<td>Purchasing Management</td>
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<td>BADM-2240</td>
<td>Negotiations</td>
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<tr>
<td>MARK-2261</td>
<td>Salesmanship and Promotional Strategies</td>
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1 MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement. MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.
2 PHIL-2020 Ethics will be accepted in place of PHIL-2060 Business Ethics.

Related Degrees and Certificates

- Garden Center, Short-Term Certificate (p. 301)
- Landscape Contracting, Short-Term Certificate (p. 326)
- Landscape Design, Short-Term Certificate (p. 327)
- Landscape Horticulture, Short-Term Certificate (p. 328)
- Plant Science and Landscape Technology (Landscape Technician), Certificate of Proficiency (p. 389)
- Plant Science and Landscape Technology, Associate of Applied Science (p. 390)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)
- Purchasing and Supply Management, Associate of Applied Business (p. 400)
- Purchasing and Supply Management, Post-Degree Professional Certificate (p. 401)
Truck Driving and Logistics (Workforce Training Programs)

Training and Credentials
- Class A CDL Truck Driving Training (p. 237)
- Class A or B CDL Refresher Course (p. 237)
- Class B CDL Accelerated Training (p. 238)
- Passenger Bus Training (p. 379)
- Powered Industrial Truck/Forklift Operator Training (p. 394)
- CDL-B to CDL-A Bridge Course (p. 228)

Information Technology
- Cancer Registrar
- Cisco Technical Training Institute (Workforce Training Programs)
- Electrical/Electronic Engineering Technology (Computer Networking Hardware)
- Health Information Management Technology
- Information Technology (Business Solutions)
- Information Technology (Cybersecurity)
- Information Technology (Networking Software)
- Information Technology (Programming and Development)
- Information Technology (Workforce Training Institute)
- Visual Communication and Design (Graphic Design)
- Visual Communication and Design (Illustration)
- Visual Communication and Design (Photography)
- Visual Communication and Design (Web and Interactive Media)

Cancer Registrar

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HIM-2500</td>
<td>Introduction to Cancer Registry and Disease Management</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2510</td>
<td>The Cancer Disease Process and Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2520</td>
<td>Oncology Coding and Staging</td>
<td>3</td>
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<tr>
<td>HIM-2530</td>
<td>Oncology Treatment and Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2540</td>
<td>Abstracting Principles and Methodologies for Oncology</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2550</td>
<td>Database Analytics, Quality and Tracking</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2560</td>
<td>Oncology Database and Manuals</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2870</td>
<td>Clinical Professional Practice Experience for Cancer Registry</td>
<td>2</td>
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</table>

Degrees and Certificates
- Health Information Management Technology, Associate of Applied Science (p. 304)

Cisco Technical Training Institute (Workforce Training Programs)

Training and Credentials
- Cisco CCNA Wireless Certification (IUWNE) (p. 235)
- Cisco Certified Design Associate (CCDA) (p. 235)
- Cisco Certified Design Professional (CCDP) (p. 235)
- Cisco Certified Internetwork Expert (CCIE) (p. 235)
- Cisco Certified Network Associate (CCNA) (p. 235)
- Cisco Certified Network Associate Data Center (CCNA Data Center) (p. 235)
- Cisco Certified Network Professional (CCNP) (p. 235)
- Cisco Certified Security: Security Associate (IINS) (p. 235)
- Cisco Certified Service Provider (CCNA SP) (p. 235)
- Cisco Certified Voice Associate (CCVA) (p. 235)
- Cisco Wireless Technology Specialist Certifications (p. 235)
- Network Support Technician (p. 234)
- Securing Cisco Networks with Threat Detection and Analysis (SCYBER) (p. 235)

Electrical/Electronic Engineering Technology (Computer Networking Hardware)

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
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<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>EET-1035</td>
<td>Operating Systems and Software for PC Technicians</td>
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<tr>
<td>EET-1055</td>
<td>Computer Hardware Support</td>
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<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
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<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
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<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
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<tr>
<td>ITNT-2320</td>
<td>Network Administration I</td>
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<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>EET-1302</td>
<td>Cisco I: Basic Networking Technologies ¹</td>
<td>3</td>
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<tr>
<td>EET-1312</td>
<td>Cisco II Basic Routing and Switching ¹</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
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</table>

¹ Select one of the following:
Required courses.

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
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<tr>
<td>EET-2302</td>
<td>Cisco III Intermediate Routing and Switching</td>
<td>3</td>
</tr>
<tr>
<td>EET-2312</td>
<td>Cisco IV Basic Wan Technologies</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2990</td>
<td>Networking Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Consecutive eight week course.

Related Degrees and Certificates

- Cisco, Short-Term Certificate (p. 236)
- Computer Maintenance Technology, Certificate of Proficiency (p. 244)
- Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)

Degrees and Certificates

- Information Technology - Networking Software, Associate of Applied Business (p. 316)
- Information Technology - Cybersecurity, Associate of Applied Business (p. 315)
- Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

Training and Credentials

- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)

Health Information Management Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I ¹</td>
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<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare ¹,²</td>
<td>1</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology ¹,³</td>
<td>2</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I ¹</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications ¹</td>
<td>3</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>HIM-1301</td>
<td>Introduction to Health Information Management</td>
<td>3</td>
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<tr>
<td>HIM-1311</td>
<td>Legal Aspects of Health Care</td>
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<tr>
<td>HIM-1401</td>
<td>Systems in Healthcare Delivery</td>
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<tr>
<td>MATH-1xx</td>
<td>1000-level MATH course or higher</td>
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<tr>
<td>BIO-2600</td>
<td>Pathophysiology</td>
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<tr>
<td>HIM-1411</td>
<td>Healthcare Statistical Applications &amp; Research</td>
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<td>HIM-1423</td>
<td>Health Data Documentation, Sources and Classification Systems</td>
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<td>HIM-1432</td>
<td>Computer Systems in Health Information Management</td>
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<tr>
<td>HIM-2160</td>
<td>Coding with ICD-10-CM</td>
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<td>PSY-1010</td>
<td>General Psychology</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<td>HIM-2130</td>
<td>Coding with CPT (Current Procedural Terminology)</td>
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<td>HIM-2410</td>
<td>Management Practices in Health Information</td>
<td>2</td>
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<tr>
<td>HIM-2200</td>
<td>Project Management for the Health Information Management Professional</td>
<td>2</td>
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<tr>
<td>HIM-2260</td>
<td>Coding with ICD-10-PCS</td>
<td>2</td>
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<tr>
<td>HIM-2312</td>
<td>Quality Assessment and Improvement</td>
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<tr>
<td>HIM-2401</td>
<td>Intermediate Coding</td>
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<tr>
<td>HIM-2430</td>
<td>Medical Reimbursement Methodologies</td>
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<td>HIM-2441</td>
<td>Project Management Capstone</td>
<td>2</td>
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<tr>
<td>HIM-2851</td>
<td>Practicum I</td>
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</tbody>
</table>

1 Grade of B or better in course.
2 PHIL-1000 Critical Thinking may be taken in place of HTEC-1120 Critical Thinking in Healthcare.
3 MA-1020 Medical Terminology I will be accepted in place of MA-1010 Introduction to Medical Terminology.

Related Degrees and Certificates

- Health Unit Coordinator, Short-Term Certificate (p. 306)
- Medical Billing Specialist, Short-Term Certificate (p. 351)
- Health Information Management Technology, Associate of Applied Science (p. 304)

Degrees and Certificates

- Cancer Registrar, Post-Degree Professional Certificate (p. 222)

Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Comprehensive Professional Medical Coding (Classroom) (p. 242)
- Comprehensive Professional Medical Coding (Online) (p. 243)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)
## Information Technology (Business Solutions)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
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<tr>
<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>ACCT-1311</td>
<td>Financial Accounting</td>
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<td>IT-1150</td>
<td>Introduction to Web Programming</td>
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<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
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<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
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<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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<td>Select one of the following:</td>
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<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
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<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
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<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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<td>IT-2351</td>
<td>Enterprise Database Systems</td>
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<td>IT-2620</td>
<td>Visual Basic .NET Programming</td>
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<td>IT-2680</td>
<td>Visual C# .NET</td>
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<td>E-Business Programming Technologies</td>
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<td>Principles of Marketing</td>
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<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
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<td>Honors Ethics</td>
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<tr>
<td>COMM-1010</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>Social and Behavioral Sciences requirement (p. )</td>
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1. Students who do not place into MATH-1410 Elementary Probability and Statistics I on the assessment test must take MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

2. Cannot also be selected to fulfill open Business Elective.

## Related Degrees and Certificates

- Information Technology - Business Solutions, Associate of Applied Business (p. 314)
- .Net Programming, Post-Degree Professional Certificate (p. 177)
- Data Analytics, Post-Degree Professional Certificate (p. 259)
- Information Technology-Business Solutions, Post-Degree Professional Certificate (p. 319)

## Information Technology (Cybersecurity)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
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<td>Information Technology Concepts for Programmers</td>
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<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 28)</td>
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<td>Honors College Composition I</td>
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<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
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<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
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<td>EET-1302</td>
<td>Cisco I: Basic Networking Technologies</td>
<td>3</td>
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<tr>
<td>EET-1312</td>
<td>Cisco II Basic Routing and Switching</td>
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<td>IT-2750</td>
<td>Scripting Fundamentals for Cybersecurity</td>
<td>3</td>
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<td>Natural Science (lecture) (p. 29)</td>
<td>3</td>
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<td>BADM-1050</td>
<td>Professional Success Strategy</td>
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<td>IT-2710</td>
<td>Advanced Topics in Network Security</td>
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<tr>
<td>PHIL-2020</td>
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<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
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<tr>
<td>Select one of the following:</td>
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<td>IT-2830</td>
<td>Cooperative Field Experience</td>
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</tr>
<tr>
<td>ITNT-2xxx</td>
<td>2000-level ITNT elective course</td>
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</table>

1. Students who do not place into MATH-1410 Elementary Probability and Statistics I on the assessment test must take MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.
### ELECTIVES

<table>
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<tr>
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<tbody>
<tr>
<td>IT-2720</td>
<td>Ethical Hacking and Systems Defense</td>
<td>3</td>
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<td>IT-2730</td>
<td>Intrusion Detection/Prevention Systems Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
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<tr>
<td>ITNT-2420</td>
<td>Network Administration II</td>
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</table>

### Related Degrees and Certificates
- Information Technology - Cybersecurity, Associate of Applied Business (p. 315)
- Cybersecurity, Post-Degree Professional Certificate (p. 258)

### Degrees and Certificates
- Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)
- Information Technology - Networking Software Associate of Applied Business (p. 316)
- Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

### Training and Credentials
- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)

### Information Technology (Networking Software)
Certificate(s) may have an open elective or an open Math, Communications, Arts & Humanities, Social & Behavioral Sciences, Natural and Physical Sciences that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
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<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
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<td>Programming Logic</td>
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<td>EET-1035</td>
<td>Operating Systems and Software for PC Technicians</td>
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<td>EET-1055</td>
<td>Computer Hardware Support</td>
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<td>TCP/IP</td>
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<td>ITNT-2320</td>
<td>Network Administration I</td>
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<td>IT-1090</td>
<td>Computer Applications</td>
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<td>IT-109H</td>
<td>Honors Computer Applications</td>
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Select one of the following:

- **BADM-1020** Introduction to Business 3
- **ITNT-2370** Network Security Fundamentals 3
- **ITNT-2380** Linux Administration 3
- **MATH-1xxx** 1000-level MATH course or higher 3 (p. 28)
- **BADM-1050** Professional Success Strategy 3
- **ITNT-2990** Networking Capstone 3
- **ITXX-2xxx** 2000 level ITNT elective 1-3

### Related Degrees and Certificates
- Cisco, Short-Term Certificate (p. 235)
- Computer Maintenance Technology, Certificate of Proficiency (p. 244)
- Information Technology - Networking Software, Associate of Applied Business (p. 316)

### Degrees and Certificates
- Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)
- Information Technology - Cybersecurity, Associate of Applied Business (p. 315)
- Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

### Training and Credentials
- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)

### Information Technology (Programming and Development)

<table>
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<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
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<td>IT-1050</td>
<td>Programming Logic</td>
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<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
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<td>ITNT-2310</td>
<td>TCP/IP</td>
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<td>ITNT-2320</td>
<td>Network Administration I</td>
<td>3</td>
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<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
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Select one of the following:

- **ENG-1010** College Composition I 3
- **ENG-101H** Honors College Composition I

Select one of the following:

- **EN**
Related Degrees and Certificates

- Mobile Application Development, Short-Term Certificate (p. 357)
- Web Application Development, Short-Term Certificate (p. 424)
- Information Technology - Programming and Development, Associate of Applied Business (p. 318)
- .Net Programming, Post-Degree Professional Certificate (p. 177)
- Data Analytics, Post-Degree Professional Certificate (p. 259)
- Information Technology-Programming and Development, Post-Degree Professional Certificate (p. 320)

Training and Credentials

- Cleveland Codes Tri-C Software Developers Academy (p. 238)

Information Technology (Workforce Training Institute)

Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 230)
- CompTIA Certified Computer Support Specialist (p. 243)
- Cleveland Codes Tri-C Software Developers Academy (p. 238)
- CISCO Network Support Technician (p. 234)
- Microsoft Administrative Professional (MAP) Academy (p. 354)

Visual Communication and Design (Graphic Design)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>ART-1050</td>
<td>Drawing I</td>
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<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
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<td>VC&amp;D-1061</td>
<td>History of Graphic Design</td>
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<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
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<tr>
<td>Art and Humanities requirements (p. 28)</td>
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<tr>
<td>Select one of the following:</td>
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<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
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<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
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<td>VCGD-1500</td>
<td>Advertising and Design</td>
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<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
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<td>Communication requirements (p. 27)</td>
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<tr>
<td>VC&amp;D-2301</td>
<td>Graphic Design and Illustration</td>
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<td>VCGD-2331</td>
<td>Brand Identity Design</td>
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<td>VCGD-2232</td>
<td>Typography II</td>
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<td>VCXX-xxxx</td>
<td>Visual Communication &amp; Design elective</td>
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<td>Social and Behavioral Science requirements (p. 29)</td>
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<td>VCGD-2400</td>
<td>Information Graphic Design</td>
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<td>VCGD-2431</td>
<td>Package Design</td>
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<td>VCGD-2631</td>
<td>Graphic Design Studio</td>
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<td>VCIM-2700</td>
<td>User Experience Design</td>
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<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
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Programming Electives

Select from the following courses to fulfill the programming elective requirement. Courses cannot be used for both a requirement and elective (in the case of an "or" selection above):

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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</tr>
<tr>
<td>IT-1150</td>
<td>Introduction to Web Programming</td>
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<tr>
<td>IT-2650</td>
<td>Java Programming</td>
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</tr>
<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
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</tr>
<tr>
<td>MATH-1xxx</td>
<td>MATH-1000 level course or higher</td>
<td>(p. 28)</td>
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<td>BADM-2010</td>
<td>Business Communications</td>
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<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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</tr>
<tr>
<td>Select one of the following:</td>
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<td>IT-2830</td>
<td>Cooperative Field Experience</td>
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</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
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<tr>
<td>IT-2320</td>
<td>Interactive Internet Programming</td>
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<td>IT-2351</td>
<td>Enterprise Database Systems</td>
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<td>IT-2660</td>
<td>Data Structures &amp; Algorithms</td>
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<td>IT-2030</td>
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<td>PHIL-2020</td>
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1. Course cannot be used for both a requirement and an elective. ITNT-2300 can only be used to meet an elective requirement for students who successfully complete IT-2830.
Related Degrees and Certificates
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business (p. 419)

Visual Communication and Design (Illustration)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ART-1050</td>
<td>Drawing I</td>
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<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
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<td>VCIL-1142</td>
<td>Illustration I</td>
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<td>VCPH-1450</td>
<td>Digital Imaging I</td>
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<td>ENG-101H</td>
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<td>VCIL-1640</td>
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<td>VCIL-2142</td>
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<td>Graphic Design and Illustration</td>
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<td>VCIL-2040</td>
<td>3D Motion</td>
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<td>VCIL-2341</td>
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<td>VCIM-2271</td>
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<td>VC&amp;D-2991</td>
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<td>Social and Behavioral Science/Natural Science Requirement (p. 29)</td>
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<td>VCXX-xxxx</td>
<td>Visual Communication &amp; Design Elective</td>
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Related Degrees and Certificates
- 3D Animation, Short-Term Certificate (p. 177)
- 3D Design, Short-Term Certificate (p. 178)
- Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business (p. 420)

Visual Communication and Design (Photography)

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
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<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
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<tr>
<td>VCPH-1150</td>
<td>History of Photography</td>
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<td>VCPH-1261</td>
<td>Photography I</td>
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<tr>
<td>ENG-1010</td>
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<tr>
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<tr>
<td>MATH-1xxx</td>
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<tr>
<td>VCGD-2232</td>
<td>Typography II</td>
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<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
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<tr>
<td>VCPH-2050</td>
<td>Commercial Studio Techniques I</td>
<td>3</td>
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<tr>
<td>VCPH-2160</td>
<td>Digital Video for Photographers</td>
<td>3</td>
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<tr>
<td>VCPH-2260</td>
<td>Photography II</td>
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</tr>
<tr>
<td>VCPH-2450</td>
<td>Digital Imaging II</td>
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<td>VCPH-2550</td>
<td>Commercial Studio Techniques II</td>
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<td>VCPH-2660</td>
<td>Photography III</td>
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<td>COMM-1010</td>
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<td>SOC-1010</td>
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<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
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<tr>
<td>MJS-1310</td>
<td>Film Appreciation</td>
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<td>VCPH-2530</td>
<td>Professional Practices in Photography</td>
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</tr>
<tr>
<td>VCPH-2541</td>
<td>Individual Projects - Photography</td>
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<td>VCPH-2760</td>
<td>Editorial Photography</td>
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<tr>
<td>VCPH-2990</td>
<td>Photographic Portfolio Preparation</td>
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</tr>
</tbody>
</table>

1 MARS-1180 Introduction to Media Arts and Filmmaking taken prior to Fall 2017 will be accepted in place of VCPH-2160.

Related Degrees and Certificates
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Visual Communication & Design with a Concentration in Photography, Associate of Applied Business (p. 421)

Visual Communication and Design (Web and Interactive Media)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.
### Academic Pathways - Cuyahoga Community College 2019-2020 Catalog

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>1000-level MATH course or higher (p. 28)</td>
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<td>Visual Communication Foundation</td>
<td>3</td>
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<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
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<tr>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML (Option A)</td>
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<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
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<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
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<td>VCIL-1640</td>
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<td>Communication requirement (p. 27)</td>
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<td>VCIM-1970</td>
<td>Midpoint Portfolio Review</td>
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<tr>
<td>or VC&amp;D-2830</td>
<td>Cooperative Field Experience</td>
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<tr>
<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction (Option A)</td>
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<tr>
<td>VCIM-1400</td>
<td>Game Design II: Game Engines (Option B)</td>
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<tr>
<td>VCIM-2271</td>
<td>2D Animation</td>
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<td>VCIM-2371</td>
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<td>Arts and Humanities requirements (p. 28)</td>
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<td>VCIM-2281</td>
<td>Web Publishing III: JavaScript (Option A)</td>
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<tr>
<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio (Option B)</td>
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<td>VCIM-2380</td>
<td>Interactive Media II: App Design</td>
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<td>VCIM-2072</td>
<td>Service Learning: Real World Experience in Web, Game Design, and Interactive Media</td>
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<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
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<td>Social and Behavioral Science/Natural Science requirements (p. 29)</td>
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<td>Select one of the following:</td>
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<tr>
<td>VCIM-2291</td>
<td>Web Publishing IV: Data-Driven Sites</td>
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<tr>
<td>VCIM-2401</td>
<td>Game Design IV:Game Publishing</td>
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</tbody>
</table>

### Options

#### (A) Technical Electives for Web Design & Construction Specialist
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIM-1570</td>
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<tr>
<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction</td>
<td>3</td>
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<tr>
<td>VCIM-2281</td>
<td>Web Publishing III: JavaScript</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2290</td>
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<td>3</td>
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<tr>
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<td></td>
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<tr>
<td>Total Credit Hours</td>
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<td></td>
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</tbody>
</table>

#### (B) Technical Electives for Game Designer
Game Designer: Helps students learn the fundamentals of 2D and 3D Game Design for various platforms including console, computer, and mobile devices.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
<td>3</td>
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<tr>
<td>VCIM-1400</td>
<td>Game Design II: Game Engines</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2401</td>
<td>Game Design IV:Game Publishing</td>
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<tr>
<td>Total Credit Hours</td>
<td>64</td>
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</tbody>
</table>

### Related Degrees and Certificates

- Game Design, Short-Term Certificate (p. 301)
- Visual Communication & Design (Graphic Design), Certificate of Proficiency (p. 418)
- Web Design & Development, Certificate of Proficiency (p. 425)
- Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business (p. 422)

### Public Safety

Tri-C has provided high-quality law enforcement and fire training in Northeast Ohio since 1982. As a Tri-C Center of Excellence, the Public Safety Center continues to provide basic training through the police, fire, private security, corrections and bailiff academies, as well as advanced training for law enforcement and fire professionals. The center now includes the Captioning and Court Reporting and Environmental, Health and Safety Technology programs as well.

The Public Safety Training Center on the Western Campus, which opened in September 2014, was renamed the KeyBank Public Safety Training Center in June 2016 in recognition of KeyBank's support of the College and the community. It features specialized simulation areas that provide opportunities for realistic, hands-on skills training. Tri-C’s public safety academies train more emergency response professionals than any other academy in Ohio.

- Captioning and Court Reporting
- Conflict Resolution and Peace Studies
- Criminal Justice
- Criminal Justice (Basic Police Academy)
- Criminal Justice (Corrections)
- Criminal Justice (Security Administration)
- Environmental, Health and Safety Technology
- Fire-Emergency Medical Services
- Public Safety (Workforce Training Program)
# Captioning and Court Reporting

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
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</table>

Select one of the following options:

**Option A**

- C&CR-1000 Introduction to Court Reporting
- C&CR-1300 Realtime Theory I

**Option B**

- C&CR-1100 Introduction to Voice Captioning
- C&CR-1200 Voicewriting I
- C&CR-1210 Voicewriting II

Select one of the following:

**Option A**

- C&CR-1331 Realtime Theory II
- C&CR-1335 Realtime Theory III

**Option B**

- C&CR-1220 Voicewriting III
- C&CR-1451 Speedbuilding and Transcription at 140 WPM
- C&CR-1341 Realtime Theory IV (Option A)
- C&CR-1601 Court Reporting Technology
- CJ-1120 Criminal Court Procedures
- C&CR-2300 Court Procedures
- C&CR-2401 Speedbuilding and Transcription at 180 WPM
- C&CR-2602 Technical Terminology
- Arts and Humanities (p. 28)
- Social and Behavioral Sciences requirement (p. 29)
- C&CR-2451 Speedbuilding and Transcription at 225 WPM
- C&CR-2470 Advanced Technology
- C&CR-2841 Internship
- C&CR-xxxx Any C&CR elective course

Communication requirement (p. 27) 1-3

1 Consecutive eight week course.

## OPTIONS

**(A) Court Reporting**

Court Reporting Option teaches students to utilize stenotype machines and software.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
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<tr>
<td>C&amp;CR-1300</td>
<td>Realtime Theory I</td>
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<td>C&amp;CR-1331</td>
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<td>C&amp;CR-1335</td>
<td>Realtime Theory III</td>
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<tr>
<td>C&amp;CR-1341</td>
<td>Realtime Theory IV</td>
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</tbody>
</table>

Additional program courses 51-53

Total Credit Hours 62-64

**(B) Voicewriting**

Voicewriting Option teaches students to utilize voice-recognition software and technology. Voicewriting technology enables users to create and edit documents, send email, access the internet and perform other functions in a hands-free environment.

<table>
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<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>C&amp;CR-1100</td>
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</tr>
<tr>
<td>C&amp;CR-1200</td>
<td>Voicewriting I</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1210</td>
<td>Voicewriting II</td>
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<tr>
<td>C&amp;CR-1220</td>
<td>Voicewriting III</td>
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</table>

Additional program courses 51-53

Total Credit Hours 60-62

## Related Degrees and Certificates

- Captioning and CART Providing, Short-Term Certificate (p. 223)
- Court Reporting Technologies, Short-Term Certificate (p. 251)
- Voicewriting, Short-Term Certificate (p. 424)
- Captioning and Court Reporting Certified Stenowriting, Certificate of Proficiency (p. 223)
- Captioning and Court Reporting Certified Voicewriting, Certificate of Proficiency (p. 224)
- Captioning and Court Reporting, Associate of Applied Business (p. 225)

## Conflict Resolution and Peace Studies

Coursework from the Short Term Certificate in Conflict Resolution and Peace Studies can be applied towards the requirements of an Associate of Arts Degree (p. 35) or an Associate of Science Degree (p. 38).

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>POL-2020</td>
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<tr>
<td>DEGR-xxxx</td>
<td>Select 1 or 2 Electives from below list</td>
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Select one of the following:

- DEGR-xxxx Select 1 or 2 Electives from below list 3-6

Cuyahoga Community College 2019-2020 Catalog 159
### Electives

Select from the below list of courses to fulfill elective requirements.

<table>
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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
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<td>BADM-1210</td>
<td>Labor-Management Relations</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>COMM-2160</td>
<td>Intercultural Communication</td>
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<td>HIST-1020</td>
<td>History of Civilization II</td>
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<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
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<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
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<td>HUM-1020</td>
<td>The Individual in Society</td>
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<td>PHIL-2020</td>
<td>Ethics</td>
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<td>PHIL-202H</td>
<td>Honors Ethics</td>
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<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
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<tr>
<td>POL-2050</td>
<td>Study Abroad in Peace and Conflict Resolution</td>
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<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
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<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
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<td>PSY-2020</td>
<td>Life Span Development</td>
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<td>PSY-202H</td>
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<td>PSY-2060</td>
<td>Adolescent Psychology</td>
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<td>PSY-2100</td>
<td>Introduction to Aging</td>
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<td>SOC-2010</td>
<td>Social Problems</td>
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<td>SOC-201H</td>
<td>Honors Social Problems</td>
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<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
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<td>WST-1510</td>
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<tr>
<td>WST-200H</td>
<td>Honors Women and Reform</td>
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### Related Degrees and Certificates

- Criminal Justice: Basic Police Academy, Certificate of Proficiency (p. 256)
- Criminal Justice, Associate of Applied Science (p. 255)

### Degrees and Certificates

- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)
- Criminal Justice (Corrections), Associate of Applied Science (p. 253)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 254)

### Training and Credentials

- Basic Police Academy (p. 213)
- Private Security Academy (p. 397)
Criminal Justice (Basic Police Academy)

<table>
<thead>
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<th>Code</th>
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<td>Criminal Evidence</td>
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<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher(p. 32)</td>
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</table>

Select one of the following:

| ENG-1010 | College Composition I                      | 3            |
| ENG-101H | Honors College Composition I                |              |

Select one of the following:

| IT-1090 | Computer Applications                       | 3            |
| IT-109H | Honors Computer Applications                 |              |
| CJ-1300 | Patrol Operations                           | 4            |
| CJ-1310 | Traffic Enforcement and Investigation       | 3            |
| CJ-1330 | Criminal Law                                | 3            |

| HLTH-1230 | Standard First Aid and Personal Safety | 1            |
| PE-1000 | Personal Fitness                           | 2            |

Select one of the following:

| ENG-1020 | College Composition II                     | 3            |
| ENG-102H | Honors College Composition II               |              |

| COMM-1010 | Fundamentals of Speech Communication        | 3            |
| COMM-101H | Honors Speech Communication                  |              |

| CJ-1320 | Ethics in Criminal Justice                  | 2            |
| CJ-2300 | Juvenile Delinquency                        | 2            |
| CJ-2370 | Fire Arms Techniques                        | 3            |
| CJ-2380 | Defensive Driving                           | 2            |
| CJ-2390 | The Investigative Process                   | 4            |

Arts and Humanities (p. 33)

| CJ-1020 | Introduction to Homeland Security           | 2            |
| CJ-1111 | Constitutional Law for Police               | 3            |
| CJ-2360 | Community Oriented Policing                 | 3            |
| CJ-2990 | Issues in Supervision                       | 4            |

Select one of the following:

| POL-1010 | American National Government                | 3            |
| POL-101H | Honors American National Government         |              |
| PSY-1010 | General Psychology                          |              |
| PSY-101H | Honors General Psychology                   |              |
| SOC-1010 | Introductory Sociology                      |              |
| SOC-101H | Honors Introductory Sociology               |              |
| UST-1010 | Introduction to Urban Studies               |              |

1 Students will receive credit for these courses upon successful completion of the Police Academy Program.

Related Degrees and Certificates

- Criminal Justice: Basic Police Academy, Certificate of Proficiency (p. 256)
- Criminal Justice with a Concentration in Basic Police Academy, Associate of Applied Science (p. 251)

Degrees and Certificates

- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice (Corrections), Associate of Applied Science (p. 253)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 254)

Training and Credentials

- Basic Police Academy (p. 213)

Criminal Justice (Corrections)

Degree program has open electives that can be fulfilled by Certificate required courses that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
<thead>
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<td>CJ-1000</td>
<td>Introduction to Criminal Justice</td>
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<td>CJ-1120</td>
<td>Criminal Court Procedures</td>
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<td>Criminal Evidence</td>
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<tr>
<td>CJ-1320</td>
<td>Ethics in Criminal Justice</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

| ENG-1010 | College Composition I                      | 3            |
| ENG-101H | Honors College Composition I                |              |

| CJ-1010 | Computers in Criminal Justice              | 3            |
| CJ-1500 | Community Intervention Resources           | 4            |

| MATH-1xxx | 1000-level MATH course or higher(p. 32) | 3            |

Select one of the following:

| ENG-1020 | College Composition II                     | 3            |
| ENG-102H | Honors College Composition II               |              |

| COMM-1010 | Fundamentals of Speech Communication        | 3            |
| COMM-101H | Honors Speech Communication                  |              |

Select one of the following:

| POL-1010 | American National Government                | 3            |
| POL-101H | Honors American National Government         |              |
| PSY-1010 | General Psychology                          |              |
| PSY-101H | Honors General Psychology                   |              |
| SOC-1010 | Introductory Sociology                      |              |
| SOC-101H | Honors Introductory Sociology               |              |
| UST-1010 | Introduction to Urban Studies               |              |

| CJ-2300 | Juvenile Delinquency                        | 2            |
| CJ-2510 | Community Supervision and Aftercare         | 4            |
| IT-1090 | Computer Applications                       | 3            |
| IT-109H | Honors Computer Applications                 | 3            |

Arts and Humanities (p. 33)

| CJ-2530 | Correctional Case Management                | 3            |
| CJ-2840 | Corrections: Principles and Practices       | 3            |
| CJ-2990 | Issues in Supervision                       | 4            |
Criminal Justice Elective 3
CJ-xxxx

Criminal Justice Elective 3
CJ-xxxx

Related Degrees and Certificates
- Criminal Justice: Basic Police Academy, Certificate of Proficiency (p. 256)
- Criminal Justice with a Concentration in Corrections, Associate of Applied Science (p. 253)

Degrees and Certificates
- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 254)

Criminal Justice (Security Administration)
Degree program has open electives that can be fulfilled by Certificate required courses that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
<thead>
<tr>
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<td>CJ-1000</td>
<td>Introduction to Criminal Justice</td>
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<tr>
<td>CJ-1050</td>
<td>Introduction to Security</td>
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<tr>
<td>CJ-1120</td>
<td>Criminal Court Procedures</td>
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<td>Ethics in Criminal Justice</td>
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<td>ENG-101H Honors College Composition I</td>
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<td>IT-109H Honors Computer Applications</td>
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<td>CJ-1010 Computers in Criminal Justice</td>
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<tr>
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<td>CJ-1400 Assets Protection</td>
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<td>MATH-1xxx 1000-level MATH course or higher</td>
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<td>COMM-1010 Fundamentals of Speech Communication</td>
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<td>COMM-101H Honors Speech Communication</td>
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<td>POL-1010 American National Government</td>
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<td>POL-101H Honors American National Government</td>
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<td>PSY-1010 General Psychology</td>
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<td>PSY-101H Honors General Psychology</td>
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<td>SOC-1010 Introductory Sociology</td>
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<td>SOC-101H Honors Introductory Sociology</td>
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<td></td>
<td>UST-1010 Introduction to Urban Studies</td>
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<td>CJ-2400 Security Management</td>
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<td>CJ-2410 Security Investigation</td>
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<td>CJ-2420 Legal Aspects of Private Security</td>
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<td>Arts and Humanities (p. 33)</td>
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<td>CJ-2440 Protection Services</td>
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<td>CJ-2990 Issues in Supervision</td>
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<td>CJ-xxxx Criminal Justice Elective</td>
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</tbody>
</table>

Related Degrees and Certificates
- Criminal Justice: Basic Police Academy, Certificate of Proficiency (p. 256)
- Criminal Justice with a Concentration in Security Administration, Associate of Applied Science (p. 254)

Degrees and Certificates
- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)
- Criminal Justice (Corrections), Associate of Applied Science (p. 253)

Training and Credentials
- Private Security Academy (p. 397)

Environmental, Health and Safety Technology
This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

Note: Select option (a) or (b) before beginning this program.

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<td>EHST-1301</td>
<td>Introduction to Environmental Technology</td>
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<td>EHST-1310</td>
<td>Introduction to Environmental Law</td>
<td>4</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
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<td></td>
<td>ENG-1010 College Composition I</td>
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<td></td>
<td>ENG-101H Honors College Composition I</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>IT-1090 Computer Applications</td>
<td>3</td>
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<tr>
<td></td>
<td>IT-109H Honors Computer Applications</td>
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<tr>
<td></td>
<td>EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
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<td>DEGR-XXXXX General Elective (See list below)</td>
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<td>BIO-1050 Human Biology</td>
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<td>&amp; BIO-105L and Human Biology Laboratory</td>
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Select one of the following:

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<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
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<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
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<td>EHST-1360</td>
<td>Fundamentals of OSHA Compliance ((Option A))</td>
<td>2</td>
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<tr>
<td>EHST-2341</td>
<td>Hazardous Material Transportation</td>
<td>2</td>
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<tr>
<td>EHST-2361</td>
<td>Environmental Sampling and Analysis</td>
<td>4</td>
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<tr>
<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response (Option B)</td>
<td>3-4</td>
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<tr>
<td>BADM-2330</td>
<td>Human Resource Management ((Option A))</td>
<td>3</td>
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<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology ((Option B))</td>
<td>3</td>
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<tr>
<td>ESCI-1410 &amp; ESCI-141L</td>
<td>Physical Geology and Lab in Physical Geology (Option B)</td>
<td>3</td>
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<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
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<td>EHST-2941</td>
<td>Field Experience</td>
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<td>EHST-2991</td>
<td>Professional Practice</td>
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<td>EHST-2221</td>
<td>Introduction to Safety and Health Management</td>
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<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
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<td>ENG-1020</td>
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<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
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Options

(A) Option A (Environmental, Health and Safety Management)

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<td>EHST-2352</td>
<td>Evacuation and Emergency Planning ((Option A))</td>
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<td>EHST-2221</td>
<td>Introduction to Safety and Health Management</td>
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<td>BADM-2330</td>
<td>Human Resource Management ((Option A))</td>
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<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology ((Option B))</td>
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<tr>
<td>ESCI-1410</td>
<td>Physical Geology and Lab in Physical Geology (Option B)</td>
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<tr>
<td>COMM-1000</td>
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<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
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<tr>
<td>EHST-2941</td>
<td>Field Experience</td>
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<tr>
<td>EHST-2991</td>
<td>Professional Practice</td>
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<tr>
<td>DEGR-xxxx</td>
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(B) Option B (Environmental Field Technology)

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<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response</td>
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<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
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<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
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<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
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Electives

Recommended for students planning to transfer into a four year degree program.

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<td>BIO-1500</td>
<td>Principles of Biology I</td>
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<tr>
<td>BIO-1510</td>
<td>Principles of Biology II</td>
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<td>CHEM-1300</td>
<td>General Chemistry I</td>
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<td>CHEM-130H</td>
<td>Honors General Chemistry I</td>
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<td>CHEM-130L</td>
<td>General Chemistry Laboratory I</td>
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<td>General Chemistry II</td>
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<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
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<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
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<td>GEOG-1030</td>
<td>Environmental Geography</td>
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<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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Recommended electives for students Pursuing Option A: Safety Technology

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<td>BIO-2500</td>
<td>Microbiology</td>
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<td>BADM-1460</td>
<td>Workers' Compensation Law</td>
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<td>BADM-2330</td>
<td>Human Resource Management</td>
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<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
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<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
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<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
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<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
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<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
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<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
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<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
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Recommended electives for students pursuing Option B: Environmental Field Technology

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<td>BIO-2150</td>
<td>Environmental Science</td>
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<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
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<td>CNST-1731</td>
<td>Construction Print Reading</td>
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<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
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<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
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<tr>
<td>CNST-2210</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
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<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
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<tr>
<td>ESCI-151L</td>
<td>Lab in Historical Geology</td>
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<tr>
<td>ESCI-1510</td>
<td>Historical Geology</td>
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Related Degrees and Certificates
- Environmental, Health and Safety Technology, Associate of Applied Science (p. 288)
- Environmental, Health and Safety Technology, Post-Degree Professional Certificate (p. 290)

Training and Credentials
- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)

Fire-Emergency Medical Services

<table>
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<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
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<tr>
<td>EMT-1320</td>
<td>Heavy Rescue</td>
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<tr>
<td>EMT-1330</td>
<td>Defensive Driving - EMT</td>
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FIRE-1100 | Principles of Emergency Services           | 3            |
FIRE-1200 | Principles of Fire and Emergency Services Safety and Survival | 2 |
FIRE-1500 | Fire Behavior and Combustion               | 2            |
FIRE-2321 | Fire Protection Systems                    | 2            |
EMT-1302 | Emergency Medical Technician - Basic       | 6            |
EMT-130L  | EMT Basic Practical Lab                    | 1            |
EMT-1401  | Anatomy & Physiology for Paramedics 1       | 4            |

Select one of the following:
- ENG-1010 | College Composition I                      | 3            |
- ENG-101H | Honors College Composition I                | 3            |
- EMT-2330 | Paramedic Theory I 2                       | 6            |
- EMT-2350 | Paramedic Theory III 2                     | 6            |
- MATH-1xxx | 1000-level MATH course or higher            | 3            |
- EMT-2340 | Paramedic Theory II 2                      | 6            |
- EMT-2360 | Paramedic Theory IV 2                      | 6            |

Select one of the following:
- ENG-1020 | College Composition II                     | 3            |
- ENG-102H | Honors College Composition II              | 3            |
- COMM-1010 | Fundamentals of Speech Communication       | 3            |
- COMM-101H | Honors Speech Communication                | 3            |
- EMT-2371 | Paramedic Capstone Course                  | 5            |

Select one of the following:
- POL-1010 | American National Government               | 3            |
- PSY-1010 | General Psychology                          | 3            |
- PSY-101H | Honors General Psychology                   | 3            |
- SOC-1010 | Introductory Sociology                      | 3            |
- SOC-101H | Honors Introductory Sociology               | 3            |
- UST-1010 | Introduction to Urban Studies               | 3            |

1 BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics.
2 Consecutive eight-week course.

Related Degrees and Certificates
- Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)
- Paramedic, Certificate of Proficiency (p. 378)
- Fire - Emergency Medical Services, Associate of Applied Science (p. 294)

Degrees and Certificates
- Emergency Medical Technology, Associate of Applied Science (p. 285)

Training and Credentials
- Fire Training Academy (p. 296)
- Advanced Fire Training (p. 551)

Public Safety (Workforce Training Program)
Training and Credentials
• Basic Police Academy (p. 213)
• Private Security Academy (p. 397)
• Fire Training Academy (p. 296)
• Advanced EMS Training (p. 183)

Science, Technology, Engineering, and Mathematics
• Associate of Science Degree/University Transfer
  • Automotive Technology
  • Construction Engineering Technology
  • Electrical/Electronic Engineering Technology
  • Electrical/Electronic Engineering Technology (Biomedical)
  • Electrical/Electronic Engineering Technology (Computer Networking Hardware)
  • Electrical/Electronic Engineering Technology (Digital Communications, including RF, Radio Frequency)
  • Electroneurodiagnostic Technology
  • Electroneurodiagnostic Technology (Polysonomygraphy)
  • Environmental, Health and Safety Technology
  • Integrated Systems Engineering Technology
  • Manufacturing Industrial Engineering Technology
  • Mechanical Engineering Technology
  • Operations Engineering Technology
  • Operations Engineering Technology (Automated Manufacturing)
  • Operations Engineering Technology (Engineering Management)
  • Plant Science and Landscape Technology

Associate of Science Degree/University Transfer
The Associate of Science degree is a flexible 2 year degree designed for students who want to begin their studies at Tri-C and plan to transfer to a baccalaureate degree-granting college or university for completion of a four-year degree. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Learn more about transfer requirements (p. 38)
Learn more about Science and Mathematics courses offered at Tri-C:
• Mathematics (p. 605)
• Physical Science (p. 652)
• Physics (p. 655)

Automotive Technology
Certificate(s) may have an open elective or an open Math, Communications, Arts & Humanities, Social & Behavioral Sciences, Natural and Physical Sciences that will not display on this page as an overlapping course. See Certificate Program page for complete list of certificate requirements.

<table>
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<th>Code</th>
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<th>Credit Hours</th>
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<tr>
<td>AUTO-1101</td>
<td>Introduction to Automotive Service Procedures</td>
<td>3</td>
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<tr>
<td>AUTO-1400</td>
<td>Automotive Alignment, Steering and Suspension</td>
<td>3</td>
</tr>
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<td>AUTO-1450</td>
<td>Automotive Braking Systems</td>
<td>3</td>
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<tr>
<td>AUTO-1502</td>
<td>Automotive Electrical Fundamentals</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<td>AUTO-1050</td>
<td>Numerical Applications in Automotive Service</td>
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</tr>
<tr>
<td>AUTO-1300</td>
<td>Automotive Engines</td>
<td>3</td>
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<tr>
<td>AUTO-1510</td>
<td>Automotive Electrical Systems</td>
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<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tr>
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<td></td>
<td>Social and Behavioral Sciences requirement (p. 33)</td>
<td>3</td>
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<tr>
<td>AUTO-2310</td>
<td>Manual Transmission and Drivetrain</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2350</td>
<td>Automotive HVAC</td>
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<td>AUTO-2400</td>
<td>Engine Performance</td>
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<td>AUTO-2940</td>
<td>Automotive Field Experience IV</td>
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<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
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<td></td>
<td>(p. 32)</td>
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<td>Arts and Humanities/Natural Sciences Requirements (p. 33)</td>
<td>3</td>
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<tr>
<td>AUTO-2300</td>
<td>Automatic Transmissions</td>
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</tr>
<tr>
<td>AUTO-2450</td>
<td>Automotive Electronic Engine Controls</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2701</td>
<td>Automotive Service Operations</td>
<td>3</td>
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<td>AUTO-2950</td>
<td>Automotive Field Experience V</td>
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<tr>
<td>DEGR-xxxx</td>
<td>General Elective (see Elective list)</td>
<td>3</td>
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<tr>
<td>DEGR-xxxx</td>
<td>General Elective (see Elective list)</td>
<td>3</td>
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</tbody>
</table>

ASEP Students must also complete AUTO-1940 Automotive Field Experience I, AUTO-1950 Automotive Field Experience II, AUTO-1960 Automotive Field Experience III, and AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP.

Electives
Recommend selecting from the below courses to fulfill elective requirement. Elective requirement may be fulfilled by other courses not listed here.

Cuyahoga Community College 2019-2020 Catalog
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
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<tr>
<td>GEN-1022</td>
<td>Strategies for Success</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
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</tbody>
</table>

**Related Degrees and Certificates**

- Automotive Maintenance and General Service, Short-Term Certificate (p. 211)
- Automotive Technology, Certificate of Proficiency (p. 212)
- Automotive Technology, Associate of Applied Science (p. 211)

**Construction Engineering Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
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<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1750</td>
<td>Construction Safety</td>
<td>3</td>
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<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
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<td>MATH-1540</td>
<td>Trigonometry</td>
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<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
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<tr>
<td>CNST-2201</td>
<td>Introduction to Building Information Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2210</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
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<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
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<tr>
<td>MET-1601</td>
<td>Technical Statics</td>
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<td>CNST-2330</td>
<td>Construction Scheduling</td>
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<tr>
<td>CNST-xxxx</td>
<td>CNST Elective 1</td>
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<td>MET-2200</td>
<td>Strength of Materials</td>
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<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
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<tr>
<td>ACCT-1311</td>
<td>Financial Accounting 2</td>
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</table>

1. CNST-1510 Green Building & Sustainability I recommended for university transfer
2. ACCT-1311 Financial Accounting recommended for university transfer

**Electrical/Electronic Engineering Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
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<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
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<tr>
<td>EET-1190</td>
<td>Printed Circuit Layout</td>
<td>2</td>
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<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>EET-1210</td>
<td>AC Electric Circuits</td>
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<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
<td>3</td>
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<td>PHIL-2020</td>
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<td>EET-2111</td>
<td>Industrial Electronics I</td>
<td>3</td>
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<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
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<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
<td>3</td>
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<tr>
<td>EET-2242</td>
<td>C and ASM Programming with Embedded Applications</td>
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<td>MATH-1540</td>
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<td>MATH-154H</td>
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<td>EET-2220</td>
<td>Electronics II</td>
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<td>EET-2290</td>
<td>Electrical Design Project</td>
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<tr>
<td>EET-2500</td>
<td>Instrumentation and Control</td>
<td>3</td>
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<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
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<td>Select one of the following:</td>
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<tr>
<td>EET-2520</td>
<td>Programmable Logic Controllers</td>
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<td>EET-xxxx</td>
<td>EET Elective Course</td>
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1. MATH-1580 Precalculus and MATH-1610 Calculus I or higher will be accepted in place of MATH-1530 College Algebra & MATH-1540 Trigonometry.
### Electives

Select from the below courses to fulfill elective requirement.

<table>
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<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>EET-1100</td>
<td>Introduction to Robotics</td>
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<tr>
<td>EET-1150</td>
<td>Basic Robotics with Math</td>
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<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
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</table>

### Related Degrees and Certificates

- Electronic Engineering Technician, Certificate of Proficiency (p. 283)
- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)

### Degrees and Certificates

- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)

### Electrical/Electronic Engineering Technology (Biomedical)

<table>
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<tr>
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<th>Title</th>
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<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
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<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
<td>1</td>
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<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal</td>
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<tr>
<td></td>
<td>Communication</td>
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<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
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<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<td>EET-1210</td>
<td>AC Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
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<td>ENG-2151</td>
<td>Technical Writing</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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<td>EET-2111</td>
<td>Industrial Electronics I</td>
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<tr>
<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
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<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
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<tr>
<td>EET-2400</td>
<td>Biomedical Instrumentation I</td>
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<tr>
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<td>MATH-154H</td>
<td>Honors Trigonometry</td>
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<td>EET-2220</td>
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<td>EET-2410</td>
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<td>EET-2490</td>
<td>Biomedical Design Project</td>
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### Related Degrees and Certificates

- Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)
- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)

### Degrees and Certificates

- Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 277)
- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)

### Electrical/Electronic Engineering Technology (Computer Networking Hardware)

<table>
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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
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<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<td>IT-109H</td>
<td>Honors Computer Applications</td>
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<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
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<tr>
<td>EET-1035</td>
<td>Operating Systems and Software for PC</td>
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<td>EET-1055</td>
<td>Computer Hardware Support</td>
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<td>ITN-2300</td>
<td>Networking Fundamentals</td>
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<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
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<td>ITN-2310</td>
<td>TCP/IP</td>
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<td>Network Administration I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>EET-1302</td>
<td>Cisco I: Basic Networking Technologies</td>
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<td>EET-1312</td>
<td>Cisco II Basic Routing and Switching</td>
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<td>1000-level MATH course or higher</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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</table>
EET-2302 Cisco III Intermediate Routing and Switching 3
EET-2312 Cisco IV Basic Wan Technologies 3
ITNT-2990 Networking Capstone 3

Natural and Physical Sciences requirement (lecture) (p. 34) 3

1 Consecutive eight week course.

Related Degrees and Certificates
• Cisco, Short-Term Certificate (p. 236)
• Computer Maintenance Technology, Certificate of Proficiency (p. 244)
• Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)

Degrees and Certificates
• Information Technology - Networking Software, Associate of Applied Business (p. 316)
• Information Technology - Cybersecurity, Associate of Applied Business (p. 315)
• Information Technology - Cybersecurity, Post-Degree Professional Certificate (p. 258)

Training and Credentials
• Cisco Technical Training Institute (p. 235)
• CompTIA Certified Computer Support Specialist (p. 243)

Electrical/Electronic Engineering Technology (Digital Communications, including RF, Radio Frequency)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
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<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
<td>1</td>
</tr>
<tr>
<td>EET-1190</td>
<td>Printed Circuit Layout</td>
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</tr>
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<td>MET-1100</td>
<td>Technology Orientation</td>
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<td>ENG-1010</td>
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<tr>
<td>PHIL-2020</td>
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<td>AC Electric Circuits</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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ENG-102H  Honors College Composition II
ENG-2151  Technical Writing
ENG-2120  Electronics I
ENG-2131  Digital Communication Fundamentals
ENG-2170  Signal Analysis
ENG-2242  C and ASM Programming with Embedded Applications
ITNT-2300  Networking Fundamentals
MATH-1540  Trigonometry
EET-2220  Electronics II
EET-2231  Wired & Wireless Communication
EET-2591  Communications Design Project
ITNT-2310  TCP/IP
PHYS-1220  College Physics II

Related Degrees and Certificates
• Electronic Engineering Technician, Certificate of Proficiency (p. 283)
• Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 277)

Degrees and Certificates
• Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)
• Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)

Electroneurodiagnostic Technology

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
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<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
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<tr>
<td>ENG-1010</td>
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</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>END-1300</td>
<td>Introduction to Electroneurodiagnostic Technology</td>
<td>2</td>
</tr>
<tr>
<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
<td>2</td>
</tr>
<tr>
<td>END-1350</td>
<td>Introduction to Electroencephalography (EEG)</td>
<td>3</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
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<td>END-1450</td>
<td>Intermediate Electroencephalography (EEG)</td>
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<tr>
<td>END-1500</td>
<td>Basic Evoked Potentials</td>
<td>3</td>
</tr>
<tr>
<td>END-1911</td>
<td>END Directed Practice I</td>
<td>3</td>
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<tr>
<td>END-2400</td>
<td>Intraoperative Monitoring for Electroneurodiagnostic Technologists</td>
<td>2</td>
</tr>
<tr>
<td>END-2451</td>
<td>Neonatal/Pediatric Electroencephalography</td>
<td>3</td>
</tr>
<tr>
<td>END-2911</td>
<td>END Directed Practice II</td>
<td>2</td>
</tr>
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<td>END-2300</td>
<td>Nerve Conduction Studies</td>
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<td>END-2412</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders</td>
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Electroneurodiagnostic Technology (Polysomnography)

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<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry $^1$</td>
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<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I $^2,3$</td>
<td>4</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tr>
<tr>
<td>END-1300</td>
<td>Introduction to Electroneurodiagnostic Technology</td>
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</tr>
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<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics $^5$</td>
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<td>Arts &amp; Humanities requirements (p. 33)</td>
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<td>BIO-2341</td>
<td>Anatomy and Physiology II $^6$</td>
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<td>Intermediate Electroencephalography (EEG)</td>
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<tr>
<td>END-1500</td>
<td>Basic Evoked Potentials</td>
<td>3</td>
</tr>
<tr>
<td>END-1911</td>
<td>END Directed Practice I</td>
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<tr>
<td>END-2451</td>
<td>Neonatal/Pediatric Electroencephalography</td>
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<td>END-2510</td>
<td>Principles of Polysomnography $^7,13$</td>
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<td>END-2911</td>
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<td>END-2412</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders $^8$</td>
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<td>END-2520</td>
<td>Intermediate Polysomnography $^9,13$</td>
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<td>END-2915</td>
<td>Polysomnography Directed Practice I $^{10,13}$</td>
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<tr>
<td>END-2530</td>
<td>Intermediate Polysomnography II $^{11,13}$</td>
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Select one of the following:

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<td>PHIL-2050</td>
<td>Bioethics</td>
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<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
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<tr>
<td>END-2990</td>
<td>Electroneurodiagnostic Capstone</td>
<td>1</td>
</tr>
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</table>

Communications/Mathematics/Natural Sciences (p. 31) $^2$ 3

### Related Degrees and Certificates

- Polysomnography (Sleep Disorders), Certificate of Proficiency (p. 394)
- Electroneurodiagnostic Technology, Associate of Applied Science (p. 281)

Electroneurodiagnostic Technology with a concentration in Polysomnography, Associate of Applied Science (p. 279)

### Environmental, Health and Safety Technology

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

**Note:** Select option (a) or (b) before beginning this program.
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EHST-1301</td>
<td>Introduction to Environmental Technology</td>
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<td>EHST-1310</td>
<td>Introduction to Environmental Law</td>
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<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
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<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
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<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
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<td>DEGR-XXXX</td>
<td>General Elective (See list below)</td>
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<td>Select one of the following:</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology and Human Biology Laboratory</td>
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<tr>
<td>&amp; BIO-105L</td>
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<tr>
<td>BIO-1060</td>
<td>Environment, Ecology, and Evolution, Environment, Ecology, &amp; Evolution Laboratory</td>
<td>4, 5</td>
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<tr>
<td>&amp; BIO-106L</td>
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<td>Select one of the following:</td>
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<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
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<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
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</tr>
<tr>
<td>EHST-1360</td>
<td>Fundamentals of OSHA Compliance ((Option A))</td>
<td>2</td>
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<tr>
<td>EHST-2341</td>
<td>Hazardous Material Transportation</td>
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<td>EHST-2361</td>
<td>Environmental Sampling and Analysis</td>
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<td>Select one of the following:</td>
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<tr>
<td>EHST-2352</td>
<td>Evacuation and Emergency Planning ((Option A))</td>
<td>7</td>
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<tr>
<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response (Option B)</td>
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<td>Select one of the following:</td>
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<tr>
<td>BADM-2330</td>
<td>Human Resource Management ((Option A))</td>
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</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology ((Option B))</td>
<td></td>
</tr>
<tr>
<td>&amp; ESCI-1410</td>
<td>Physical Geology and Lab in Physical Geology (Option B)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
<td>3</td>
</tr>
<tr>
<td>EHST-2941</td>
<td>Field Experience</td>
<td>1-4</td>
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<tr>
<td>EHST-2991</td>
<td>Professional Practice</td>
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<tr>
<td>DEGR-xxxx</td>
<td>General Elective course (See Recommended List Below)</td>
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<td>Select one of the following:</td>
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<td>EHST-2221</td>
<td>Introduction to Safety and Health Management</td>
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<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
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<td>Select one of the following:</td>
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**Options**

(A) **Option A (Environmental, Health and Safety Management)**

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<tr>
<td>EHST-1360</td>
<td>Fundamentals of OSHA Compliance</td>
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<tr>
<td>EHST-2352</td>
<td>Evacuation and Emergency Planning</td>
<td>2</td>
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<tr>
<td>EHST-2221</td>
<td>Introduction to Safety and Health Management</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>BADM-2330</td>
<td>Human Resource Management ((Option A))</td>
<td></td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology ((Option B))</td>
<td></td>
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<tr>
<td>&amp; ESCI-1410</td>
<td>Physical Geology and Lab in Physical Geology (Option B)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
<td>3</td>
</tr>
<tr>
<td>EHST-2941</td>
<td>Field Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>EHST-2991</td>
<td>Professional Practice</td>
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<tr>
<td>DEGR-xxxx</td>
<td>General Elective course (See Recommended List Below)</td>
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**Total Credit Hours**

61-64

(B) **Option B (Environmental Field Technology)**

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<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response</td>
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<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
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<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
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<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
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<tr>
<td>Additional program courses</td>
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**Total Credit Hours**

60-63
Electives
Recommended for students planning to transfer into a four year degree program.

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<td>BIO-1500</td>
<td>Principles of Biology I</td>
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<tr>
<td>BIO-1510</td>
<td>Principles of Biology II</td>
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<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>Honors General Chemistry I</td>
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</tr>
<tr>
<td>CHEM-130L</td>
<td>General Chemistry Laboratory I</td>
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<tr>
<td>CHEM-1310</td>
<td>General Chemistry II</td>
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<tr>
<td>CHEM-131H</td>
<td>Honors General Chemistry II</td>
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<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
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<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
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<td>GEOG-1030</td>
<td>Environmental Geography</td>
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<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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<td>PSY-1010</td>
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<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
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Recommended electives for students Pursuing Option A: Safety Technology

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<tr>
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<td>Microbiology</td>
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<td>BADM-1460</td>
<td>Workers’ Compensation Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2330</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
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<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
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Recommended electives for students pursuing Option B: Environmental Field Technology

<table>
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<tr>
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<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
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<tr>
<td>or PST-1300</td>
<td>Horticultural Botany</td>
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</tr>
<tr>
<td>BIO-2150</td>
<td>Environmental Science</td>
<td>3</td>
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<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2210</td>
<td>Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-151L</td>
<td>Lab in Historical Geology</td>
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</tr>
<tr>
<td>ESCI-1510</td>
<td>Historical Geology</td>
<td>3</td>
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</table>

Related Degrees and Certificates
- Environmental, Health and Safety Technology, Associate of Applied Science (p. 288)
- Environmental, Health and Safety Technology, Post-Degree Professional Certificate (p. 290)

Training and Credentials
- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)

Integrated Systems Engineering Technology
Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

Note: Students must select Option A, B, or C before starting this program. Courses required for program admission to a stackable certificate will be listed as overlapping courses.

<table>
<thead>
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<td>Mechanical/Electrical Print Reading</td>
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<td>ISET-1310</td>
<td>Mechanical Power Transmission</td>
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</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
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<tr>
<td>Option B:</td>
<td>ISET-1450</td>
<td>Heating Ventilation Air Conditioning/ Refrigeration I (Option B)</td>
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<tr>
<td>Option C:</td>
<td>ISET-1101</td>
<td>Welding Blue Print Reading (Option C)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>ISET-1340</td>
<td>Industrial Piping and Tubing</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1420</td>
<td>Applied Electricity II</td>
<td>3</td>
</tr>
<tr>
<td>Option A:</td>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power (Option A)</td>
</tr>
<tr>
<td>Option B:</td>
<td>ISET-1460</td>
<td>Fundamental Boiler Technology (Option B)</td>
</tr>
<tr>
<td>Option C - Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ISET-2100</td>
<td>Gas Metal Arc Welding (MIG) (Option C)</td>
<td></td>
</tr>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK) (Option O)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td>ISET-2200</td>
<td>Industrial Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>
ISET-2240  Applied National Electric Code 3
ISET-2500  Programmable Logic Controllers Maintenance I 3
PSY-1050  Introduction to Industrial/Organizational Psychology 3

Option A:
- MET-2300 Fluid Power (Option A)

Option B:
- ISET-2450 Heating Ventilation Air Conditioning/Refrigeration II (Option B)

Option C - Select one of the following:
- ISET-2110 Gas Tungsten Arc Welding (TIG) (Option C)
- ISET-2131 Oxyfuel Processes/Plasma Processes

BADM-1050  Professional Success Strategy 3
ISET-2210  Commercial Wiring 3
ISET-2220  Fundamentals of Electronics and Instrumentation 3
ISET-2990  Reliability Centered Maintenance 3

Option A - Select one of the following:
- ISET-2510 Programmable Logic Controllers Maintenance II (Option A) 1
- ISET-2520 Programmable Logic Controllers Maintenance III (Option A) 1

Option B:
- ISET-2460 Applied Boiler Technology (Option B) 1

1 Consecutive eight week course.

**(C) Integrated Systems\nWelding, Option (C)**
To complete this option, students must complete ISET-1101 Welding Blue Print Reading and two of the four welding courses listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1101</td>
<td>Welding Blue Print Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select two of the following:</td>
<td></td>
</tr>
<tr>
<td>ISET-2100</td>
<td>Gas Metal Arc Welding (MIG)</td>
<td>1</td>
</tr>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK)</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2110</td>
<td>Gas Tungsten Arc Welding (TIG)</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2131</td>
<td>Oxyfuel Processes/Plasma Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional program courses 51
Total Credit Hours 62

**Related Degrees and Certificates**
- Introductory Welding, Short-Term Certificate (p. 324)
- Welding Technology, Short-Term Certificate (p. 426)
- Industrial Welding, Certificate of Proficiency (p. 313)
- Mechatronics, Certificate of Proficiency (p. 344)
- Integrated Systems Engineering Technology, Associate of Applied Science (p. 321)

**Training and Credentials**
- Fast-Track Welding Certificate Program (p. 294)
- Electrical Technician Certificate of Completion (p. 274)
- Facility Technician (p. 293)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)
- Steelworkers for the Future (p. 413)
- Industrial Automation Certificate of Completion (p. 312)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)

**Manufacturing Industrial Engineering Technology**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>3</td>
</tr>
<tr>
<td>MET-1261</td>
<td>Product Ideation &amp; Design I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-1250</td>
<td>Processes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Introduction to Additive Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 60
Related Degrees and Certificates

- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)
- 3D Digital Design & Manufacturing Technology, Certificate of Proficiency (p. 179)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Manufacturing Industrial Engineering Technology, Associate of Applied Science (p. 334)

Training and Credentials

- CNC Technology Certificate Program (p. 239)
- Computer Aided Design (CAD) (p. 244)
- Right Skills Now CNC Operations Program (p. 408)
- Precision Machining Technology 3 (PMT 3) (p. 397)
- Manufacturing Technical Readiness Program (p. 336)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)
- Plexus AS9100C Understanding and Internal Auditing (Aerospace) (p. 391)
- Plexus: ISO 13485 – Medical Devices Understand and Internal Auditing (p. 392)
- Exemplar Global Certified ISO 9001 Internal Auditor Training with ISO/TS 16949 Automotive Emphasis (p. 292)
- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)
- Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditing Training (p. 293)

Mechanical Engineering Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>College Algebra ¹</td>
<td>4</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-2610</td>
<td>Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>MET-2740</td>
<td>Quality Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-1101</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MET-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-1601</td>
<td>Technical Statics ²</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I ³</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1020 | College Composition II                    | 3            |
- ENG-1021 | Honors College Composition II             | 3            |
- MET-1300 | Engineering Materials and Metallurgy       | 3            |
- MET-1621 | Technical Dynamics ⁴                      | 3            |
- MET-2041 | CAD II & GD&T                              | 3            |
- MET-2200 | Strength of Materials ⁵                    | 3            |
- MET-2240 | Mechanical Engineering Lab                 | 1            |
- MET-2300 | Fluid Power ⁶                               | 3            |
- HLTH-1230 | Standard First Aid and Personal Safety   | 1            |
- MET-2601 | 3D Solid Modeling                          | 3            |
- MET-2700 | Machine Design                             | 4            |
- PHYS-1220 | College Physics II                        | 4            |

Arts & Humanities/Social & Behavioral Sciences requirements (p. 33)

1 MATH-1610 Calculus I will be accepted in place of both MATH-1530 College Algebra and MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed to meet degree requirements.

2 MET-2610 Statics will be accepted in place of MET-1601 Technical Statics to meet this requirement. MET-2610 Statics, MET-2620 Dynamics, and MET-2630 Engineering Strength of Materials are recommended for students planning to transfer.
PHYS-2310 General Physics I & PHYS-2320 General Physics II will be accepted in place of PHYS-1210 College Physics I & PHYS-1220 College Physics II, PHYS-2310 General Physics I & PHYS-2320 General Physics II are recommended for students planning to transfer.

MET-2620 Dynamics will be accepted in place of MET-1621 Technical Dynamics to meet this requirement.

MET-2630 Engineering Strength of Materials will be accepted in place of MET-2200 Strength of Materials to meet this requirement.

MET-2320 Thermal Dynamics will be accepted in place of MET-2300 Fluid Power to meet this requirement.

Related Degrees and Certificates
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Mechanical Engineering Technology, Associate of Applied Science (p. 343)

### Operations Engineering Technology

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR ¹</td>
<td>3</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1631</td>
<td>Industrial Supply Logistics</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra ³</td>
<td>4</td>
</tr>
<tr>
<td>MET-2070</td>
<td>Introduction to Industrial Warehousing</td>
<td>2</td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II ⁴</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

ENG-102H | Honors College Composition II                                         | 3            |
MET-XXXX  | Elective                                                             | 3            |
EET-XXXX  | Elective                                                             | 3            |
EHST-1310 | Introduction to Environmental Law ⁵                                   | 4            |
MET-2400  | Statistical Quality Control                                           | 3            |
MET-2750  | Technical Operations Management                                       | 3            |

Select one of the following:

CHEM-1300/13H | General Chemistry I                                                  | 4-5          |
CHEM-130H | Honors General Chemistry I                                           | 4            |
PHYS-1210 | College Physics I                                                    | 3            |

¹ CNST-1750 Construction Safety may be used to meet this requirement.
² CNST-1731 Construction Print Reading may be used to meet this requirement.
³ MATH-1610 Calculus I can be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.
⁴ COMM-1010 Fundamentals of Speech Communication may be used to meet this requirement.
⁵ BADM-2151 Business Law may be used to meet this requirement.
⁶ MET-2430 Engineering Probability and Statistics or MATH-1410 Elementary Probability and Statistics I may be used to meet this requirement.

### Degrees and Certificates
- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)

### Operations Engineering Technology (Automated Manufacturing)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR ¹</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition II ⁴</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra ²</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

EHST-1351 | Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR ¹ | 3            |
MATH-1530 | College Algebra ²                                                     | 4            |
Degrees and Certificates

- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)
- Operations Engineering Technology, Associate of Applied Science (p. 371)

Operations Engineering Technology (Engineering Management)

Certificate(s) may have additional courses that do not overlap with the degree. Please see Certificate program page for complete listing of required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>5</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>5</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2430</td>
<td>Engineering Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>MET-2610</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2750</td>
<td>Technical Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>Elective</td>
<td>3</td>
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</tbody>
</table>

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- MATH-1610 Calculus I
- MET-2422 Fundamentals of Engineering Economics
- MET-2430 Engineering Probability and Statistics
- PHYS-2310 General Physics I
- Social & Behavioral Sciences requirement (p. 33)
- MET-2610 Statics
- MET-2750 Technical Operations Management
- MET-XXXX Elective

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I
- MATH-1580 Precalculus
- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- MATH-1610 Calculus I
- MET-2422 Fundamentals of Engineering Economics
- MET-2430 Engineering Probability and Statistics
- PHYS-2310 General Physics I
- Social & Behavioral Sciences requirement (p. 33)
- MET-2610 Statics
- MET-2750 Technical Operations Management
- MET-XXXX Elective

Select one of the following:

- CNST-1750 Construction Safety may be used to meet this requirement.
- MATH-1610 Calculus I can be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.
- IT-2670 C/C++ Programming Language or MET-2550 Engineering Analysis Using MATLAB will be accepted in place of MET-1120 Computer Applications and Programming to meet this requirement.
- EET-1161 Direct Current Circuits may be used to meet this requirement.
- COMM-1010 Fundamentals of Speech Communication may be used to meet this requirement.
- MATH-1410 Elementary Probability and Statistics I or MET-2430 Engineering Probability and Statistics may be used to meet this requirement.
- PHYS-2310 General Physics I may be used to meet this requirement.

Related Degrees and Certificates

- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
Related Degrees and Certificates
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 245)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Industrial Management Technology, Certificate of Proficiency (p. 312)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)

Degrees and Certificates
- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
- Operations Engineering Technology, Associate of Applied Science (p. 371)

Plant Science and Landscape Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>PST-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1411</td>
<td>Equipment Operations and Safety</td>
<td>2</td>
</tr>
<tr>
<td>PST-xxxx</td>
<td>Plant Science Elective (select from below list)</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:
- ENG-1010 College Composition I
- ENG-101H Honors College Composition I
- PSCI-1020 Everyday Chemistry
- PSCI-102L Everyday Chemistry Laboratory
- PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants
- PST-1420 Landscape Practices
- PST-xxxx Plant Science Elective (select from below list)

Select one of the following:
- IT-1090 Computer Applications
- IT-109H Honors Computer Applications
- PST-2950 Field Experience
- HLTH-1230 Standard First Aid and Personal Safety
- PHIL-1000 Critical Thinking
- PST-2321 Plant Pest Diagnostics
- PST-2370 Introduction to Turfgrass
- PST-xxxx Plant Science Elective (select from below list)
- PST-1600 Irrigation and Drainage

Related Degrees and Certificates
- Garden Center, Short-Term Certificate (p. 301)
- Landscape Contracting, Short-Term Certificate (p. 326)
- Landscape Design, Short-Term Certificate (p. 327)
- Landscape Horticulture, Short-Term Certificate (p. 328)
- Plant Science and Landscape Technology (Landscape Technician), Certificate of Proficiency (p. 389)
- Plant Science and Landscape Technology, Associate of Applied Science (p. 390)
.Net Programming, Post-Degree Professional Certificate

Post-Degree Professional Certificate in .NET Programming is designed to establish, update or enhance skills in .NET technologies including but not limited to C#, .NET Framework and ASP .NET including database and web technologies.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 155) and here (p. 154) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admissions Requirements

• MATH-0955 Beginning Algebra or appropriate score on the Math placement test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Develop programs in current high level languages (C# (preferred), C, Java), and utilize troubleshooting & debugging tools to locate and repair program code.
2. Produce web applications using C#, HTML, Database, ASP.NET, VB.NET, JavaScript, & CSS.
3. Utilize Visual Studio Data Interfaces to create, test, and debug data structures.
4. Develop detailed test plans to ensure applications works as designed.
5. Enhance/modify as directed existing .NET applications.
6. Build and query data structures for debug purposes and for simple data storage.
7. Develop data flow diagram to create a visual representation of data structures.
8. Work as a member of a programming team, performing modular programming tasks, to meet client needs.
9. Develop technical/code documentation to explain purpose, design, and functionality of code.

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1025</td>
<td>3</td>
</tr>
<tr>
<td>Information Technology Concepts for Programmers</td>
<td></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1150</td>
<td>3</td>
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<tr>
<td>IT-2351</td>
<td>4</td>
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<tr>
<td>IT-2620</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2030</td>
<td>4</td>
</tr>
<tr>
<td>IT-2320</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credit Hours 25

3D Animation, Short-Term Certificate

Completion of the Animation Certificate develops knowledge and essential skills in 2D and 3D Animation. Multi-disciplinary courses prepare students for the pursuit of academic and professional opportunities in Motion Graphics, 2D and 3D Design and Animation, Art, Illustration and Visualization.

Previous design or art experience is welcome, but not required to explore 2D and 3D Animation. Credits can also apply to associate degrees in Visual Communication and Design.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 113) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.
2. Work independently or as an organized member of a production team to meet client requirements on time and within budget.
3. Demonstrate professional work ethics and a passion for lifelong learning and networking.
4. Design a concept, strategy, and storyboard to visualize a product or message to reach the target audience that meets the production schedule and budget.
5. Use appropriate hardware, software, and resources to create high-quality animation in a production environment.
6. Composite and edit production elements to deploy a final product that meets client and distribution requirements.
7. Use design elements and the principles of animation as well as technical skills to create an appealing animation.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1050</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** 12

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIL-2040</td>
<td>3D Motion</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2341</td>
<td>Illustration for Story</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ART-2152</td>
<td>2D Animation</td>
<td></td>
</tr>
<tr>
<td>VCIM-2271</td>
<td>2D Animation</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td>3</td>
</tr>
<tr>
<td>VC&amp;D-2541</td>
<td>Individual Projects</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** 9

**Total Credit Hours** 21

---

**3D Design, Short-Term Certificate**

The certificate in 3D Design provides students with education and professional development opportunities in 3D Design and Visualization. Students will participate in a fast-track sequence focusing on the fundamentals of 3D Modeling and Animation.

This certificate is intended for students with previous design experience or students who want a focused educational experience in 3D Design and Visualization.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 113) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.
2. Work independently and as an organized member of a production team to meet client requirements on time and within budget.
3. Demonstrate professional work ethics and a passion for lifelong learning and networking.
4. Use design elements, principles and the basic building blocks of the 3D process. Modeling, lighting/texturing, animation and rendering to create a 3-D composition.
5. Design a concept, strategy and story board to visualize a product or message to reach the target audience that meets the production schedule and budget.
6. Use appropriate hardware, software and resources to create high quality computer graphic imagery in a production environment.
7. Composite/edit production elements to deploy final product that meets client distribution requirements.
8. Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable business.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2040</td>
<td>3D Motion</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Hours** 12

**Second Semester**

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIM-1400</td>
<td>Game Design II: Game Engines</td>
<td></td>
</tr>
<tr>
<td>VCIL-2440</td>
<td>3D Simulation</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2540</td>
<td>3D Studio</td>
<td></td>
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<tr>
<td>VCIL-2641</td>
<td>Illustration Studio</td>
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<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>VC&amp;D-2541</td>
<td>Individual Projects</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Hours** 9

**Total Credit Hours** 21
3D Digital Design & Manufacturing Technology, Certificate of Proficiency

This program is for the students who wish to acquire skills in the operations of Coordinate Measuring Machines (CMM), 3D printing, and the use of CAD/CAM packages in order to gain entry-level employments in varying operations involved in manufacturing with emphases on Additive Manufacturing. Students will get background knowledge to aid them in the field of (AM) Additive Manufacturing, (RP) Rapid Prototyping, and 3D Printing. There will be two (2) short-term certificates: 1) Digital Design & Product Innovation, 2) Digital Manufacturing & Product Launch, which together, lead to the award of Certificate of Proficiency in AM.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- For admission information, contact us at 216-987-2769.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II
- MATH-0955 Beginning Algebra or appropriate Math placement score.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines’ principles and operation, tools and materials to select operations’ parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.
6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1100 Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230 Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1250 Introduction to Additive Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-1261 Product Ideation &amp; Design I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>11</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1300 Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-2060 Product Ideation &amp; Design II</td>
<td>3</td>
</tr>
<tr>
<td>MET-2500 Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601 3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Summer Session</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MET-2151 3D Digital Design &amp; Printing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2160 3D Scanning, Reverse Engineering, and Quality Inspection</td>
<td>3</td>
</tr>
<tr>
<td>MET-2191 Additive Manufacturing Project Capstone</td>
<td>2</td>
</tr>
<tr>
<td>MET-2941 Additive Manufacturing Internship</td>
<td>1-4</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>9-12</strong></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>32-35</strong></td>
</tr>
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</table>
Accounting, Associate of Applied Business

The associate degree program in Accounting concentrates on providing a foundation in preparation for paraprofessional accounting careers and future advancement into supervisory positions. The program addresses the fundamentals of accounting education: namely, sound technical competence, verbal and written communication skills, and decision-making abilities. Current technology has been integrated to provide students with both the theory and practical skills necessary to meet the demands of today’s business environment. Check with the counseling department for 2 + 2 transfer opportunities, university partner programs and continuing education hours for the certified professional.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 95) about how certificate credits apply to the related degree.

Related Training and Credentials
• Enrolled Agent (p. 286)

Program Admission Requirements
• High School Diploma/GED not required, but highly recommended.
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information
• Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate financial and related information, both verbally and in writing, relative to their skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental accounting processes to properly record routine and nonroutine business transactions culminating with a complete set of financial statements.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record daily accounting tasks, analyze business results, forecast future activity levels and provide proforma projections of financial results and financial position.
5. Recognize when inaccuracies or other issues arise, including weaknesses in internal controls and ethical lapses that impact presentation of business results and operating activities, research alternatives, and proactively suggest solutions.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>Select one of the following:</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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Second Semester

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
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<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics 1</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td>3</td>
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<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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<tr>
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Third Semester

<table>
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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ACCT-xxxx</td>
<td>Accounting Elective</td>
<td>2-4</td>
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<tr>
<td>IT-xxxx</td>
<td>Finance Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
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Fourth Semester

<table>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>ACCT-2310</td>
<td>Intermediate Accounting I</td>
<td>4</td>
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<tr>
<td>ACCT-2xxx</td>
<td>Accounting 2000 level Elective</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2XXX</td>
<td>Accounting 2000 Level Elective</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>
FIN-2100  Financial Management  3
Credit Hours  18
Total Credit Hours  62-64

1  Recommend MATH-1470 Modern Mathematics for Business and Social Science I or higher for students planning to transfer to a 4 year college.

2  ACCT-1011 Business Math Applications and ACCT-1020 Applied Accounting cannot be used to fulfill elective requirements.

 Electives

Recommended Electives
Select from the following courses to fulfill the elective requirement.
Please check with counseling for transferability.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1030</td>
<td>Payroll</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2041</td>
<td>Business Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2050</td>
<td>Volunteer Income Tax Assistance</td>
<td>2</td>
</tr>
<tr>
<td>ACCT-2320</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2340</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2500</td>
<td>Governmental/Non-Profit Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2510</td>
<td>Auditing</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>ACCT-28xx</td>
<td>Accounting Special Topics</td>
<td>2-4</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
</tbody>
</table>

Accounting, Finance, and Tax Online Certificates

Program description

Corporate College, in partnership with ProTrain, is now offering a variety of quality online training programs in digital marketing, accounting, finance, and social selling. Programs are industry-standard, affordable solutions for individuals seeking to prepare for an in-demand career that will help move them forward to achieve the goal of education to success in the workforce.

The Accounting, Finance, and Tax courses focus on the tools and skills you need to compete in today’s ever-changing markets.

Understanding the language of finance and business performance is essential for professionals throughout an organization. Designed by our expert faculty, our finance certificates can help you build confidence in fundamental financial acumen and increase your ability to make smarter business decisions in any function — so you aren’t left out of the conversation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZFIN-1051</td>
<td>Chartered Tax Professional Certification (Online)</td>
<td>18</td>
</tr>
<tr>
<td>ZFIN-1052</td>
<td>Professional Risk Manager (PRM) Exam Prep (Online)</td>
<td>7</td>
</tr>
<tr>
<td>ZFIN-1053</td>
<td>Financial Risk Manager (FRM) Exam Prep (Online)</td>
<td>6.1</td>
</tr>
<tr>
<td>ZFIN-1054</td>
<td>Bookkeeping Administration Certification (Online)</td>
<td>28</td>
</tr>
<tr>
<td>ZFIN-1058</td>
<td>Comprehensive Tax Course with Career Package (Online)</td>
<td>6</td>
</tr>
<tr>
<td>ZFIN-1059</td>
<td>Retail Banking (Online)</td>
<td>10</td>
</tr>
<tr>
<td>ZFIN-1060</td>
<td>Global Capital Markets (Online)</td>
<td>10</td>
</tr>
<tr>
<td>ZFIN-1061</td>
<td>Banking Management Operations (Online)</td>
<td>10</td>
</tr>
<tr>
<td>ZFIN-1062</td>
<td>Financial Planning and Wealth Management (Online)</td>
<td>10</td>
</tr>
<tr>
<td>ZFIN-1063</td>
<td>Comprehensive Tax Course with Business Package (Online)</td>
<td>6</td>
</tr>
</tbody>
</table>

Program cost

Visit the Corporate College website here for pricing.

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive

Certificate of Completion

Related Programs/Training

- Accounting
- Payroll
- Enrolled Agent

To Register for and Learn more about Accounting, Finance, and Tax Online Offerings.
Accounting/CPA Preparation, Post-Degree Professional Certificate

The Accounting CPA/Preparation Certificate allows students who have earned a four-year degree in a field other than accounting to earn the required accounting credits to sit for the CPA exam. The CPA credential is the premier recognized credential in the field of accounting. Successful passing of the CPA exam will open a range of career opportunities in the public, private and non-profit accounting fields.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Related Training and Credentials

- Enrolled Agent (p. 286)

Program Admission Requirements

- Applicant must have already completed an associate degree or higher from an accredited college or university.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate financial and related information with internal and external constituents.
2. Work professionally, ethically, and with fiduciary responsibility to pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental accounting processes to properly record routine and nonroutine business transactions culminating with a complete set of financial statements.
4. Recognize when inaccuracies or other issues arise, including weaknesses in internal controls and ethical lapses that impact presentation of business results and operating activities, research alternatives, and proactively suggest solutions.
5. Meet the accounting requirements and be prepared to sit for the CPA exam.

Suggested Semester Sequence

Summer Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2041</td>
<td>Business Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2310</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>11</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-2320</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2510</td>
<td>Auditing</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2xxx</td>
<td>2000-level ACCT elective course</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credit Hours: 30

1 Requires FIN-2100 Financial Management as a prerequisite. Students who did not take this course or its equivalent as part of their bachelor’s degree program will need to complete this course prior to enrolling in ACCT-2510 Auditing.

ELECTIVES

Must select from below courses to fulfill elective requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-2340</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2500</td>
<td>Governmental/Non-Profit Accounting</td>
<td>4</td>
</tr>
</tbody>
</table>
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 98) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

- Students must be able to touch type at a combined speed and accuracy rate of 35 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of C prior to entrance to this certificate program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Utilize word processing, spreadsheet and presentation productivity software effectively.
4. Listen, read and provide verbal, written and electronic instructions, direction and procedures; responding appropriately to coworkers, clients and other professionals.
5. Create, input, edit, organize and print various business documents accurately and according to business industry standards.

Summer Start

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-1201</td>
<td>Word Processing</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
</tbody>
</table>

Program description

These programs provide training for all levels of EMS providers. Tri-C offers the Critical Care Emergency Medical Technician Paramedic (CCEMTP) and cross-over nurse to paramedic programs. This training updates information for recertification of all levels of EMS providers.

Program cost

Varies according to course

Financial aid eligibility

EMT basic and paramedic are financial-aid-eligible; non-credit advanced EMS training is not.

Upon completion students receive

Certificate of completion

Related Programs/Training

- Emergency Medical Technology
- Health Care (Workforce Training Programs)

Learn more about Advanced EMS Training

Advanced Massage Therapy, Short-Term Certificate

This certificate offers graduates of the Post-Degree Professional Certificate in Massage Therapy and Certificate of Proficiency in Massage Therapy advanced bodywork training which enhances a massage therapist's career by preparing them for positions in specialized areas of massage therapy. Associate of Applied degree students in Massage
Therapy are required to complete the Advanced Massage Therapy courses. Therefore, students graduating with the AAS degree in Massage Therapy will also receive the Short-Term Advanced Massage Therapy certificate.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 126) about how certificate credits apply to the related degree.

Program Admission Requirements
Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- Must be awarded a Certificate of Proficiency or Post-Degree Professional Certificate in Massage Therapy.
- Submit an "Intention to Complete the Short-Term Certificate" to the Massage Therapy Program. Call 216-987-2418 for more information.
- High School Diploma/GED or enrolled in College Credit Plus.
- Overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as “Conditional Status” students. Contact the Program Manager for more information regarding “Conditional Acceptance” and “Conditional Status.”
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an overall and/or MT course GPA below 2.5, but no lower than 2.0 will be placed on Conditional Status.

Other Information
- All students graduating with an Associate of Applied Science degree in Massage Therapy will also receive the Short-Term Certificate in Massage Therapy.
- Students must submit evidence of good health and required immunizations before acceptance to program. Students will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Criminal background check required.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.
2. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.
3. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage therapy.
4. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.
5. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.
6. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
7. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
8. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
</tr>
<tr>
<td>MT-2201</td>
<td>Massage Modalities and Career Paths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-2311</td>
<td>Advanced Massage Therapy</td>
</tr>
<tr>
<td>MT-2380</td>
<td>Advanced Massage Therapy Clinic</td>
</tr>
</tbody>
</table>

Total Credit Hours: 10

Applied Industrial Technology (Bricklaying & Allied Crafts), Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with U. S. Department of Labor, Bureau of Apprenticeship and Training. Bricklayers, stone masons and tile setters lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Student must attain journey level status before certificate is awarded.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

**Program Admission Requirements**
- High School Diploma/GED

**Other Information**
- Participants must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship & Training.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.
2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.
3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.
4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer’s specifications and design.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-1300 Basic Bricklaying Trade Skills</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1310 Bricklaying, Materials, Tools and Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1320 Basic Construction Drawings</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-1370 Construction Trades Safety</td>
<td>1</td>
</tr>
<tr>
<td>ATCM-1330 Concrete Construction Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1340 Arch Construction I</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-2120 Mortar Types and Identification</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-xxxx Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-2110 Concrete for Bricklaying</td>
<td>1</td>
</tr>
<tr>
<td>ATPT-2340 Blueprints II: Advanced Reading and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1390 Basic Welding Skills</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-2140 Introduction to Bricklayer Foreman</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer Completion</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-2510 Advanced Brick-Block Construction</td>
<td>2</td>
</tr>
</tbody>
</table>

**Applied Industrial Technology (Bricklaying & Allied Crafts), Associate of Applied Science**

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Bricklaying Allied Crafts, as well as earn an Associate of Applied Science degree with a concentration in Bricklaying & Allied Crafts. A three year apprenticeship emphasizes the skill set required of a skilled craftsman. Bricklaying is the art and craft of building and fabricating in stone and brick. Bricklayers work in a variety of construction settings, building chimneys, partitions, and walls, working with stone, cinder and gypsum block, and brick. The work requires physical stamina, a solid mathematical sense, and an artistic eye.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

**Program Admission Requirements**
- High School Diploma/GED

**Other Information**
- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.
2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.
3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.
4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer’s specifications and design.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-1300</td>
<td>Basic Bricklaying Trade Skills</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1310</td>
<td>Bricklaying, Materials, Tools and Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1320</td>
<td>Basic Construction Drawings</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-1370</td>
<td>Construction Trades Safety</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-1330</td>
<td>Wall Construction I</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-1340</td>
<td>Arch Construction I</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-2120</td>
<td>Mortar Types and Identification</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Communication requirement (p. 31) ³

Select one of the following:

- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective
- CNST-2330 Construction Scheduling

#### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATBL-2110</td>
<td>Concrete for Bricklaying</td>
<td>1</td>
</tr>
<tr>
<td>ATPT-2340</td>
<td>Blueprints II: Advanced Reading and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

Social and Behavioral Sciences requirement (p. 33)

Select one of the following:

- IT-1090 Computer Applications
- IT-109H Honors Computer Applications

Select one of the following:

- BADM-xxxx Business Elective
- CNST-2631 Construction Management Systems
- CNST-xxxx CNST Elective
- FIN-1061 Personal Finance

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATCM-1390</td>
<td>Basic Welding Skills</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-2140</td>
<td>Introduction to Bricklayer Foreman</td>
<td>1</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-xxxx Business Elective
- CNST-2990 Construction Estimating & Cost Analysis

#### Construction Management Electives

Recommended electives for Construction Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2631</td>
<td>Construction Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Business Management Electives

Recommended electives for Business Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Applied Industrial Technology (Building Construction), Short-Term Certificate

The Building Construction Program provides participants the opportunity to complete hands-on projects under the supervision of experienced craft-workers from the Building Construction (Trades) Program. Technical subject matter, applied mathematics, technical reading, blueprint interpretation, safety, health, and physical fitness are reinforced by
completion of an extensive array of trade specific assignments. In addition, other employment opportunities are made available through elective courses. The program courses are offered in a bundled format over multiple terms and in sequence.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

The Building Construction program prepares students to apply for entry into an apprenticeship program in the construction trades. Learn more about the related apprenticeship programs a student could apply to after completing this certificate program.

Gainful Employment Disclosure

Program Admission Requirements

- MATH-0910 Basic Arithmetic and Pre-Algebra with grade of "C" or higher, or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Increase the participant's awareness of career path options in the construction skilled trades.
2. Inform the participants of the physical, and environmental nature associated with the trades.
3. Prepare the participant for the construction contractor hiring process including math assessment.
4. Prepare the participant for physically rigorous nature of construction trades industry.
5. Inform the participant of the seasonal nature of work, travel and transportation requirements.
6. Develop or enhance the participant's spatial visualization skills, and mechanical aptitude.
7. Instruct the participant in construction related mathematical calculations.
8. Introduce the participant to skilled trades common practices.
9. Provide the participant an awareness of the benefits offered by merit and union employment
10. Introduce participants to college policies, resources, and best approaches to study, and examination.
11. Introduce participant to principles and practices in sustainability, alternative energy, conservation, recycling, and structural weatherization.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-1010</td>
<td>Construction Measurements and Calculations</td>
</tr>
<tr>
<td>AIT-1020</td>
<td>Comprehension and Communication for Construction</td>
</tr>
<tr>
<td>AIT-1030</td>
<td>Basic Construction Language</td>
</tr>
<tr>
<td>AIT-1040</td>
<td>Spatial and Mechanical Reasoning</td>
</tr>
<tr>
<td>AIT-1050</td>
<td>Construction Industry Orientation</td>
</tr>
<tr>
<td>AIT-1060</td>
<td>Construction Tools</td>
</tr>
<tr>
<td>AIT-1120</td>
<td>Building Construction Laboratory</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Applied Industrial Technology (Carpentry), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows, and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Carpentry.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.

8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.

9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.

10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, and windows to meet a commercial client’s specifications.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301</td>
<td>Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1320</td>
<td>Introduction to Hand and Power Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1351</td>
<td>Metal Studs and Dry Walls</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1381</td>
<td>Wood Framing</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1331</td>
<td>Concrete Footers and Walls</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1370</td>
<td>Layout</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2361</td>
<td>Suspended Ceilings</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-xxxx</td>
<td>Any ATCT elective course</td>
<td>2</td>
</tr>
<tr>
<td>Communication requirement (p. 31)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1491</td>
<td>Residential Steel Framing</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1610</td>
<td>Interior Finish</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2341</td>
<td>Concrete Specialities</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2370</td>
<td>Interior Systems Layout</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATCT-1390</td>
<td>Welding for Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2560</td>
<td>Interior Systems III</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

63

**Recommended ATCT Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1710</td>
<td>Stairs Layout</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2330</td>
<td>Trade Show</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2500</td>
<td>Exterior Finish</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2511</td>
<td>Concrete Columns and Decks</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2520</td>
<td>Stairs Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-2540</td>
<td>Roof Framing III</td>
<td>2</td>
</tr>
</tbody>
</table>

**Applied Industrial Technology (Cement Masonry), Associate of Applied Science**

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.
Program Admission Requirements

• High School Diploma/GED

Other Information

• Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.
2. Demonstrate pride of craftsmanship.
3. Recognize and comply with OSHA safety standards and contractor’s policies and procedures.
4. Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.
5. Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.
6. Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.
7. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
8. Maintain a fitness level to be able to meet the physical demands of the job.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1300</td>
<td>Fundamentals of Concrete Construction</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1310</td>
<td>Applied Technical Communications and Economics</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1320</td>
<td>Basic Plan Reading</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1330</td>
<td>Concrete Construction Equipment</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1340</td>
<td>OSHA Standards for Construction</td>
<td>3</td>
</tr>
<tr>
<td>ATCM-1400</td>
<td>Concrete/Cement Forming and Finishing</td>
<td>3</td>
</tr>
<tr>
<td>ATCM-1410</td>
<td>Commercial/Residential Form and Finish</td>
<td>4</td>
</tr>
<tr>
<td>ATCM-2320</td>
<td>Blueprint Fundamentals - Construction</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

Credit Hours 17

Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-2500</td>
<td>Fundamentals of Concrete Curing</td>
<td>1</td>
</tr>
<tr>
<td>ATCM-2510</td>
<td>Fundamentals of Concrete Joints</td>
<td>1</td>
</tr>
<tr>
<td>ATCM-2520</td>
<td>Basic Cement Patching</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-2530</td>
<td>Concrete Restoration</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- IT-1090 Computer Applications
- IT-109H Honors Computer Applications

Select one of the following:

- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

Credit Hours 15

Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATCM-2700</td>
<td>Advanced Concrete Finishing</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 31)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences/Natural and Physical Sciences requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

Credit Hours 15

Total Credit Hours 63

Recommended Business Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management (Small Business Management)</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Recommended Construction Management Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
</tbody>
</table>
Applied Industrial Technology (Communication Transport Systems), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Communication Transport Systems, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

• High School Diploma/GED
• 18 years old; Valid driver’s license

Other Information

• Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsperson.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
2. Communicate the scope of their work with crew members, general contractors, and end users.
3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.
4. Work in accordance with the Communication Workers of America’s (CWA) Code of Ethics.
5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.
6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.
7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.
8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.
9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users’ satisfaction.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCW-1010 Worker Safety for Communication Transport</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1020 Communications Worker History</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1040 Basic Information Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-xxxx Elective</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCW-1210 Introduction to Information Transport - Copper</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-xxxx Elective</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410 Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx CNST Elective</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>16</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCW-1250 Infrastructure Layout</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1270 Grounding and Bonding</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-2010 Information Transport - Fiber</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-2050 Audio Visual</td>
<td>1</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Social &amp; Behavioral Science/Natural and Physical Science requirement (see AAB/AAS Degree Requirements) (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx CNST Elective</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>15</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990 Contracting in a Diverse World</td>
<td>3</td>
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</tbody>
</table>
Electives

Recommended courses to fulfill elective requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2631</td>
<td>Construction Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>GEN-1010</td>
<td>Personal Development</td>
<td>2</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Program Admission Requirements

- Aptitude test
- High School Diploma/GED

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.
5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.
6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.
7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.
8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).
9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLB-1010 Craft Orientation for Laborers</td>
<td>1</td>
</tr>
<tr>
<td>ATLB-1020 Measurements and Leveling</td>
<td>2</td>
</tr>
</tbody>
</table>
ATLB-1210  Concrete Placement  2
ATLB-1340  Mason Tending  3
ATLB-xxxx  Laborer Elective  2
ATLB-xxxx  Laborer Elective  1
MATH-1xxx  1000-level MATH course or higher (p. 32)  3

Select one of the following:
  ENG-1010  College Composition I  3
  ENG-101H  Honors College Composition I

Credit Hours  17

Second Semester
ATLB-2650  Demolition Techniques  3
ATLB-xxxx  Laborer Elective  2
ATLB-xxxx  Laborer Elective  2
ATLB-xxxx  Laborer Elective  3

Select one of the following:
  CNST-xxxx  CNST Elective  3
  BADM-xxxx  Business Elective
  FIN-1061  Personal Finance

Select one of the following:
  IT-1090  Computer Applications  3
  IT-109H  Honors Computer Applications

Credit Hours  16

Third Semester
ATLB-2110  Small Engines & Concrete Saws  2
ATLB-2120  Pneumatic Tools  2
ATLB-xxxx  Laborer Elective  2
ATLB-xxxx  Laborer Elective  2

Communication requirement (p. 31)  3

Select one of the following:
  BADM-xxxx  Business Elective  3
  CNST-1xxx  CNST Elective

Credit Hours  14

Fourth Semester
AIT-2990  Contracting in a Diverse World  3

Arts & Humanities requirement (p. 33)  3
Social & Behavioral Science requirement (p. 33)  3

Select one of the following:
  BADM-xxxx  Business Elective  3
  CNST-1xxx  CNST Elective

Select one of the following:
  BADM-xxxx  Business Elective  3
  CNST-2131  Construction Methods and Materials

Credit Hours  15

Total Credit Hours  62

Construction Management Electives
Recommended courses to fulfill Construction Management elective credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2330</td>
<td>Construction Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2631</td>
<td>Construction Management Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Electives
Recommended courses to fulfill business elective credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Applied Industrial Technology (Drywall Finishing), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Drywall Finisher, as well as earn an Associate of Applied Science degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Drywall Finisher finishes drywall surfaces by applying materials and sanding in preparation for final painting or treatment.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.
Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.
7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATDW-1310</td>
<td>Tools and Methods of Drywall Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATDW-1330</td>
<td>Materials and Methods of Drywall Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1300</td>
<td>Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320</td>
<td>Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
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Total Credit Hours 18

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATDW-1620</td>
<td>Taping Tools &amp; Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1340</td>
<td>Wall Preparation and Repair</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1650</td>
<td>Blueprints I: Construction Fundamentals</td>
<td>2</td>
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Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
</tbody>
</table>

Communication requirement (p. 31) 3

Total Credit Hours 15

Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATDW-2350</td>
<td>Filling Compounds/Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2320</td>
<td>Safe Work Practices</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
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Select one of the following:

<table>
<thead>
<tr>
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<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
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</table>

Total Credit Hours 11

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATDW-2340</td>
<td>Texturing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2340</td>
<td>Blueprints II: Advanced Reading and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2360</td>
<td>Foreman Training</td>
<td>2</td>
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<tr>
<td>ATPT-xxxx</td>
<td>ATPT elective course</td>
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</tr>
<tr>
<td>Social &amp; Behavioral Sciences/Natural and Physical Sciences requirement (p. 33)</td>
<td>3</td>
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Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
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<td>Business Elective</td>
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<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
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Total Credit Hours 17

Electives

Technical Electives
Recommended courses fulfill ATPT elective requirements:

<table>
<thead>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ATPT-1330</td>
<td>Filling Compounds and Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1620</td>
<td>Wood Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1630</td>
<td>Color Mixing and Matching</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2310</td>
<td>Wall Covering &amp; Paperhanging</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-2380</td>
<td>Special Coating and Decorative Finishes</td>
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Business & Supervision Electives
Recommended courses to fulfill business electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
</tbody>
</table>

1 ENG-2151 Technical Writing highly recommended.
Applied Industrial Technology (Floorlaying), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Floorlayer, as well as earn an Associate of Applied Science degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor; scribes, cuts, fits, layout and seams tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

• Intent-to-hire agreement with participating contractor

Other Information

• An apprenticeship is a full-time commitment in which the apprentices work most of the time in the industry and attend classes on regular intervals to learn new skills.
• Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.
2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.
3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.
4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.
5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.
6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.
7. Work independently and in a team environment to accomplish the job in a timely and professional manner.
8. Sit for the install certification.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301 Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1450 Floorlaying Concepts 1</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1600 Modular Tile 1</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1610 Jute &amp; Action Back Carpeting 1</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1620 Ceramics I</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATFL-1630 Wood Flooring I</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1640 Sheet Goods Concepts</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1650 Sheet Goods - Flash Coving</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1720 Sheet Goods - Geometric Layout and Inlay</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1730 Unitary Back and Enhancer Back Carpeting</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1731 Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ATFL-1300 Residential Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-xxxx Floorlaying Elective</td>
<td>2</td>
</tr>
<tr>
<td>CNST-2131 Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 31)</td>
<td>3</td>
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<td></td>
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<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>AIT-2990 Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATFL-2300 Ceramics II</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-2400 Sheet Goods-Specialty Products</td>
<td>2</td>
</tr>
<tr>
<td>CNST-2631 Construction Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990 Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science requirement (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Total Credit Hours: 61

1 Consecutively scheduled courses.
Applied Industrial Technology (Glazing), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Glazier, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. The glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED required.
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Interpret drawings and use principles of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.
7. Sit for welding certification as it relates to the glazing industry.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-1330 Hand Tools for Glaziers</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1300 Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320 Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
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<tr>
<td>CNST-1xxx CNST Elective</td>
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<tr>
<td>CNST-1731 Construction Print Reading</td>
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<tr>
<td>FIN-1061 Personal Finance</td>
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<td>Select one of the following:</td>
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<tr>
<td>ENG-1010 College Composition I</td>
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<tr>
<td>ENG-101H Honors College Composition I</td>
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</tr>
<tr>
<td>Credit Hours</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ATGL-1620 Glass and Mirror Replacement and Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-1630 Basic Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-1640 Door Fabrication and Installation</td>
<td>2</td>
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<tr>
<td>ATPT-1650 Blueprints I: Construction Fundamentals</td>
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<tr>
<td>Communication requirement (p. 31)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>BADM-xxxx Business Elective</td>
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<td>CNST-1xxx CNST Elective</td>
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<tr>
<td>CNST-2131 Construction Methods and Materials</td>
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<tr>
<td>ACCT-1011 Business Math Applications</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
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<tr>
<td>IT-109H Honors Computer Applications</td>
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</tr>
<tr>
<td>Credit Hours</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>ATGL-2330 Transits, Leveling Instruments, and Lasers</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-2350 Curtainwall Fabric &amp; Install</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2320 Safe Work Practices</td>
<td>3</td>
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<tr>
<td>Arts &amp; Humanities requirements (p. 33)</td>
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<td>ATDW-xxxx ATDW Elective course</td>
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<tr>
<td>ATGL-xxxx ATGL Elective course</td>
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<tr>
<td>ATPT-xxxx ATPT Elective course</td>
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<td>Select one of the following:</td>
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</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
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</table>
Applied Industrial Technology (Ironworking), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in ironworking, as well as an Associate of Applied Science degree. A three-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Aptitude Test
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td>15</td>
</tr>
</tbody>
</table>

Construction Management Electives

Recommended electives for Construction Management:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

Business & Supervision Electives

Recommended electives for Business & Supervision:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Entrepreneur Electives

Recommended electives for Entrepreneur:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Personal Finance Electives

Recommended electives for Personal Finance:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
</tbody>
</table>
1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.

2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.

3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.

4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.

5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.

9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>ATIW-1300</td>
<td>Structural Steel Concepts</td>
</tr>
<tr>
<td>1</td>
<td>ATIW-1310</td>
<td>Safety for Ironworkers</td>
</tr>
<tr>
<td>1</td>
<td>ATIW-1320</td>
<td>Steel Construction Procedures</td>
</tr>
<tr>
<td>3</td>
<td>ATIW-1330</td>
<td>Erection Concepts &amp; Practices</td>
</tr>
<tr>
<td>1</td>
<td>ATIW-1410</td>
<td>Practical Applications of Reinforcing Steel</td>
</tr>
<tr>
<td>3</td>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td></td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ATIW-1600</td>
<td>Welding Fundamentals for Ironworkers</td>
</tr>
<tr>
<td>3</td>
<td>ATIW-2300</td>
<td>Shielded Metal Arc Welding</td>
</tr>
<tr>
<td>3</td>
<td>ATIW-2310</td>
<td>Welding Specialties</td>
</tr>
<tr>
<td>3</td>
<td>ATIW-2320</td>
<td>Welding Blueprints and Design</td>
</tr>
<tr>
<td>3</td>
<td>Communication requirement (p. 31)</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td></td>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>ATIW-2330</td>
<td>Pre-Construction Planning of Speciality Applications</td>
</tr>
<tr>
<td>2</td>
<td>ATIW-2340</td>
<td>Specialty Installation Equipment</td>
</tr>
<tr>
<td>2</td>
<td>ATIW-2350</td>
<td>Ornamental Systems &amp; Railings</td>
</tr>
<tr>
<td>2</td>
<td>ATIW-2360</td>
<td>Ornamental Applications</td>
</tr>
<tr>
<td>3</td>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td></td>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td></td>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
</tbody>
</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
</tr>
<tr>
<td>3</td>
<td>ATIW-2500</td>
<td>Rigging and Hoisting</td>
</tr>
<tr>
<td>3</td>
<td>Social &amp; Behavioral Science requirement (p. 33)</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td></td>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BADM-xxxx</td>
<td>Business Elective</td>
</tr>
<tr>
<td></td>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
</tr>
</tbody>
</table>

#### Recommended Business Electives

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BADM-1020</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>3</td>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
</tr>
<tr>
<td>3</td>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
</tr>
<tr>
<td>3</td>
<td>BADM-1301</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>3</td>
<td>BADM-2151</td>
<td>Business Law</td>
</tr>
<tr>
<td>5</td>
<td>BADM-2450</td>
<td>New Business Development</td>
</tr>
</tbody>
</table>

#### Recommended Construction Management Electives

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
</tr>
<tr>
<td>3</td>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
</tr>
<tr>
<td>3</td>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
</tr>
<tr>
<td>3</td>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
</tr>
</tbody>
</table>

1. ENG-2151 Technical Writing highly recommended.
Applied Industrial Technology (Lifting Technologies), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman.

Program contact: Learn more

Program Admission Requirements

- High School Diploma/GED
- Participant must be an employee of Mazella Lifting Technologies

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Inspect, evaluate, and report on condition of overhead cranes and rigging gear, and prioritize findings from the inspection in accordance with regulatory and industry standards.
2. Perform routine, preventative, and required maintenance, repair, and testing of overhead cranes and rigging gear in accordance with manufacturers’, regulatory, and industry standards.
3. Analyze customers’ needs, research existing technologies, and apply appropriate technologies to upgrade overhead cranes and rigging gear.
4. Develop, specify, and manufacture overhead cranes and specialized rigging gear to support the demands of customer applications using current communication technologies and tools.
5. Apply the Mazella Way and integrate it into all interactions.
6. Utilize Mazella inspection, testing, reporting, and ERP software.
7. Operate specialized equipment and utilize Mazella manufacturing techniques for rigging gear.
8. Observe and apply quality assurance techniques and ISO quality management system, standards, and processes.
10. Demonstrate effective listening, verbal, written and conflict management skills to communicate accurately and respectfully with coworkers and customers.
11. Comply with applicable internal and industry safety standards.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLT-1000 Orientation for Lifting Tech</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1010 Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1020 Introduction to Lifting &amp; Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1040 Safety in Lifting and Rigging I</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1050 Rigging Geometric</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLT-1030 Introduction to Wire Rope</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1060 Layout &amp; Fabrication Procedure</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1070 Blue Print Reading for Rigging I</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1080 Lifting Technologies Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1090 Introduction to Welding for Lifting Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Communication/Mathematics/Natural Science requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>16</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLT-1100 Introduction to Inspections: Field Tablets IC3</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1110 Technologies in Rigging</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2010 Lifting Project Module</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2020 Proof Test Operations</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2040 Wire Rope Applications I</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-xxxx Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities/Natural and Physical Sciences requirement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990 Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective (see general elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx General Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Electives

Select from below courses to fulfill Technical Elective Requirements.
Find Your Major or Program - Cuyahoga Community College 2019-2020 Catalog

**Applied Industrial Technology (Manufacturing Technology), Associate of Applied Science**

**Program Admission Requirements**
- High School Diploma/GED
- Applicants must be sponsored by a participating employer

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.
2. Be reliable, conscientious, respectful and committed to the organization’s mission.
3. Apply principles and practice of safety while performing daily tasks.
4. Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.
5. Apply advanced concepts of shop math, blueprint reading, inspection and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMT-1100</td>
<td>Manufacturing Skills I</td>
</tr>
<tr>
<td>ATMT-1110</td>
<td>Manufacturing Skills II</td>
</tr>
<tr>
<td>ATMT-1200</td>
<td>Machine Tool Theory</td>
</tr>
<tr>
<td>ISET-1310</td>
<td>Mechanical Power Transmission</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
</tr>
<tr>
<td>ENG-101H</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMT-1300</td>
</tr>
<tr>
<td>ATMT-1500</td>
</tr>
</tbody>
</table>

Select from below courses to fulfill General Elective Requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1040</td>
<td>Principles &amp; Practices of Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1070</td>
<td>Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BT-1000</td>
<td>Keyboarding and Document Formatting</td>
<td>2</td>
</tr>
<tr>
<td>BT-1201</td>
<td>Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2210</td>
<td>Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>Any course in Communications (p. 31)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Any course in Arts and Humanities/Social and Behavioral Sciences/Natural and Physical Sciences (p. 33)

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The Apprenticeship Program prepares the student to work as a skilled Machinist, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Machinists or Tool Makers are involved in the manufacture of precision machined metal components used by many industries including the aerospace, automotive, medical, and energy fields. Many of the machine tools are run by computer numerical control - CNC. The Machinist of today must possess a wide skill set of mathematical knowledge, technical disciplines, and the ability to work independently and in team environments. Working from blueprints or drawings, machinists use a variety of specialized metal cutting machine tools to produce precision parts.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.
**Applied Industrial Technology (Millwrighting), Associate of Applied Science**

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Millwrighting, as well as earn an Associate of Applied Science degree. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment.

**Program contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

**Program Admission Requirements**
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

**Other Information**
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.
9. Move and install machinery using forklifts, rigging hardware and tools in a safe, effective and efficient manner.
10. Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.
11. Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301 Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1320 Introduction to Millwrighting</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1330 Print Reading for Millwrights</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1350 Hydraulics/Centrifugal Pumps</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090 Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMW-1450</td>
<td>Heavy Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1490</td>
<td>Millwright Pile Driver Weld I</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1720</td>
<td>Machinery Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2120</td>
<td>Shaft Alignment</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communication requirement (p. 31)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2230</td>
<td>Millwright Pile Driver Weld II</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2350</td>
<td>Floor Conveyor</td>
<td>2</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td>3</td>
</tr>
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<td></td>
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<td>14</td>
</tr>
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</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATMW-2520</td>
<td>Millwright Pile Driver Weld III</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2700</td>
<td>Millwright-Pile Driver Weld IV</td>
<td>2</td>
</tr>
<tr>
<td>ATXX-xxxx</td>
<td>ATxx Elective Apprenticeship course</td>
<td>2-3</td>
</tr>
<tr>
<td>CNST-2631</td>
<td>Construction Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Soc &amp; Behavioral Science requirement (p. 33)</td>
<td>3</td>
</tr>
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<td>Total Credit Hours</td>
<td>18-19</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>63-64</td>
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</tbody>
</table>

1 Consecutively scheduled course.

**Applied Industrial Technology (Operating Engineers), Associate of Applied Science**

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Operating Engineers, as well as earn an Associate of Applied Science degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers.

**Program Admission Requirements**

- Aptitude Test
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

**Other Information**

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.
2. Operate and maintain a variety of construction equipment in a safe and productive manner.
3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.
4. Plan and manage personal and professional life to accommodate all job requirements, including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.
5. Commit to and understand the nature of working in the construction trade, especially, planning for seasonal work.
6. Communicate verbally, nonverbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.
7. Be prepared to sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOE-1100</td>
<td>Operating Engineering Concepts</td>
</tr>
<tr>
<td>ATOE-1200</td>
<td>Basic Mechanical Concepts</td>
</tr>
<tr>
<td>ATOE-1650</td>
<td>Graders and Plans</td>
</tr>
</tbody>
</table>
MATH-1xxx  
1000-level MATH course or higher  

Select one of the following:  
BADM-xxxx  Business Elective  
CNST-xxxx  CNST Elective  

Select one of the following:  
ENG-1010  College Composition I  
ENG-101H  Honors College Composition I  

Communication requirement (p. 31)  

Select one of the following:  
BADM-xxxx  Business Elective  
CNST-xxxx  CNST Elective  

Select one of the following:  
IT-1090  Computer Applications  
IT-109H  Honors Computer Applications  

Credit Hours  
18  

ATOE-2680  Hazardous Material Handling and Field Safety  

Business Electives  
Recommended electives in Business  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
</tbody>
</table>

Construction Management Electives  
Recommended electives in Construction Management  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

Applied Industrial Technology  
(Painting), Associate of Applied Science  

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Painter, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast.  

Program contact: Learn more  

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are met.

Technical Electives  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOE-2650</td>
<td>Safety Training Passport</td>
<td>1</td>
</tr>
<tr>
<td>ATOE-2670</td>
<td>Rough Terrain Forklift Operation</td>
<td>2</td>
</tr>
</tbody>
</table>

1  ENG-2151 Technical Writing or COMM-1000 Fundamentals of Interpersonal Communication highly recommended.  
2  Recommend PSY-1050 Introduction to Industrial/Organizational Psychology.
completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training
- High School Diploma/GED
- Appropriate score on English Placement Test: eligibility at or above ENG-1001 Intensive College Reading & Writing
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer’s standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.
7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-1300</td>
<td>Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320</td>
<td>Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-1330</td>
<td>Filling Compounds and Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1340</td>
<td>Wall Preparation and Repair</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Select one of the following:

- BADM-xxxx Business Elective
- CNST-1xxx CNST Elective

### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-1620</td>
<td>Wood Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1630</td>
<td>Color Mixing and Matching</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1640</td>
<td>Rigging &amp; Hoisting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1650</td>
<td>Blueprints I: Construction Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1660</td>
<td>Labor in American Society</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-2320</td>
<td>Safe Work Practices</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-2330</td>
<td>Spray &amp; Industrial Painting</td>
<td>2</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- ATGL-2400 Advanced Rigging & Hoisting
- ATPT-2370 Abrasives Blasting Techniques
- ATPT-2380 Special Coating and Decorative Finishes

Select one of the following:

- FIN-1061 Personal Finance
- BADM-xxxx Business Elective
- CNST-1731 Construction Print Reading

### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-2340</td>
<td>Blueprints II: Advanced Reading and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2350</td>
<td>Advanced Spray and Industrial Painting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2360</td>
<td>Foreman Training</td>
<td>2</td>
</tr>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 31)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Beh Sciences/Natural and Physical Sciences requirement (p. 33)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

- BADM-xxxx Business Elective

### Total Credit Hours

- Total Credit Hours: 65

1. ATPT-2370 Abrasives Blasting Techniques and ATPT-2380 Special Coating and Decorative Finishes may each be used only once.
Applied Industrial Technology (Pile Driving), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Pile Driving, as well as an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.
9. Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.
10. Setup and use crane(s) to support the equipment and drive various types of piling.
11. Be certified in rigging and welding.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>ATCT-1301 Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATCT-1310 Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATMW-1340 Introduction to Pile Driving</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATPD-1330 Print Reading for Pile Driving</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CNST-1281 Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH-1xxx 1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG-1010 College Composition I</td>
<td></td>
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<tr>
<td></td>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>ATMW-1450 Heavy Rigging</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATMW-1490 Millwright Pile Driver Weld I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATPD-1310 Technical Measurements, Hand &amp; Power Tool Use in Pile Driving</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATPD-1370 Pile Driving on Land and Water</td>
<td>2</td>
</tr>
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<td></td>
<td>CNST-1510 Green Building &amp; Sustainability I</td>
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<td></td>
<td>Arts &amp; Humanities requirement (p. 33)</td>
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</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>IT-1090 Computer Applications</td>
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<tr>
<td></td>
<td>IT-109H Honors Computer Applications</td>
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</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td>ATMW-2230 Millwright Pile Driver Weld II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ATPD-2020 Pile Driving Technologies</td>
<td>2</td>
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<tr>
<td></td>
<td>CNST-1731 Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communication requirement (p. 31)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social &amp; Behavioral Science/Natural and Physical Science requirement (p. 33)</td>
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<td></td>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.

2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.

3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.

4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.

5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.

6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimize waste.

7. Apply knowledge of math, pipe hydraulic theory, blueprinting, and tools to install, repair and test basic piping systems that meet industry codes and standards.

8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, and refrigeration systems according to national, state, local and other applicable industry codes and standards.

9. Obtain all required certifications in the pipefitting industry.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPF-1210</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1000</td>
<td>Care and Use of Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1340</td>
<td>OSHA Standards for Construction</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNSF-xxxx</td>
<td>CNST Elective</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPF-1220</td>
<td>Basic Pipefitting Layout</td>
<td>1</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
<td>2</td>
</tr>
<tr>
<td>Communication requirements (p. 31)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 62

1. ENG-2151 Technical Writing highly recommended.

Applied Industrial Technology (Pipefitting), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

The apprenticeship program prepares the student to earn a journey-level status in Pipefitting; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Program contact:

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma/GED

1. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
Applied Industrial Technology
(Plumbing), Associate of Applied Science

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED

Other Information

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the plumbing industry.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-1000</td>
<td>Care and Use of Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1010</td>
<td>Soldering and Brazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1070</td>
<td>Pipe Fittings, Valves, and Supports</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:
- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

Total Credit Hours: 14

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1030</td>
<td>State of Ohio Plumbing Code I</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:
- BADM-xxxx Business Elective
- CNST-1731 Construction Print Reading

Select one of the following:
- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Select one of the following:
- IT-1090 Computer Applications
- IT-109H Honors Computer Applications

Credit Hours: 13

#### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1220</td>
<td>Gas Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1230</td>
<td>Water Supply</td>
<td>2</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Natural and Physical Sciences Requirement (p. 34) 3

Select one of the following:
- BADM-xxxx Business Elective
- CNST-xxxx CNST Elective

Credit Hours: 13

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>15</td>
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#### Summer Completion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2410</td>
<td>City &amp; State Backflow Cert</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours: 6

Total Credit Hours: 63

### Electives

#### Business Electives

Select from the following courses to meet 12 credit elective requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Construction Management Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
</tbody>
</table>
Applied Industrial Technology (Sheet Metal Working), Associate of Applied Science

Students must be working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship and Training. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials. The apprenticeship certificate recognizes student attaining journey-level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Sheet Metal Working.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

• Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.
• High School Diploma/GED

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.
2. Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.
5. Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, computerized equipment and apply basic math to meet job specifications in accordance with Sheet Metal Air Conditioning Contractors National Association (SMACNA).
6. Install sheet metal items safely using hand and power tools, ladders, scaffolds and lifting devices, and apply basic math to meet job specifications in accordance with SMACNA standards.
7. Read and interpret blueprints, specifications and shop drawing in order to fabricate and install various sheet metal components.
8. Startup HVAC equipment and service accordingly to meet project specification.
9. Safely test and balance an installed system to ensure that it is operating to design specifications.

Be prepared for the following certifications:
   a. EPA Section 608 Certification
   b. AWSD1.1 and AWSD1.9 Welding Certifications
   c. HVAC Firelife Safety Level 1 Technician Certification

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATSM-1010 Benefits Management</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1020 Trade History</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1030 Layout and Fabrication I</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1040 OSHA 16 Hour Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATGL-1630 Basic Welding</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx CNST Elective</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATSM-1220 Layout and Fabrication II</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1230 Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2310 Refrigeration I</td>
<td>1</td>
</tr>
<tr>
<td>ATGL-2340 Advanced Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350 Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xx 1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx CNST Elective</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATSM-2330 Layout and Fabrication III</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2340 Advanced Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx Business Elective</td>
<td></td>
</tr>
</tbody>
</table>
four-year degree. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Associate of Arts Degree Requirements (p. 35)

Learn more about transfer opportunities at Tri-C

Creative and Performing Arts
  • Art
  • Dance
  • Media and Journalism Studies (p. 615)
  • Music
  • Theatre Arts

Humanities, Liberal Arts, and Social and Behavioral Sciences
  • American Sign Language
  • Anthropology
  • Chinese
  • Communication Studies (p. 501)
  • Economics
  • Education
  • English
  • French
  • Geography
  • German
  • History
  • Humanities
  • Italian
  • Japanese
  • Philosophy
  • Political Science
  • Psychology
  • Religious Studies
  • Sociology
  • Spanish
  • Urban Studies
  • Women's Studies

Associate of Science Degree

The Associate of Science degree is a flexible 2 year degree designed for students who want to begin their studies at Tri-C and plan to transfer to a baccalaureate degree-granting college or university for completion of a
four-year degree. Students should meet with an academic counselor to plan a course of study that will meet their transfer requirements.

Associate of Science Degree Requirements (p. 38)

Learn more about transfer opportunities at Tri-C.

Learn more about Science and Mathematics courses offered at Tri-C:

• Biology
• Chemistry
• Earth Science
• Mathematics
• Physical Science
• Physics

Automation Maintenance Technician,
Certificate of Proficiency

This program covers the processes and applications required for a person to be able to perform work in an industrial facility that includes automated manufacturing lines and machines. The program includes both general electrical and mechanical training, but also specific automation maintenance training on advanced platforms like programmable logic controllers, motor controls etc. Included in the course work are theoretical and hands on training related with Programmable Logic Controllers, Industrial Motor Controls, Power Transmission and Fluid Power. The skills needed to perform the job on specific applications will be covered.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 145) about how certificate credits apply to the related degree.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify, select, and operate appropriate test equipment and tools, and interpret test results to solve problems in a controlled environment.

2. Use team skills to collaborate and perform in a professional and workman like fashion in a diverse workforce and a dynamic environment to meet organizational goals and objectives.

3. Apply appropriate Math, Science, and computer skills to support installation, troubleshooting, and maintenance of electrical equipment and systems.

4. Utilize effective communication, time management and conflict management skills to propose solutions to technical problems to supervisors and team members.

5. Diagnose and resolve equipment problems by utilizing good technical assessment skills that include planning, reliability, logical thinking, ability to use drawings, schematics and documentation, and a fundamental understanding of electrical maintenance theory and principles.

6. Work with a safety-focuses mindset and follow industry safety standards, local regulations, and company policies and procedures.

7. Apply the fundamentals of electrical skills to install, troubleshoot, and maintain electrical equipment, such as advanced PLCs, commercial wiring, motors, and motor controls in compliance with the National Electric Code.

8. Employ cross-functional skills to differentiate between hydraulics/ pneumatics, mechanical, and welding systems, and isolate and resolve breakdown(s).

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1101</td>
<td>Welding Blue Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1300</td>
<td>Mechanical/Electrical Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1420</td>
<td>Applied Electricity II</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2200</td>
<td>Industrial Motor Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 16

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2210</td>
<td>Commercial Wiring</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2240</td>
<td>Applied National Electric Code</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2500</td>
<td>Programmable Logic Controllers Maintenance I</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2510</td>
<td>Programmable Logic Controllers Maintenance II</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2520</td>
<td>Programmable Logic Controllers Maintenance III</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credit Hours: 17

Total Credit Hours: 33

1. ISET-1300 and 1320 are scheduled in consecutive five week sessions.
2. ISET-1410, 1420, and 2200 are scheduled in consecutive five week sessions.
3. ISET-2240 and 2210 are scheduled in consecutive five week sessions.
ISET-2500, 2510, and 2520 are scheduled in consecutive five week sessions.

Automotive Maintenance and General Service, Short-Term Certificate

The Short-Term Certificate in Automotive Maintenance and General Service prepares students for entry level positions in the auto service industry as assistant technicians, maintenance technicians or general service technicians. Training is provided through a combination of classroom instruction and laboratory experience.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 142) about how certificate credits apply to the related degree.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently and professionally and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1101 Introduction to Automotive Service</td>
<td>3</td>
</tr>
<tr>
<td>Procedures</td>
<td></td>
</tr>
<tr>
<td>AUTO-1400 Automotive Alignment, Steering and</td>
<td>3</td>
</tr>
<tr>
<td>Suspension</td>
<td></td>
</tr>
<tr>
<td>AUTO-1450 Automotive Braking Systems</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1502 Automotive Electrical Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>12</td>
</tr>
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</table>

Total Credit Hours 12

Automotive Technology, Associate of Applied Science

Students are taught to diagnose, correct and repair electrical, fuel, emissions, and mechanical problems found in today’s modern automobile through classroom, laboratory, and field experience. Graduates are prepared for entry level positions as technicians in fleet service, manufacturer’s dealerships, national oil company and transmission repair facilities, or independent garages. Course work prepares student for the National Institute for Automotive Service Excellence (ASE) automotive technician certifications. The AUTO Program is certified by the National Automotive Technicians Education Foundation (NATEF) in all eight ASE categories. The Automotive Service Educational Program (ASEP) requires alternating school and General Motors dealership work experience sessions. In addition, ASEP students need to complete AUTO-1940 Automotive Field Experience I, AUTO-1950 Automotive Field Experience II, AUTO-1960 Automotive Field Experience III, and AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP. Please call the Automotive Technology department for more information.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 142) about how certificate credits apply to the related degree.

Program Admission Requirements

1. High School Diploma/GED not required, but highly recommended
2. Dealership sponsor required for ASEP program
3. ASEP student handbooks contain educational and worksite requirements for continuation in program

Other Information

1. ASEP students need to complete five field experience credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1940</td>
<td>Automotive Field Experience I</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-1950</td>
<td>Automotive Field Experience II</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-1960</td>
<td>Automotive Field Experience III</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-2940</td>
<td>Automotive Field Experience IV</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-2950</td>
<td>Automotive Field Experience V</td>
<td>1</td>
</tr>
</tbody>
</table>

2. ASEP students need to complete AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently, professionally, and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.
4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.
5. Diagnose and perform complex mechanical and electrical repairs using appropriate tools and equipment according to industry standards in a safe manner.
6. Apply basic business and management practices (marketing, inventory control, accounting, customer relations, employee relations) to the automotive environment.
7. Identify, interpret and document customer concerns and determine necessary actions. Listen and respectfully communicate with customers, co-workers and managers.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1101</td>
<td>Introduction to Automotive Service Procedures</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1400</td>
<td>Automotive Alignment, Steering and Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1450</td>
<td>Automotive Braking Systems</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1502</td>
<td>Automotive Electrical Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1050</td>
<td>Numerical Applications in Automotive Service</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1300</td>
<td>Automotive Engines</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1510</td>
<td>Automotive Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences Requirements (p. 33)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-2310</td>
<td>Manual Transmission and Drivetrain</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2350</td>
<td>Automotive HVAC</td>
<td>2</td>
</tr>
<tr>
<td>AUTO-2400</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2940</td>
<td>Automotive Field Experience IV</td>
<td>1</td>
</tr>
</tbody>
</table>

Math-1xxx (p. 32) 1000-level MATH course or higher 3

Arts and Humanities/Natural Sciences Requirements (p. 33) 3

Credit Hours 15

Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-2300</td>
<td>Automatic Transmissions</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2450</td>
<td>Automotive Electronic Engine Controls</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2701</td>
<td>Automotive Service Operations</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-2950</td>
<td>Automotive Field Experience V 1</td>
<td>1</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (see Elective list)</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (see Elective list)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 16

Total Credit Hours 61

ASEP Students must also complete AUTO-1940 Automotive Field Experience I, AUTO-1950 Automotive Field Experience II, AUTO-1960 Automotive Field Experience III, and AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP.

Electives

Recommend selecting from the below courses to fulfill elective requirement. Elective requirement may be fulfilled by other courses not listed here.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>GEN-1022</td>
<td>Strategies for Success</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Automotive Technology, Certificate of Proficiency

This Certificate of Proficiency in Automotive Technology provides students with classroom and laboratory experience and prepares students for employment in the auto service industry.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
Learn more (p. 142) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED highly recommended, but not required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently and professionally and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.
4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO-1101 Introduction to Automotive Service Procedures</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1400 Automotive Alignment, Steering and Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1450 Automotive Braking Systems</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1502 Automotive Electrical Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>AUTO-1050 Numerical Applications in Automotive Service</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1300 Automotive Engines</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-1510 Automotive Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences requirement (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

Basic Police Academy

Program description

This rigorous program is designed for individuals who have made the decision to be peace officers in the state of Ohio. In addition to the state-mandated 730-hour Peace Officer Basic Training curriculum, cadets participate in specialized training that enhances their background, providing greater career opportunities. Cadets who complete their Peace Officer Basic Training Academy will have earned 24 credit hours and met the police academy requirement for the Criminal Justice – Basic Police Academy degree at Tri-C.

Other important information

Tri-C offers both full-time (40 hours/week) and part-time (24 hours/week) academies in the fall. Spring term offers a full-time academy.

This program is a mix of credit and non-credit coursework. Financial aid can only be applied to the credit coursework.

A completed police academy application is required. See website for details.

Program cost

Cuyahoga County Residents: $5,540
Other Ohio Residents: $6,248.96

Financial aid eligibility

This program is Federal Financial Aid/PELL eligible for those that qualify.

Scholarships, payment plans, and other financial aid options may be available. Please call 216-987-3064 for more information.

Upon completion students receive

Eligible to receive a commission as a police officer in the state of Ohio

Related Programs/Training

- Criminal Justice (Basic Police Academy), Associate of Applied Science Degree (p. 251)
- Criminal Justice (Basic Police Academy), Certificate of Proficiency (p. 256)
- Criminal Justice, Associate of Applied Science Degree (p. 160)

Learn more about Basic Police Academy
Bookkeeping, Certificate of Proficiency

The Bookkeeping Certificate prepares students for entry level employment as bookkeeping clerks. This one year certificate program is designed to accommodate those who are employed full time or are attending college on a part time basis seeking to upgrade their existing employment skills or begin a job as a bookkeeper or office manager for a small or medium sized business.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 95), here (p. 95), here (p. 97), here (p. 96), and here (p. 97) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure

Program Admission Requirements

• High School Diploma/GED not required, but highly recommended.
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate financial and related information both verbally and in writing, relative to their knowledge and skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental bookkeeping processes to properly record routine and nonroutine business transactions.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record daily bookkeeping tasks.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
</tr>
<tr>
<td>ACCT-xxxx</td>
<td>Any ACCT elective course</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1030</td>
<td>Payroll</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
<td>2</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two of the following: 5-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-xxxx</td>
<td>Accounting Elective (select from below list)</td>
<td>1</td>
</tr>
<tr>
<td>FIN-xxxx</td>
<td>Finance Elective</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 16-19

Total Credit Hours 31-35

1 ACCT-1020 Applied Accounting cannot be used to fulfill elective requirements.

Electives

Select from below courses to fulfill elective requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2310</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2500</td>
<td>Governmental/Non-Profit Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2320</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2340</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>ACCT-28xx</td>
<td>Accounting Special Topics</td>
<td>2-4</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>FIN-2100</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2050</td>
<td>Volunteer Income Tax Assistance</td>
<td></td>
</tr>
</tbody>
</table>

Budgeting Certificate

[Image of a woman dealing with financial documents]
Program description
Save money and time with a high return on investment (ROI) certificate. The skills taught in this program can give participants potential ideas for budget savings that pay for itself many times over by a reduction of expenses and a more efficient budget process. Participants will get hands-on practice building, reviewing, discussing, and analyzing budgets. This certificate uses real-world scenarios taught by an industry expert to help participants practice and implement budgeting techniques. This program is ideal for employees who are new to budgeting or want to review budgeting and financial forecasting principles.

Other important information

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZFIN-1047</td>
<td>Introduction to Budgeting and Forecasting</td>
<td></td>
</tr>
<tr>
<td>ZFIN-1048</td>
<td>Advanced Budgeting and Forecasting</td>
<td></td>
</tr>
</tbody>
</table>

Program contact: Learn more
Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 145) and here (p. 171) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements
- MATH-0910 Basic Arithmetic and Pre-Algebra with "C" or higher.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify, select, and operate appropriate test equipment and tools, and interpret test results to solve problems in a controlled environment.

2. Use team skills to collaborate and perform in a professional and workman like fashion in a diverse workforce and a dynamic environment to meet organizational goals and objectives.

3. Apply appropriate Math, Science, and computer skills to support installation, troubleshooting, and maintenance of electrical equipment and systems.

4. Utilize effective communication, time management and conflict management skills to propose solutions to technical problems to supervisors and team members.

5. Diagnose and resolve equipment problems by utilizing good technical assessment skills that include planning, reliability, logical thinking, ability to use drawings, schematics and documentation, and a fundamental understanding of electrical maintenance theory and principles.

6. Work with a safety-focuses mindset and follow industry safety standards, local regulations, and company policies and procedures.

7. Apply the fundamentals of electrical skills to install, troubleshoot, and maintain electrical equipment, such as commercial wiring, HVAC, motors, motor controls, and basic PLCs in compliance with National Electric Code.

8. Employ cross functional skills to differentiate between HVAC, boiler, piping and tubing, and electrical power systems, and isolate and resolve breakdown(s).

Upon completion students receive
Certificate of Completion for each course as well as a Program Certificate

Related Programs/Training
- Accounting
- Bookkeeping
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Organizational Effectiveness (Professional Development Programs)

To Register for and Learn more about Budgeting Certificate.

Building Maintenance Technician, Certificate of Proficiency

This program covers the processes and applications required for a person to fulfill the duties of a Building Maintenance Technician. The program includes both general electrical and mechanical training, but also specific facility maintenance training on all the aspects that are involved in keeping a facility fully operational. Included in the course work are theoretical and hands on training related with Commercial Wiring, Industrial Piping and Tubing, Boiler Technologies and HVAC. The skills needed to perform the job on specific applications will be covered.

Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

This program covers the processes and applications required for a person to fulfill the duties of a Building Maintenance Technician. The program includes both general electrical and mechanical training, but also specific facility maintenance training on all the aspects that are involved in keeping a facility fully operational. Included in the course work are theoretical and hands on training related with Commercial Wiring, Industrial Piping and Tubing, Boiler Technologies and HVAC. The skills needed to perform the job on specific applications will be covered.

Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

This program covers the processes and applications required for a person to fulfill the duties of a Building Maintenance Technician. The program includes both general electrical and mechanical training, but also specific facility maintenance training on all the aspects that are involved in keeping a facility fully operational. Included in the course work are theoretical and hands on training related with Commercial Wiring, Industrial Piping and Tubing, Boiler Technologies and HVAC. The skills needed to perform the job on specific applications will be covered.

Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
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Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

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Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

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Financial Aid eligibility
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Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

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Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

This program covers the processes and applications required for a person to fulfill the duties of a Building Maintenance Technician. The program includes both general electrical and mechanical training, but also specific facility maintenance training on all the aspects that are involved in keeping a facility fully operational. Included in the course work are theoretical and hands on training related with Commercial Wiring, Industrial Piping and Tubing, Boiler Technologies and HVAC. The skills needed to perform the job on specific applications will be covered.

Financial Aid eligibility
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Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

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Financial Aid eligibility
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Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

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Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.

This program covers the processes and applications required for a person to fulfill the duties of a Building Maintenance Technician. The program includes both general electrical and mechanical training, but also specific facility maintenance training on all the aspects that are involved in keeping a facility fully operational. Included in the course work are theoretical and hands on training related with Commercial Wiring, Industrial Piping and Tubing, Boiler Technologies and HVAC. The skills needed to perform the job on specific applications will be covered.

Financial Aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
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Financial Aid eligibility
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Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Visit the Corporate College website here for pricing.

Gainful Employment Disclosure

To Register for and Learn more about Budgeting Certificate.
Students experience and develop Human Resource generalist capabilities through this competency-driven and applications-based Human Resource program. By combining a dynamic market designed and driven Human Resource concentration with a well-rounded Business Management degree, the student is preparing to become a marketable Human Resource practitioner with a business partner orientation. Those already in the function can develop and advance their career potential through this up-to-date program.

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ISET-1300</td>
<td>Mechanical/Electrical Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1420</td>
<td>Applied Electricity II</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1450</td>
<td>Heating Ventilation Air Conditioning/</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Refrigeration I</td>
<td></td>
</tr>
<tr>
<td>ISET-1460</td>
<td>Fundamental Boiler Technology</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2200</td>
<td>Industrial Motor Controls</td>
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**Second Semester**

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<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>ISET-1340</td>
<td>Industrial Piping and Tubing</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2210</td>
<td>Commercial Wiring</td>
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<td>ISET-2240</td>
<td>Applied National Electric Code</td>
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<tr>
<td>ISET-2450</td>
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<td>ISET-2460</td>
<td>Applied Boiler Technology</td>
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<tr>
<td>ISET-2500</td>
<td>Programmable Logic Controllers</td>
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<tr>
<td></td>
<td>Maintenance I</td>
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<tr>
<td>ISET-2510</td>
<td>Programmable Logic Controllers</td>
<td>2</td>
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<td>Maintenance II</td>
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</tbody>
</table>

**Program contact:** Learn more

Learn more (p. 96) about how certificate credits apply to the related degree and about related training programs.

**Related Degrees and Certificates**

- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)

**Related Training and Credentials**

- Certificate in Applied Project Management (CAPM) (p. 230)
- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communication. Demonstrate competency in communicating effectively both independently and in teams, using oral, written, or non-verbal techniques, to include the use of technology, in the gathering and presentation of information.
3. Business Fundamentals. Demonstrate the ability to identify and understand basic theories, principles & practices, and terminology related to each functional area of business.
4. Critical Thinking. Apply knowledge in the decision-making and problem-solving process.
5. Diversity. Interpret and explain the importance of diversity in the global workplace.
6. Ethics. Identify the foundations and importance of ethics and social responsibility, and how business integrates this into their ongoing operations.
7. Human Resources. Gain applied knowledge of the concepts, processes and practices within the human resources function.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
</tr>
</tbody>
</table>
Business Management with a Concentration in International Business, Associate of Applied Business

- **Business Management, Associate of Applied Business**
- **Concentration in International Business Management with a**

**Second Semester**
- ACCT-1311 Financial Accounting (Financial Accounting)
- BADM-1122 Principles of Management and Organizational Behavior
- ECON-2000 Principles of Microeconomics
- PHIL-2020 Ethics

Select one of the following:
- ENG-1020 College Composition II
- ENG-102H Honors College Composition II

**Third Semester**
- BADM-1210 Labor-Management Relations
- BADM-2330 Human Resource Management
- ECON-2100 Principles of Macroeconomics
- MARK-2010 Principles of Marketing
- PSY-1050 Introduction to Industrial/Organizational Psychology

**Fourth Semester**
- BADM-1460 Workers' Compensation Law
- BADM-2110 Production/Operation Management
- BADM-2151 Business Law
- BADM-2340 Human Resources Law and Application
- BADM-2390 Advanced Human Resources Practices

**Related Degrees and Certificates**
- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)

**Related Training and Credentials**
- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

**Program Learning Outcomes**

1. Use listening, verbal, non-verbal, written, and appropriate cross-cultural communication skills, utilizing appropriate technology with internal and external stakeholders, to meet a global organization's objectives.
2. Apply intercultural sensitivity and knowledge of global business practices and protocols to develop and maintain effective working relationships among diverse people.
3. Provide quality and timely customer service that ensures customer satisfaction to both internal and external customers.
4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, networking and time management to meet or exceed an organization's global objectives.
5. Use various international systems, certification, standards, and software to maximize the efficiency of the global trade environment.
6. Identify and use problem solving tools and principles of quality to identify and resolve problems in a timely manner that enhances a global organization's performance on a global scale.
7. Apply general math, metric, currency and accounting skills to prepare, record and track revenue and expenditures and other performance measures in a global environment.
8. Apply knowledge of global concepts including geography, current affairs, history, travel and infrastructures to assist an organization's international strategy.

Business Management with a Concentration in International Business, Associate of Applied Business
9. Conduct market research to support an organization’s global marketing programs/initiatives.
10. Support management of an organization’s transportation, warehouse, distribution and logistics operations.
11. Apply knowledge of international financial management to support purchasing/sales products and services.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>Global Commerce and Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Select one of the following:

- IT-1090 Computer Applications
- IT-109H Honors Computer Applications

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
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<tr>
<td>BADM-2780</td>
<td>Global Marketing and Distribution</td>
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<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
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</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
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Select one of the following:

- BADM-2110 Production/Operation Management
- BADM-2161 Introduction to Purchasing and Supply Management

**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
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</tr>
<tr>
<td>BADM-2760</td>
<td>Global Trade and Finance</td>
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</tr>
<tr>
<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
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</table>

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2790</td>
<td>International Business Strategy and Application</td>
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<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select Foreign Language elective</td>
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</tr>
</tbody>
</table>

**Total Credit Hours** 61-63

1. Foreign language electives should be selected in the same language. Department approval required to select another foreign language. American Sign Language courses are not foreign language elective options for this degree.

2. MATH-1800-1820 may not be used to meet this requirement; MATH-1470 Modern Mathematics for Business and Social Science I or higher is recommended for students planning to transfer.

**Business Management with a Concentration in Small Business Management, Associate of Applied Business**

This program is designed for those who aspire to be entrepreneurs, as well as for those already operating a small business. Fundamentals of entrepreneurship are emphasized. A solid management foundation is provided.

**Program contact:** Learn more

Learn more (p. 97) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**

- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)

**Related Training and Credentials**

- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate competency in communicating effectively both independently and in teams, using oral, written, or non-verbal techniques, to include the use of technology in the gathering and presentation of information.
2. Apply general math skills to analyze general business operations.

1  "Foreign language electives should be selected in the same language. Department approval required to select another foreign language. American Sign Language courses are not foreign language elective options for this degree."

2  "MATH-1800-1820 may not be used to meet this requirement; MATH-1470 Modern Mathematics for Business and Social Science I or higher is recommended for students planning to transfer."
3. Demonstrate the ability to identify and understand basic theories, principles & practices, and terminology related to each functional area of business.

4. Apply knowledge in the decision-making and problem-solving process.

5. Interpret and explain the importance of diversity in the workplace.

6. Identify the foundations and importance of ethics and social responsibility, and how business integrates this into their ongoing operations.

7. Develop an entrepreneurial mindset as it relates to business opportunities, management, financing, and running a successful business.

### Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>Social and Behavioral Sciences Requirements (p. 33)</td>
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<tr>
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<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
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<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td>IT-1090</td>
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<td>IT-109H</td>
<td>Honors Computer Applications</td>
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**Second Semester**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1311</td>
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<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
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<td>BT-1700</td>
<td>Business Spreadsheets (Excel)</td>
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<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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<td>ENG-102H</td>
<td>Honors College Composition II</td>
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**Third Semester**

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<td>BADM-1301</td>
<td>Small Business Management</td>
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<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
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<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
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<td>Select one of the following:</td>
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<td>BADM-2010</td>
<td>Business Communications</td>
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**Fourth Semester**

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<tr>
<td>BADM-1080</td>
<td>Social Media Marketing</td>
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<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
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<tr>
<td>BADM-2151</td>
<td>Business Law</td>
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</table>

**PHIL-2020**  
**Ethics**  
**Credit Hours**  
**3**

**Total Credit Hours**  
**14**

1. MATH-1800-1819 Special Topics in Math and MATH-2800-2819 Advanced Special Topics in Math & MATH-1820 Independent Study/Research in Mathematics/MATH-2820 Independent Advanced Study/Research in Mathematics may not be used to meet this requirement. MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.

### Business Management, Associate of Applied Business

The Associate of Applied Business degree in Business Management is designed to help you become an effective manager of projects as well as personnel. The business management curriculum will enable you to advance personally in a business environment while you contribute to your company's goals and objectives. Your courses will familiarize you with general management theory and practice, as well as critical knowledge in accounting, marketing, purchasing, economic and legal aspects of the modern business world. Prepare yourself for a business related career or advancement in industrial or consumer product or retail setting.

**Program contact:** Learn more

Learn more (p. 95) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 217)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)

### Related Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 230)
- Frontline Manager Certificate Program (p. 300)
- Lean Six Sigma Green Belt for Health Care (p. 329)
• Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
• LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate competency in communicating effectively both independently and in teams, using oral, written, or non-verbal techniques, to include the use of technology, in the gathering and presentation of information.
2. Apply general math skills to analyze general business operations.
3. Demonstrate the ability to identify and understand basic theories, principles & practices, and terminology related to each functional area of business.
4. Apply knowledge in the decision-making process and problem-solving process.
5. Interpret and explain the importance of diversity in the global workplace.
6. Identify the foundations and importance of ethics and social responsibility, and how business integrates this into their ongoing operations.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BADM-1020 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311 Financial Accounting</td>
<td>3</td>
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<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
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<tr>
<td>ENG-101H Honors College Composition I</td>
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<td>Select one of the following:</td>
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<tr>
<td>IT-1090 Computer Applications</td>
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<tr>
<td>IT-109H Honors Computer Applications</td>
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<td>Credit Hours</td>
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<table>
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<tr>
<th>Second Semester</th>
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<tr>
<td>ACCT-1341 Managerial Accounting</td>
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<td>BADM-1210 Labor-Management Relations</td>
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<tr>
<td>BADM-1122 Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000 Principles of Microeconomics</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1020 College Composition II</td>
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<tr>
<td>ENG-102H Honors College Composition II</td>
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<tr>
<td>Credit Hours</td>
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</thead>
<tbody>
<tr>
<td>BADM-2010 Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2161 Introduction to Purchasing and Supply Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2010 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2010 Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020 Ethics</td>
<td>3</td>
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<tr>
<td>Credit Hours</td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>BADM-2110 Production/Operation Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2151 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2330 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2501 Business Strategies</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences Requirements (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

1 MATH-1800-MATH-1819 Special Topics in Math and MATH-2800-2819 Advanced Special Topics in Math and MATH-2820 Independent Study/Research in Mathematics and MATH-2820 Independent Advanced Study/Research in Mathematics may not be used to meet this requirement. MATH-1410 Elementary Probability and Statistics I or higher is recommended for students planning to transfer.

Recommended Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1070</td>
<td>Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1460</td>
<td>Workers’ Compensation Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2180</td>
<td>Purchasing Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2340</td>
<td>Human Resources Law and Application</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>Global Commerce and Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>MARK-1080</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2261</td>
<td>Salesmanship and Promotional Strategies</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Technology, Associate of Applied Business

The Business Technology degree program prepares students with a comprehensive blending of business, critical thinking, and software knowledge/skills in preparation for entry-level business and advanced administrative career titles. Students will build a foundation in business software, management techniques, decision making, ethics and effective communication.

Program contact: Learn more
This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 98) about how certificate credits apply to the related degree.

Program Admission Requirements

- Students must be able to touch type at a combined speed and accuracy rate of 35 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of "C" prior to entrance to this program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize current workplace technologies for organization, collaboration, and sharing of ideas and documents.
2. Perform at an advanced level with spreadsheet, database, presentation and word processing applications.
3. Apply managerial skills and problem-solving skills in a workplace environment including decision making, critical thinking, independent task completion, time management, and effective communication.
4. Apply project management skills and software to workplace existing or new projects.
5. Analyze, interpret, and explain quantitative data.
6. Apply the principles of emotional intelligence when interacting with others in the workplace.
7. Describe the traits of effective leadership, and distinguish between appropriate types of feedback.
8. Recognize the value of working in a diverse environment.
9. Utilize time effectively and perform tasks in a timely and efficient manner.
10. Collaborate with colleagues to accomplish common goals.
11. Apply principles of quality and ethics to a wide variety of business scenarios.

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BT-1201</td>
<td>Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>Select one of the following:</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
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Second Semester

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BT-1700</td>
<td>Business Spreadsheets (Excel)</td>
<td>3</td>
</tr>
<tr>
<td>BT-2040</td>
<td>Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>BT-2210</td>
<td>Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>2-3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>2-3</td>
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<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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<tr>
<td>Credit Hours</td>
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Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BT-2300</td>
<td>Business Database Systems (Access)</td>
<td>3</td>
</tr>
<tr>
<td>BT-2410</td>
<td>Administrative Management</td>
<td>3</td>
</tr>
<tr>
<td>BT-2700</td>
<td>Advanced Business Spreadsheets (Excel)</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>2-3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
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<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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<tr>
<td>Credit Hours</td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BT-2510</td>
<td>Project Management Software</td>
<td>3</td>
</tr>
<tr>
<td>BT-2830</td>
<td>Cooperative Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>BT-2990</td>
<td>Business Technologies Capstone</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science/Natural and Physical Science requirements (p. 29)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
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<td>PHIL-202H</td>
<td>Honors Ethics</td>
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ELECTIVES

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<th>Title</th>
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<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
<td>2</td>
</tr>
<tr>
<td>BT-1000</td>
<td>Keyboarding and Document Formatting</td>
<td>2</td>
</tr>
<tr>
<td>BT-1241</td>
<td>Information &amp; Records Management</td>
<td>3</td>
</tr>
<tr>
<td>BT-2150</td>
<td>Legal Document Preparation</td>
<td>3</td>
</tr>
<tr>
<td>BT-2200</td>
<td>Advanced Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2270</td>
<td>Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2370</td>
<td>Office Meeting and Event Coordination</td>
<td>3</td>
</tr>
<tr>
<td>BT-2500</td>
<td>Web Authoring Tools</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>HIM-1121</td>
<td>Medical Billing Practices</td>
<td>2</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MA-2010</td>
<td>Medical Terminology II</td>
<td>2</td>
</tr>
<tr>
<td>PL-1502</td>
<td>Law Office Technology</td>
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</tbody>
</table>

Total Credit Hours | 60-63

Cuyahoga Community College 2019-2020 Catalog 221
Cancer Registrar, Post-Degree Professional Certificate

To be eligible for this program, students must have a minimum of an associate degree in a healthcare field of study. However, graduates of an accredited Health Information Management degree program are best suited for this certificate. Students who do not have a healthcare degree that includes an Introduction to Medical Terminology, two semesters of Anatomy and Physiology, and Pathophysiology will be required to complete these courses with a “B” grade or higher before applying for admission to the program.

Students who complete the Cancer Registrar post-degree certificate will be eligible to take the certification exam for Certified Tumor Registrar (CTR) provided by the National Association of Cancer Registrars’ Association.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 117) and here (p. 124) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Health Information Management Technology, Associate of Applied Science (p. 304)

Program Admission Requirements
• Students must have at a minimum an Associate Degree (or higher) in allied health or nursing from an ACE accredited College that includes the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I (with “B” grade or higher)</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II (with “B” grade or higher)</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2600</td>
<td>Pathophysiology (with “B” grade or higher)</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>MATH-1000 level or higher (with grade of “C” or higher)</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following: 2-5

| MA-1010 | Introduction to Medical Terminology (with “B” grade or higher) |
| MA-1020 & MA-2010 | Medical Terminology I and Medical Terminology II (with “B” grade or higher) |

• Time limit on biology courses is seven years unless the student is currently working in the healthcare field.
• 2.0 GPA
• 25 students accepted per year
• Graduates of an accredited HIM degree program are best suited for this certificate. Current credential is not required for admission to the program. Students who do not have a degree that includes the above courses must complete the courses before applying for the CTR program.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify and comply with diverse workplace cultures, specifically in regard to dress code, code of conduct, and relationships with internal and external stakeholders
2. Apply federal, state, and organizational regulations in regard to confidentiality and security.
3. Explain the significance of applying clinical knowledge pertaining to diagnostics, treatment modalities, extent of disease, and surveillance in order to ensure complete and accurate cancer reporting.
4. Abstract and analyze health record information and convert to numerical data that aligns with industry principles and guidelines.
5. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration, and internal and external customers to promote quality oncology research and statistical outcomes.
6. Exhibit proficiency using Microsoft Office Suite (Excel, Word, PowerPoint, & Outlook) as well as other software technologies and discuss the potential of data exchange across systems.
7. Effectively utilize virtual meeting software in a professional manner.
8. Identify and comply with diverse workplace cultures, specifically in regard to dress code, code of conduct, and relationships with internal and external stakeholders
9. Differentiate between the various roles and reporting structures, while prioritizing tasks according to immediate needs.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-2500</td>
<td>Introduction to Cancer Registry and Disease Management</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2510</td>
<td>The Cancer Disease Process and Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2520</td>
<td>Oncology Coding and Staging</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-2530</td>
<td>Oncology Treatment and Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2540</td>
<td>Abstracting Principles and Methodologies for Oncology</td>
<td>3</td>
</tr>
</tbody>
</table>
Captioning and CART Providing, Short-Term Certificate

Captioners and CART (computer-assisted real-time translation) Providers use steno or voicewriting technology to provide access to the hearing impaired and disabled populations by displaying the text of speakers on computers and television. Graduates can work as an entry-level CART provider or broadcast captioner.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 99) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admissions Requirements

- Completion of the short-term certificate in Court Reporting Technologies or RPR Certification or completion of an entrance examination.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Write three five-minute literary takes at 180 wpm with 96 percent verbatim accuracy.
2. Write three 15-minute literary broadcast takes at 180 wpm with 96 percent verbatim.
3. Effectively apply the use of dictionary maintenance techniques in the CART and captioning environments.
4. Adhere to ethical standards and requirements while completing work in a timely manner.
5. Utilize CART and captioning equipment for real-time translation.

6. Prepared to sit for the Certified Broadcast Captioner (CBC) certification exam and Certified Cart Provider (CCP) certification exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-2401</td>
<td>Speedbuilding and Transcription at 180 WPM</td>
</tr>
<tr>
<td>C&amp;CR-2480</td>
<td>Using Captioning Technology</td>
</tr>
<tr>
<td>C&amp;CR-2510</td>
<td>CART Production</td>
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<table>
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<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>C&amp;CR-2451</td>
<td>Speedbuilding and Transcription at 225 WPM</td>
</tr>
<tr>
<td>C&amp;CR-2520</td>
<td>Captioning Production</td>
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<tr>
<td>C&amp;CR-2602</td>
<td>Technical Terminology</td>
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<table>
<thead>
<tr>
<th>Summer Completion</th>
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<tbody>
<tr>
<td>C&amp;CR-2550</td>
<td>Writing for Captioning and CART</td>
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<tr>
<td>C&amp;CR-2910</td>
<td>Internship for Captioning and CART</td>
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<tr>
<td>Total Credit Hours</td>
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</table>

Captioning and Court Reporting Certified Stenowriting, Certificate of Proficiency

The Certificate of Proficiency in Court Reporting NCRA Certified Steno Writing Curriculum will prepare students to be an entry-level court reporter in the judicial/official, freelance, captioning and/or CART avenues of the profession, or employment as a transcriptionist using steno writing technology. Upon completion of this certificate, students can sit for the NCRA Written Knowledge Test. This is a 100-question exam testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NCRA Skills Test, Registered Professional Reporter (RPR) using steno writing technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent - 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer.

Program contact: Learn more
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 99) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admissions Requirements

- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Write 225 wpm with 95% accuracy and apply real-time technology skills.
5. Write 140 wpm of literary material with 96% real-time accuracy.
6. Effectively apply the use of specialized vocabulary (business, sports, meteorology, politics) as found in current events to capture the spoken word in real time writing.
7. Apply appropriate courtroom procedures to professional work.
8. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>CCR-1300</td>
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<tr>
<td>CCR-1350</td>
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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>CCR-1331</td>
<td>2</td>
</tr>
<tr>
<td>CCR-1335</td>
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<td>CCR-2351</td>
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<table>
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<tr>
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<tr>
<td>CCR-1601</td>
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<td>CCR-xxxx</td>
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<table>
<thead>
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<td>CCR-2401</td>
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<tbody>
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<td>CCR-xxxx</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
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</tr>
</tbody>
</table>

1 This class is only offered in the summer specific to CCR students.

Captioning and Court Reporting Certified Voicewriting, Certificate of Proficiency

The Certificate of Proficiency in Captioning and Court Reporting Certified Voice Writing Curriculum will prepare students to be an entry-level court reporter in the judicial/official, freelance, captioning and/or CART avenues of the profession, or employment as a transcriptionist using voice writing technology. Upon completion of this certificate, students can sit for the NVRA Written Knowledge Test. This is a 100-question exam testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NVRA Skills Test, Certified Verbatim Reporter (CVA) using voice technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent - 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1100 Introduction to Voice Captioning</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1200 Voicewriting I</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1210 Voicewriting II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1350 Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>8</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1220 Voicewriting III</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-1451 Speedbuilding and Transcription at 140 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2351 Editing Legal Documents</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Summer Session</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-2401 Speedbuilding and Transcription at 180 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1601 Court Reporting Technology</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-xxxx Any C&amp;CR elective course</td>
<td>1-3</td>
</tr>
<tr>
<td>CJ-1120 Criminal Court Procedures</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>10-12</strong></td>
</tr>
</tbody>
</table>

This class is only offered in the summer specific to C&CR students.

Captioning and Court Reporting, Associate of Applied Business

Within the legal field, court reporters are entrusted to record everything said in court, at depositions, and legal meetings; reporters use computer technology and specialized software in their work today. Thus, “realtime” court reporters now find many applications for their skills outside the legal field in areas such as captioning and computer access real time translations (CART) providing utilizing either steno (Option A) or voice writing technology (Option B). This program provides the student with skills required to meet the challenges and opportunities available to court reporters in the modern workplace.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 99) about how certificate credits apply to the related degree.

Program Admissions Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- Recommend students take C&CR-1000 Introduction to Court Reporting or C&CR-1100 Introduction to Voice Captioning in the spring or summer prior to entering the program.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Write 225 wpm with 95% accuracy and apply real-time technology skills.
5. Write 140 wpm of literary material with 96% real-time accuracy.
6. Effectively apply the use of specialized vocabulary (business, sports, meteorology, politics) as found in current events to capture the spoken word in real time writing.
7. Apply appropriate courtroom procedures to professional work.
8. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.

Program outcomes can be found in the course catalog.

Students must select either Option A (Court Reporting - Stenowriting) or Option B (Voicewriting) to complete this degree program.

Suggested Semester Sequence

First Semester

C&CR-1350 Legal Terminology 3

Select one of the following options:

Option A
C&CR-1000 Introduction to Court Reporting
C&CR-1300 Realtime Theory I

Option B
C&CR-1100 Introduction to Voice Captioning
C&CR-1200 Voicewriting I 1
C&CR-1210 Voicewriting II 1

Select one of the following:

ENG-1010 College Composition I 3
ENG-101H Honors College Composition I

Credit Hours 6

Second Semester

C&CR-2200 Medical Terminology for Captioning and Court Reporting 3
C&CR-2351 Editing Legal Documents 3
MATH-1xxx 1000-level MATH course or higher (p. 28) 3

Select one of the following options:

Option A
C&CR-1331 Realtime Theory II
C&CR-1335 Realtime Theory III

Option B

Credit Hours

SUMMER SESSION

C&CR-1601 Court Reporting Technology 4
C&CR-1341 Realtime Theory IV (Option A) 4
C&CR-1451 Speedbuilding and Transcription at 140 WPM 3
CJ-1120 Criminal Court Procedures 2

Credit Hours 9

Third Semester

C&CR-2300 Court Procedures 3
C&CR-2401 Speedbuilding and Transcription at 180 WPM 3
C&CR-2602 Technical Terminology 3
Social and Behavioral Sciences requirement (p. 29) 3
Arts & Humanities requirement (p. 28) 3

Credit Hours 15

Fourth Semester

C&CR-2451 Speedbuilding and Transcription at 225 WPM 3
C&CR-2470 Advanced Technology 3
C&CR-2841 Internship 2
C&CR-xxxx Any C&CR elective course 1-3
Communication requirement (p. 27) 3

Credit Hours 12-14

Total Credit Hours 51-53

1 Consecutive eight week course.

OPTIONS

(A) Court Reporting

Court Reporting Option teaches students to utilize stenotype machines and software.

Code Title Credit Hours
C&CR-1000 Introduction to Court Reporting 1
C&CR-1300 Realtime Theory I 4
C&CR-1331 Realtime Theory II 2
C&CR-1335 Realtime Theory III 2
C&CR-1341 Realtime Theory IV 2
Additional program courses 51-53

Total Credit Hours 62-64

(B) Voicewriting

Voicewriting Option teaches students to utilize voice-recognition software and technology. Voicewriting technology enables users to create and edit documents, send email, access the internet and perform other functions in a hands-free environment.

Code Title Credit Hours
C&CR-1100 Introduction to Voice Captioning 1
C&CR-1200 Voicewriting I 2
C&CR-1210 Voicewriting II 2
C&CR-1220 Voicewriting III 4

Total Credit Hours 51-53
Carpentry, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows, and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
- Intent-to-hire agreement with participating contractor

Other Information
- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.
9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.
10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, and windows to meet a commercial client’s specifications.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301</td>
<td>Introduction to Carpentry 2</td>
</tr>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety 2</td>
</tr>
<tr>
<td>ATCT-1320</td>
<td>Introduction to Hand and Power Tools 2</td>
</tr>
<tr>
<td>ATCT-1351</td>
<td>Metal Studs and Dry Walls 2</td>
</tr>
<tr>
<td>ATCT-1381</td>
<td>Wood Framing 2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1331</td>
<td>Concrete Footers and Walls 2</td>
</tr>
<tr>
<td>ATCT-1370</td>
<td>Layout 2</td>
</tr>
<tr>
<td>ATCT-1390</td>
<td>Welding for Carpentry 2</td>
</tr>
<tr>
<td>ATCT-1491</td>
<td>Residential Steel Framing 2</td>
</tr>
<tr>
<td>ATCT-1610</td>
<td>Interior Finish 2</td>
</tr>
<tr>
<td>ATCT-2361</td>
<td>Suspended Ceilings 2</td>
</tr>
<tr>
<td>ATCT-xxxx</td>
<td>Any ATCT Elective course 2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer Completion</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-2341</td>
<td>Concrete Specialties 2</td>
</tr>
<tr>
<td>ATCT-2370</td>
<td>Interior Systems Layout 2</td>
</tr>
<tr>
<td>ATCT-2560</td>
<td>Interior Systems III 2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
</tr>
</tbody>
</table>

CCNA Cyber Ops

The Cisco CCNA Cyber Ops program prepares the individual to begin a career working with associate-level cybersecurity analysts within security operations centers. Students will learn the beginning level skills of basic threat analysis, event correlation, identifying malicious activity, and how
to use a playbook for incident response and be prepared to rapidly detect
security breaches and effectively respond to security threats. Upon program completion, students are prepared to sit for the CCNA Cybersecurity Fundamentals (SECFND) v1.0 exam and the CCNA Cyber OPS (SECOPS) v1.0 exam).

The program includes the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZCIS-1058</td>
<td>CCNA: Cisco CCNA Cybersecurity Fundamentals (SECFND) v1.0</td>
<td>4</td>
</tr>
<tr>
<td>ZCIS-1059</td>
<td>CCNA: Cisco CCNA Cyber OPS (SECOPS) v1.0</td>
<td>4</td>
</tr>
</tbody>
</table>

**Other Important Information**

- **Prerequisites:** ZCIS-1000 CCNA: Interconnecting Cisco Networking Devices (ICND1) V.3

**Program Cost**

$2,990

**Financial aid eligibility**

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**

Certificate of completion

**Related Programs/Training**

- Cisco Technical Training Institute (Workforce Training Programs) (p. 152)
- Certified Network Associate (CCNA)
- CCNA: Interconnecting Cisco Networking Devices
- Certified Network Professional Security (CCNPT Security)
- CCNP Routing and Switching Certification Program

To Register for and Learn more about CCNA Cyber Ops

**CCNP Routing and Switching**

The CISCO CCNP Routing and switching certification program provides the training required to develop hands on-skills and best practices for network engineers who seek to plan, implement, verify and troubleshoot local and wide-area enterprise networks.

**Program description**

120 hours of classroom and hands-on training and testing provides instruction in driver safety, cargo safety, air brakes, combination vehicles,
tank vehicles and hazardous materials. Training includes pre-trip vehicle inspection, vehicle control and on-road driving (required for skills testing).

**Other important information**

**Prerequisites:**
- 21 years of age
- Valid Ohio CDL-B license
- CDL-A learners permit
- Pass DOT physical/drug screen prior to training
- Pass TDA driving skills assessment test prior to registration

**Program cost**
$3,800 plus $200 non-refundable administrative fee

**Financial aid eligibility**
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**
- Tri-C achievement award
- CDL-A license upon passing state test

**Related Programs/Training**
- Truck Driving and Logistics (Workforce Training Programs) (p. 152)

Learn more about CDL-B to CDL-A Bridge Course

**Cement Masonry, Certificate of Proficiency**

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate Degree in Applied Industrial Technology. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

**Program contact:** Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

**Program Admission Requirements**
- High School Diploma/GED

**Other Information**
- Participants must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship & Training.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.
2. Demonstrate pride of craftsmanship.
3. Recognize and comply with OSHA safety standards and contractor’s policies and procedures.
4. Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.
5. Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.
6. Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.
7. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
8. Maintain a fitness level to be able to meet the physical demands of the job.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1300</td>
<td>Fundamentals of Concrete Construction</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1310</td>
<td>Applied Technical Communications and Economics</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1320</td>
<td>Basic Plan Reading</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1330</td>
<td>Concrete Construction Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-1340</td>
<td>OSHA Standards for Construction</td>
<td>3</td>
</tr>
<tr>
<td>ATCM-1400</td>
<td>Concrete/Cement Forming and Finishing</td>
<td>3</td>
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</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1410</td>
<td>Commercial/Residential Form and Finish</td>
<td>4</td>
</tr>
<tr>
<td>ATCM-2320</td>
<td>Blueprint Fundamentals - Construction</td>
<td>2</td>
</tr>
<tr>
<td>ATCM-2500</td>
<td>Fundamentals of Concrete Curing</td>
<td>1</td>
</tr>
</tbody>
</table>
ATCM-2510  Fundamentals of Concrete Joints  1
ATCM-2520  Basic Cement Patching  2
ATCM-2530  Concrete Restoration  3

Credit Hours  13

Summer Completion
ATCM-2700  Advanced Concrete Finishing  3

Credit Hours  3

Total Credit Hours  30

Certified Associate in Project Management (CAPM)

Program description
The PMI® Certified Associate in Project Management (CAPM®) preparation course is a hands-on learning program that is aligned with the Project Management Institute’s (PMI) Guide to the Project Management Body of Knowledge (PMBOK® Guide). This program is designed to help the student understand and pull together all the knowledge areas and processes of project management necessary to plan and execute, control and close successful projects whether those projects are in construction, information technology, marketing, or any other field.

If you are new to Project Management, train and earn your PMI Certified Associate in Project Management (CAPM®). The CAPM certification is designed as an entry-level certification for project managers with little or no experience.

Other important information
This course prepares you to sit for the PMI CAPM exam. The optional CAPM exam is a separate fee and is scheduled through the PMI.

To sit for the exam, you need to be a member of the Project Management Institute and have:

- High School Diploma or Equivalent
- 1500 hours of experience OR 23 hours of Project Management Training.

With completion of this course, you will have fulfilled the CAPM® Exam prerequisite of 23 hours of project management education, and received additional contact hours designed to guide in exam preparation.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075.

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Information Technology (Workforce Training Institute)
- Business Management (p. 95)
- Business (p. 94)

To Register for and Learn more about the Certificate in Applied Project Management (CAPM) Certified Network Associate Security (CCNA Security)

The Certified Network Associate Security program prepares individuals to meet the demand for skills and knowledge in the area of network security. With a CCNA Security certification, the network professional should be able to demonstrate the skills required to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats. The CCNA Security curriculum emphasizes core security technologies, the installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices, and competency in the technologies that Cisco uses in its security structure. In this course, the student will learn the necessity of a comprehensive security policy and how it affects the strength of the network. The student will also learn to perform basic tasks to secure a small office network using Cisco IOS security features available through web-based GUIs (SDM) and CLI on Cisco routers and switches.

Other important information
- 40 hours of full time classroom instruction.
- Classes run on Saturdays for 5 weeks from 8:30 a.m. – 4:30 p.m.
- Prerequisites: ZCIS-1002: CCNA: Interconnecting Devices (CCNA Routing and Switching) v3 (Bootcamp) ICND1 and ICND2 or equivalent coursework.

Program cost
$1,495
Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related programs/Training
• Cisco Technical Training Institute (Workforce Training Programs) (p. 152)
• Certified Network Associate (CCNA)
• CCNA: Interconnecting Cisco Networking Devices
• Certified Network Professional Security (CCNP Security)
• CCNP Routing and Switching Certification Program

To Register for and Learn more about Certified Network Professional Security (CCNP Security)

Certified Network Professional Security (CCNP Security)

This program prepares the student to perform the task of the Cisco Certified Network Professional Security (CCNP Security). The Cisco Certified Network Professional Security will be able to secure and manage network infrastructures to protect productivity, mitigate threats, and reduce costs. The Cisco Network Security Engineer is responsible for Security in Routers, Switches, Networking devices and appliances, as well as choosing, deploying, supporting and troubleshooting Firewalls, VPNS, and IDS/IPS solutions for their networking environments.

Other important information
Prerequisites: ZCIS-1000 CCNA: Interconnecting Cisco Networking Devices (ICND1) V.3

Program Cost
$5,980

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Related Programs/Training
• Cisco Technical Training Institute (Workforce Training Programs) (p. 152)
• Certified Network Associate (CCNA)
• CCNA: Interconnecting Cisco Networking Devices
• CCNP Routing and Switching Certification Program

To Register for and Learn more about Certified Network Professional Security (CCNP Security)

Chemical Dependency, Short-Term Certificate

The short term Chemical Dependency Certificate of the Human Services program provides students with competencies that enable them to work with people who are chemically dependent. Students in the program can qualify for Chemical Dependency Counselor Assistant Phase I (CDCA I) certification after taking four credit hours in HS-1101, Foundations of Substance Abuse, Addiction and Group Work during their first semester and qualify for Chemical Dependency Counselor Assistant II (CDCA II) certification after taking HS-1200, Treatment Modalities and Diversity Issues in Chemical Dependency in their last semester. In addition, graduates of the short term certificate program are able to receive practical training in the chemical dependency field by completing 105 hours of field experience at a clinical practicum site. Students who are interested in furthering their education and pursuing licensure through the Ohio Chemical Dependency Professionals Board (OCDP), can apply the classes taken in the short term certificate program to the full Associate of Applied Sciences Degree in Human Services.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Related Degrees and Certificates
• Human Services, Associate of Applied Science (p. 310)

Learn more here (p. 125) about how certificate credits apply to the related degree
Program Admission Requirements

• High School Diploma/GED highly recommended, but not required.
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Other Information

• Complete BCI (background) check prior to enrollment in the HS-1850 Introduction to Human Services Principles and Practices practicum course. Log onto: http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html
• Students in the Human Services Program must achieve a grade of "C" or better in all HS AND general education coursework in order to fulfill the graduation requirements for the Human Services Program.
• Non-Human Services majors may enroll in HS courses for which they have satisfied the prerequisite requirements.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ethics/Professionalism. Conduct oneself in a professional manner and apply sound ethical practices according to the Ohio Chemical Dependency Professionals Board. Maintain any licensure or certification obtained.
2. Documentation. Apply/utilize written and computer skills to maintain appropriate client and agency reports, records and documents, especially the ability to navigate and effectively use Electronic Medical Records (EMR) in a clinical setting.
3. Communication. Employ and interpret clear, concise and open communication skills including verbal, non-verbal and written communication in a professional manner.
4. Human Services Concepts. Understand the history, philosophy, theoretical concepts/frameworks and clinical intervention skills related to Chemical Dependency professionals.
5. Human Services Practices. Engage in practices and techniques that encompass group facilitation, behavior change and motivating practices working with diverse client populations.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1101</td>
<td>Foundation of Substance Abuse, Addiction, and Group Work</td>
<td>4</td>
</tr>
<tr>
<td>HS-1300</td>
<td>Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1850</td>
<td>Introduction to Human Services Principles and Practices</td>
<td>5</td>
</tr>
<tr>
<td>HS-1200</td>
<td>Treatment Modalities and Diversity Issues in Chemical Dependency</td>
<td>4</td>
</tr>
</tbody>
</table>
Applicants for Early Childhood Education short-term certificate must be able to sign the Ohio Department of Job and Family Services Statement of Nonconviction, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence [Sections (A)(8) or(A)(9) 109.572, or (A)(1) 5104.09 of the Ohio Revised Code] and that no child has been removed from their home [2151.353 of the Ohio Revised Code].

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use research-based and best practices to include and value children, families and communities; create collaborative respectful reciprocal relationships; support and involve families in advocating for their children's development and learning.
2. Ensure staff is educated and supported to design, implement, assess, and improve curriculum that is developmentally appropriate, culturally relevant, anti-biased, research-based, and aligned to the state standards and the center's mission, vision, and philosophy in order to meet the needs of critical stakeholders (students, families, staff, community, board members, etc.).
3. Develop, implement, evaluate, and revise the organization's strategic plan, short and long term goals, program structure, mission, vision, and philosophy to meet its goals and fulfill its mission involving staff, families, and other stakeholders when appropriate.
4. Advocate and collaborate with policy makers and the public; set staff expectations and provide professional development opportunities and feedback; communicate, motivate, involve, and delegate in a respectful, positive, and meaningful way in order to provide the community with high quality programs.
5. Plan, analyze, interpret, manage, and evaluate markets, communication, budgetary and accounting practices, resources, information, facilities, and disaster emergency preparedness in order to maintain long-term organizational sustainability and provide quality programs and services to families and children.
6. Meet the educational requirements of the Ohio Child Care Resource and Referral Association (OCCRRA) for the Ohio Administrator Credential.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED-1010</td>
<td>Introduction to Early Childhood Education: Children's Development and Programs</td>
<td>4</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ECED-1400</td>
<td>Administration and Leadership in Early Childhood</td>
<td>4</td>
</tr>
<tr>
<td>ECED-2300</td>
<td>Child Behavior and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED-2401</td>
<td>Families, Communities, Schools</td>
<td>3</td>
</tr>
</tbody>
</table>

Child Development, Short-Term Certificate

The Child Development short-term certificate provides students with a specialized comprehensive focus on preparation of applying for the Child Development Associate Credential. The sequence of courses support students with a broader understanding of child development, critical thinking skills, and practice through field experience.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- Complete ENG-0990 Language Fundamentals II with "C" or higher or achieve appropriate score on English Placement Test
- Retrieve the Program Approval Process and Information packet at least two weeks prior to the start of the semester. Students can obtain the packet by contacting the Program Manager or visiting the Department of Social Sciences at the Western Campus.
- Complete ODJFS form 1175 and the BCI/FBI check at an approved ODJFS site using code 5104.013 and return the receipt of completion for background check and ODJFS form 1175 to the Program Manager at least two weeks prior to the start of ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs. Social Security Card and picture ID required for Webcheck background process to be completed. Students under 18 years of age must be accompanied by a parent or legal guardian.
- All BCI and FBI background check information must be submitted to the Program Manager. Students whose reports have not been submitted as per policy, or who do not meet the Prohibitive Offenses Rehabilitation (listed in ODJFS Appendix A to Rule 5101:2-13-09) will not be permitted to continue enrollment in the Early Childhood Education programs or teacher education courses, as student will be unable to complete required field and observation experiences as part of the program requirements approved by the Ohio Department
of Education and the program Accreditor, the National Association for the Education of Young Children (NAEYC).

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Include and value children, families and communities, create respectful reciprocal relationships, support and involve all families in their children's development and learning.
2. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.
3. Create an inviting and enriched environment that supports children's optimal growth and development within the context of group living.
4. Design, implement and evaluate experiences that promote positive development and learning for all children.
5. Integrate and use a variety of respectful, responsive teaching strategies.
6. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles and interact and relate to all persons in a responsive, respectful manner.
7. Display positive leadership qualities within an early childhood environment.
8. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, use Standard English in writing and speaking.
9. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.

Suggested Semester Sequence

Summer Start
ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs 4
Select one of the following:
ENG-1010 College Composition I 3
ENG-101H Honors College Composition I
Credit Hours 7

First Semester
ECED-1301 Language and Literacy in an Integrated Curriculum 1 3
ECED-2300 Child Behavior and Guidance 3
Credit Hours 6

Second Semester
ECED-1860 Experience with Young Children in Early Childhood Settings 3
ECED-2401 Families, Communities, Schools 3
ECED-2600 Child Development Associate Professional Portfolio 1
Credit Hours 7
Total Credit Hours 20

Cisco Network Support Technician

Program description
The Network Support Technician Training Program is designed using a progressive career ladder framework resulting in preparation to pass two (2) industry-standard Cisco certifications: CCNA (routing and switching) and CCNA Wireless (IUWNE). Skills and certifications acquired during the program will provide a base of Cisco networking experience that can be built upon in the future.

CISCO certification ensures high standards of technical expertise. Achieving CISCO certification at any level means joining the ranks of skilled network professionals who have earned recognition and respect in the industry.

Other important information
The Network Support Specialist program prepares individuals to pass four industry-standard Cisco certification exams: CCENT (Cisco Certified Entry Networking Technician), CCNA (Cisco Certified Networking Associate), CCNA Wireless (Cisco Certified Networking Associate Wireless) and CCSA (Cisco Certified Security Associate) and a career in the networking, security and telecommunication industries. Skills and certifications acquired during the program will provide a base of Cisco networking experience that can be built upon in the future.

• 10 weeks of full time classroom instruction.
• Classes run Monday - Friday from 8:30am – 4:30pm
• Job placement assistance to follow for those that have passed their certification exams.

Program cost
$100 fee for background check (prior to application)
Tuition, books, testing fees and career development funded through grant

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
• Cisco Certified Network Associate (CCNA)
• Cisco Certified Network Associate (CCNA Wireless)
Related Programs/Training

- Cisco Technical Training Institute (Workforce Training Programs) (p. 152)
- Certified Network Associate (CCNA)
- Certified Network Associate Voice (CCNA Voice)
- CCNA: Interconnecting Cisco Networking Devices

To Register for and Learn more about Network Support Technician

Cisco Technical Training Institute

Cisco certification ensures high standards of technical expertise. Achieving Cisco certification at any level means joining the ranks of skilled network professionals who have earned recognition and respect in the industry.

The first three levels of certification and specialization that Cisco provides for IT professionals can follow several different tracks to meet individual needs. There are many paths to Cisco certification, but only one requirement: passing one or more exams for demonstrating the knowledge and skill.

1st Level of Certification

Cisco Certified Network Associate (CCNA)

- Interconnecting Cisco Networking Devices (ICND1)
- Interconnecting Cisco Networking Devices: Accelerated (CCNAX) V2 (Bootcamp)

Cisco Certified Voice Associate (CCVA)

- Introducing Cisco Voice and UC Administration v8.0 (ICOMM)

Cisco Certified Service Provider (CCNA SP)

- Building Cisco Service Provider Next-Generation Networks, Part 1 (SPGN1)
- Implementing Cisco IOS Unified Communication

Cisco Certified Design Associate (CCDA)

- Designing for Cisco Internetwork Solutions

Cisco Certified Security: Security Associate (IINS)

- Implementing Cisco IOS Network Security

Cisco CCNA Wireless Certification (IUWNE)

- Implementing Cisco Unified Wireless Networking Essentials (IUWNE)

Cisco Certified Network Associate Data Center (CCNA Data Center)

- Introducing Cisco Data Center Networking (DCICN)
- Introducing Cisco Data Center Technologies (DCICT)

Cisco Certified Network Associate Industrial

- Managing Industrial Networks for Manufacturing with Cisco Technologies (200-601 MINS2)
- Managing Industrial Networks for Manufacturing

CCNA Cloud

- Understanding Cisco Cloud Fundamentals (CLDADM)
- Introducing Cisco Cloud Administration

2nd Level of Certification

Cisco Certified Network Professional (CCNP)

Three courses to be taken in preparation for the CCNP exam

- Implementing Cisco IP Routing (ROUTE)
- Implementing Cisco IP Switched Networks (SWITCH)
- Troubleshooting and Maintaining Cisco IP Networks

Cisco Certified Design Professional (CCDP)

Three courses to be taken in preparation for the CCDP exam

- Implementing Cisco IP Routing (ROUTE)
- Implementing Cisco IP Switched Networks (SWITCH)
- Designing Cisco Network Service Architectures (ARCH)

CCNP Voice

Five courses to be taken in preparation for the CCVP exam

- Implementing Cisco Unified Communications and QoS v8.0 (CVOICE)
- Implementing Cisco Unified Communications Manager, Part 1 v8.0 (CIPT1)
- Implementing Cisco Unified Communications Manager, Part 2 v8.0 (CIPT2)
- Troubleshooting Cisco Unified Communications (TVOICE)
- Integrating Cisco Unified Communications Applications (CAPPS)

CCNP Security

Four courses to be taken in preparation for the CCSP exam

- Implementing Cisco Secure Access Solutions (SISAS)
- Implementing Cisco Edge Network Security Solutions (SENDOS)
- Implementing Cisco Secure Mobility Solutions (SIMOS)
- Implementing Cisco Threat Control Solutions (SITCS)

CCNP Service Provider

Four courses to be taken in preparation for the CCNP Service Provider exam

- Deploying Cisco Service Provider Network Routing (SPROUTE)
- Deploying Cisco Service Provider Advanced Routing (SPADVROUTE)
- Implementing Cisco Service Provider Next-Generation Core Network Services (SPCORE)
- Implementing Cisco Service Provider Next-Generation Edge Network Services (SPEDGE)
3rd Level of Certification
Cisco Certified Internetwork Expert (CCIE)

Specialist Certifications
Cisco Wireless Technology Specialist Certifications

- Implementing Cisco Unified Wireless Networking Essentials
- Cisco Advanced Wireless LAN Field Specialist
- Wireless Security

Securing Cisco Networks with Threat Detection and Analysis (SCYBER)

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Learn more here (p. 152) and here about how certificate credits apply to the related degree.

To Register for and Learn more about CISCO Technical Training Institute

Cisco, Short-Term Certificate

Students will be prepared for careers dealing with network hardware systems analysis, planning and implementation. Students will gain the necessary skills to design, build and maintain small to medium size networks and manage network hardware systems.

Skills acquired prepare students to take the Cisco certification exams, specifically the Cisco Network Associates (CCNA) exams.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 144) and here (p. 155) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology networking solutions in the context of business needs.
9. Apply fundamental concepts of Cisco routing and switching hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support Cisco hardware and software to ensure an efficient and effective operation.
10. Apply knowledge of Cisco network hardware, the Open Systems Interconnection (OSI) Model, protocols, diagnostic tools and troubleshooting to assist in the design, selection of equipment, installation, configuration, testing and optimization of an organization’s production network to ensure appropriate access and response time.
11. Use knowledge of network backup hardware and software to implement, maintain, and execute an organization disaster recovery plans.
12. Sit for the CCNA certification exams.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
</tr>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
</tr>
<tr>
<td>Total</td>
<td>Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1302</td>
<td>Cisco I: Basic Networking Technologies</td>
</tr>
<tr>
<td>EET-1312</td>
<td>Cisco II Basic Routing and Switching</td>
</tr>
<tr>
<td>Total</td>
<td>Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-2302</td>
<td>Cisco III Intermediate Routing and Switching</td>
</tr>
</tbody>
</table>
### Class A CDL Truck Driver Training

**Program description**

160 hours of classroom and hands-on training and testing provides instruction in driver safety, transporting cargo safety, air brakes, combination vehicles, tank vehicles, and hazardous materials. Training includes pre-trip vehicle inspection, vehicle control, and on-road driving (required for skills testing).

**Course includes:**

- 40 hours classroom instruction
- 10 hours CDL permit testing preparation
- 40 hours minimum actual behind-the-wheel time that combines skills training (maneuverability) and road training.
- 70 hours of combined time spent observing skills, working on the Pre-Trip Inspection that is required to pass the state CDL test, plus the actual state CDL test itself.

**Other important information:**

**Prerequisites:**

- 18 years of age
- Valid Ohio driver’s license
- Must pass DOT physical/drug screen prior to training
- High school diploma or GED required

A separate Truck Driving application is required (available online or in person).

This program is licensed by the Ohio Department of Public Safety as a CDL driver training school.

**Program cost**

$5,495 plus non-refundable $200 administrative fee

**Financial aid eligibility**

This program is not Federal Financial Aid/Pell Eligible.

---

### Class A or B CDL Refresher Course

**Program description**

Includes classroom and hands-on training and observation time

**Other important information**

**Prerequisites:**

- You must be 18 years of age
- You must possess a current Ohio CDL A or B license
- You must possess a current DOT physical/drug screen card

**Program cost**

$1,695 plus $200 non-refundable administrative fee

**Financial aid eligibility**

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

 Upon completion students receive

A Tri-C Achievement Award and a certificate of completion from the Ohio Department of Public Safety

**Related Programs/Training**

- Truck Driving and Logistics (Workforce Training Programs) (p. 152)

Learn more about the Class A or B CDL Refresher Course.
Class B CDL Accelerated Training

Program description
This 120-hour course is designed to familiarize the student with the skills required to obtain a Class B CDL driver's license. It includes classroom work, driving-skills training and road driving.

- 40 hours of classroom time and testing, covering all federal requirements
- Minimum of 10 hours of skills pad (maneuverability) training
- Minimum of 10 hours of on-the-road training
- An additional 20 hours of driving behind the wheel working on either maneuverability skills or road skills
- 40 hours for pre-trip, test preparation and testing

Other important information
Prerequisites:
- 18 years of age
- Valid Ohio driver’s license
- Must pass DOT physical/drug screen prior to training

High school diploma or GED required

A separate Truck Driving application is required (available online or in person)

This program is licensed by the Ohio Department of Public Safety as a CDL driver training school.

Program cost
$4,200 plus $200 non-refundable administrative fee

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
A Tri-C Achievement Award and a certificate of completion from the Ohio Department of Public Safety

Related Programs/Training
- Truck Driving and Logistics (Workforce Training Programs) (p. 152)

Learn more about Class B CDL Accelerated Training

Cleveland Codes Tri-C Software Developers Academy

Program description
Cleveland Codes is a full time, 16-week IT Fast Track Program. This fully immersive approach to learning provides students with the skills necessary to pursue a career in web application and development, learning to program C# within the .NET framework. Students take the Microsoft Development Fundamentals Exam 98-361 in order to receive their Microsoft Technology Associate (MTA) certification.

Cleveland Codes students attend classes on campus for 16 weeks, Monday through Friday from 8:30am to 4:30pm. With successful completion of all program requirements, students will have the opportunity to connect with many resources to assist with internships and or job placement.

Other important information
Students develop key skills in:
- HTML & CSS
- JavaScript/jQuery
- SQL Server
- Object Oriented Programming
- Technical Interviewing and Career Development

Program cost
Grant funded

Visit the Corporate College website here for pricing

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Information Technology (Programming and Development) (p. 104)
- Introduction to Web Design with HTML5
- Advanced Web Design with JavaScript
- Digital Marketing Bootcamp
The CNC Machining and Composites Manufacturing Program is a Fast-Track Training Program for students looking to gain entry into the areas of Composite Manufacturing and Precision Machining. The program is divided equally between classroom and hands-on training. Students learn the fundamentals of becoming a Skilled Machinist on both manual and CNC machine tools. The CNC Machining and Composites Manufacturing Technology Program provides the theoretical and hands-on experience to enable the student to enter the industry at the pre-apprenticeship level.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.
2. Be reliable, conscientious, respectful and committed to the organization’s mission.
3. Apply principles and practice of safety while performing daily tasks.
4. Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.
5. Apply advanced concepts of shop math, blueprint reading, inspection and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMT-1000</td>
<td>4</td>
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<tr>
<td>ATMT-1100</td>
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<table>
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<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATMT-1110</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-1200</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-1300</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-2120</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credit Hours 27

CNC Technology Certificate Program

Program description

The CNC Technology certificate program offers training for both new and experienced personnel. Students new to CNC can complete the entire program to learn the skills necessary for entry level employment as a CNC operator. Experienced CNC personnel can attend any of the courses they choose to upgrade their skills.

Other important information

Program entry requirements:

• Ability to read basic blueprints
• Ability to read a micrometer
• Ability to describe milling and turning

Program cost

$4,450, for entire program

• $595 per class
• $295 per lab

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive

• Certificate for each class or lab successfully completed
• Program certificate for completing all five classes
Related Programs/Training

- Manufacturing Industrial Engineering Technology (p. 147)
- Advanced Manufacturing and Engineering (Workforce Training Programs)

Learn more about CNC Technology Certificate Program

Communication Transport Systems, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- 18 years old; Valid driver’s license

Other Information

- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsperson.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
2. Communicate the scope of their work with crew members, general contractors, and end users.
3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.
4. Work in accordance with the Communication Workers of America’s (CWA) Code of Ethics.
5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.
6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.
7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.
8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.
9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users’ satisfaction.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATCW-1010 Worker Safety for Communication Transport</td>
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<tr>
<td>ATCW-1020 Communications Worker History</td>
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<tr>
<td>ATCW-1040 Basic Information Systems</td>
<td>2</td>
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<tr>
<td>ATCW-1210 Introduction to Information Transport - Copper</td>
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<td>ATCW-xxxx Elective</td>
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<td>DEGR-xxxx General Elective (See List Below)</td>
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<td><strong>Total Credit Hours</strong></td>
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<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATCW-1250 Infrastructure Layout</td>
<td>2</td>
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<tr>
<td>ATCW-1270 Grounding and Bonding</td>
<td>1</td>
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<tr>
<td>ATCW-2010 Information Transport - Fiber</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-2050 Audio Visual</td>
<td>1</td>
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<tr>
<td>ATCW-xxxx Elective</td>
<td>2</td>
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<tr>
<td>ISET-1410 Applied Electricity I</td>
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<td>Select one of the following:</td>
<td>3</td>
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<tr>
<td>IT-1090 Computer Applications</td>
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<tr>
<td>IT-109H Honors Computer Applications</td>
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<tr>
<td><strong>Credit Hours</strong></td>
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<th>Summer Completion</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATCW-2070 Information Transport Circuits</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-2120 Advanced Systems Transport</td>
<td>2</td>
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<tr>
<td><strong>Total Credit Hours</strong></td>
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Electives

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<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
</tbody>
</table>
Community Health Worker

Program Description
A Community Health Worker (CHW) is a frontline public health worker who is a trusted member of and/or who understands the community served. This enables the worker to serve as a liaison between healthcare/social service organizations and the community to facilitate access to services and improve the quality and cultural competence of service delivery. Community Health Workers collaborate with patients to help them access essential community resources and resolve challenges they encounter in the places where they live, learn, work, and play. Community Health Workers work in various settings like community health centers, non-profit organizations, public health clinics, clinics, public housing organizations, hospitals, and client's homes. They have many titles, depending on where they work, who they work for and what they do. The work of a Community Health Workers is sometimes done as Community Care Coordinators, Community Health Advisors, Community Resource Specialists, Navigation Specialists, and Outreach Workers/ Specialists.

Other Important Information
- The classroom training may be offered during the day, in the evenings or on the weekends.
- In order to obtain certification, students must complete 100 hours of classroom training, 130 hours of clinical/field service work, an online Ohio Board of Nursing application ($35 fee) and successfully pass an Ohio Board of Nursing background check (fee not included).
- Clinicals/field service work are available during the day, mostly with limited availability in the evenings and weekends. The College's Health Care Immunization requirements and clearance of the health careers background check (background check fee included in tuition) must be completed before any field service assignment.
- High School Diploma/GED required
- Integrated Career & Job Readiness
- Career Day & Graduation Ceremony
- Please contact the office for further details at 216-987-2925 or 216-987-3171.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Upon completion students receive
- Ohio Board of Nursing Certificate as Community Health Worker
- Tri-C Certificate of Completion
- American Heart Association BLS CPR for Health Care Providers

Related Programs/Training
- Health Care (Workforce Training Programs)

To Register for and Learn more about Community Health Worker

Comprehensive Patient Access Specialist

Program Description
The Patient Access Specialist is often the first person a patient sees when they arrive at a hospital, doctor's office or any medical admitting department. They are an advocate for both the patient and the health care facility. As the “face” of the healthcare organization, Patient Access Specialists have an effect on both the revenue cycle and the patient experience. They often provide exceptional customer service to patients, their family members and the clinical teams they support. Patient Access Specialists are employed in: Hospitals, Nursing Homes, HMOs/PPOs, Freestanding Surgery Centers, Call Centers, Ambulatory Care Centers, Physician Offices, and Clinics. Their role can fall under many different titles such as Patient Service Representative, Registration Representative, Access Representative, Registration Technician, Insurance Verifier, Pre-registration Specialist and Financial Counselor.
Other Important Information
• High School Diploma/GED required
• Integrated Career & Job Readiness
• Mandatory CHAA National Exam Review Session
• Private CHAA National Exam on site
• Career Day & Graduation Ceremony
• Contact 216-987-2925 or 216-987-3171 for further details.

Program cost
Visit the Corporate College website here for pricing.

Cost includes all text materials and CHAA national exam fees.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
• Eligibility to sit for the Certified Healthcare Access Associate (CHAA) exam through the National Association of Healthcare Access Management (NAHAM)
• Tri-C Certificate of Completion
• A non-paid optional externship opportunity upon successful passing of the CHAA exam and is contingent upon employer availability and needs.

Related Programs/Training
• Health Care (Workforce Training Programs)
• Comprehensive Professional Medical Coding Program
• Comprehensive Professional Medical Coding Program - Online

To Register for and Learn more about Patient Access Specialist

Comprehensive Professional Medical Coding (Classroom)

Program Description
Certified Professional Medical Coders are an important component of the medical billing process and the health care team. Whenever a patient receives care in a physician’s practice, hospital outpatient facility or ambulatory surgical center, the provider must document what services were performed. The Certified Professional Coder reviews the documentation in the medical record to determine the services provided and assigns codes (CPT codes, ICD-10 codes and HCPCS codes) so that medical claims can be submitted for reimbursement.

This comprehensive program utilizes the American Academy of Professional Coders (AAPC) curriculum that includes Medical Terminology, Anatomy and Physiology, CPT Coding, ICD-10 Coding, and HCPCS Coding and is designed to prepare individuals to take the Certified Professional Coder (CPC) examination. Each course is required for successful completion of the program.

Other Important Information
• This is a face-to-face classroom session.
• High School Diploma/GED required
• Integrated Career & Job Readiness
• CPC Online Practice Exams
• Mandatory CPC Mock Exam/Review Session
• Private CPC Exam on site
• Required AAPC test results released
• Career Day and Graduation Ceremony
• Contact 216-987-2925 or 216-987-3171 for further details.

Program cost
Visit the Corporate College website here for pricing.

Cost includes all text materials, CPC National Exam fee and AAPC Student Annual Membership.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
• Eligibility to sit for the Certified Professional Coder (CPC) exam through the American Academy of Professional Coders (AAPC)
• Tri-C Certificate of Completion
• AAPC Student Annual Membership
• An optional, unpaid externship opportunity is available upon: passage of the CPC exam; successful completion of the College’s Health Care Immunization and background check requirements; and contingent upon employer availability and needs. The cost of the background check included in tuition.
• Practicodes offered following successful passing of CPC national exam to obtain work experience. Completion of the Practicode program will remove one year of apprentice designation.

Related Programs/Training
• Comprehensive Certified Professional Medical Coder - Online (p. 243)
• Health Care (Workforce Training Programs)
• Patient-Access Specialist Program
• Health Information Management Technology (p. 124)

To Register for and Learn more about Comprehensive Certified Professional Medical Coder (CPC)
Comprehensive Professional Medical Coding (Online)

Program Description
Certified Professional Medical Coders are an important component of the medical billing process and the health care team. Whenever a patient receives care in a physician’s practice, hospital outpatient facility or ambulatory surgical center, the provider must document what services were performed. The Certified Professional Coder reviews the documentation in the medical record to determine the service provided and assigns codes (CPT codes, ICD-10 codes and HCPCS codes) so that medical claims can be submitted for reimbursement.

This comprehensive program utilizes the American Academy of Professional Coders (AAPC) curriculum that includes Medical Terminology, Anatomy and Physiology, CPT Coding, ICD-10 Coding, and HCPCS Coding and is designed to prepare individuals to take the Certified Professional Coder (CPC) examination. No courses can be opted out.

Other Important Information
• This course is offered through an online environment.
• High School Diploma/GED required
• WebEx sessions offered for Instructor/Coach support
• Integrated Career & Job Readiness
• CPC Online Practice Exams
• Mandatory CPC Mock Exam/Review Session
• Private CPC Exam on site
• Required AAPC test results released
• Career Day and Graduation Ceremony
• The online session is recommended for students that have prior related Coding, Medical Terminology, Anatomy & Physiology and/or related healthcare experience either academically or professionally. In addition, intermediate computer skills are essential in the online session.
• Contact 216-987-2925 or 216-987-3171 for further details.
• Registration for class is suggested one week prior to start of classes to allow for shipment of text materials. Classroom based training is also available.

Program cost
Visit the Corporate College website here for pricing.

Cost includes all text materials, CPC National Exam fee and AAPC Student Annual Membership.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
• Eligibility to sit for the Certified Professional Coder (CPC) exam through the American Academy of Professional Coders (AAPC)
• Tri-C Certificate of Completion
• AAPC Student Annual Membership
• An optional, unpaid externship opportunity is available upon: passage of the CPC exam; successful completion of the College’s Health Care Immunization and background check requirements; and contingent upon employer availability and needs. The cost of the background check included in tuition.
• Practicodes offered following successful passing of CPC national exam to get real work experience. Completion of the Practicode program will remove one year of apprentice designation.

Related Programs/Training
• Comprehensive Professional Medical Coding Program - Classroom
• Health Care (Workforce Training Programs)
• Patient-Access Specialist Program
• Health Information Management Technology (p. 124)

To Register for and Learn more about Comprehensive Professional Medical Coding – Online

CompTIA Certified Computer Support Specialist

Program description
IT success stories start with CompTIA certifications. It validates understanding of the most common hardware and software technologies in business and certifies the skills necessary to support complex IT infrastructures. CompTIA offers powerful credentials that helps IT professionals worldwide ignite their IT career.

Other important information
Why CompTIA Certification?
• Computer Technicians are increasingly at the front line of cyber security
• Network infrastructure has become more reliant on the cloud
• Provides foundational level skills and is vendor neutral
• Prepares today’s IT professionals for tomorrow’s technology

Why Tri-C?
• Various scheduling options are available:
  • Full-time or Part-time
  • Day, Night or Weekend
• Course available for a variety of skill levels:
  • Entry (IT Fundamentals)
  • Associate (CompTIA A+)
  • Professional (Network+, Security+)
• State of the art classrooms with certified instructors

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
• Information Technology (p. 152)
• Business Management (p. 95)
• Business (p. 94)

To Register for and Learn more about CompTIA Certified Computer Support Specialist

Computer Aided Design (CAD)

Program description
The computer aided design (CAD) program offers courses designed for business and industry professionals who want to quickly learn or enhance their skills in AutoCAD, Revit or SolidWorks software. Students can enroll in any or all classes based on their specific needs.

Other important information
Program entry requirements:
• Basic computer skills

Program cost
$475-$695 per course

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Upon completion students receive
Certificate for each class completed

Related Programs/Training
• Manufacturing Industrial Engineering Technology (p. 147)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Computer Aided Design (CAD)

Computer Maintenance Technology, Certificate of Proficiency

Students will be prepared with the knowledge and skills essential for a career as an entry-level service technician. They will be prepared to service computers and peripherals by discovering how to install, configure, diagnose, repair, upgrade and maintain microcomputers. Skills acquired will assist students in preparing to take industry A+ Certification exams. A+ Certification is an industry recognized credential that distinguishes one as a knowledgeable service professional.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 144) and here (p. 155) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements
• High School Diploma/GED
• IT-1090 Computer Applications or IT-109H Honors Computer Applications
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Prepared to sit for A+ certification exam.

Suggested Semester Sequence

Program Admissions Requirements Semester Credit Hours

Select one of the following:

| IT-1090 | Computer Applications | 3 |
| IT-109H | Honors Computer Applications | 3 |

Summer Start

| Credit Hours |
| EET-1015 | Introduction to Computer Maintenance and Repair | 3 |
| IT-1025 | Information Technology Concepts for Programmers | 3 |

Credit Hours

First Semester

| Credit Hours |
| EET-1035 | Operating Systems and Software for PC Technicians | 4 |
| EET-1055 | Computer Hardware Support | 4 |

Select one of the following:

| Credit Hours |
| ENG-1010 | College Composition I | 3 |
| ENG-101H | Honors College Composition I | 3 |
| ITNT-2300 | Networking Fundamentals | 3 |

Second Semester

| Credit Hours |
| BADM-1050 | Professional Success Strategy | 3 |
| ITNT-2310 | TCP/IP | 3 |
| ITNT-2320 | Network Administration I | 3 |

MATH-1xxx (p.) 1000-level MATH course or higher 3

| Credit Hours |
| Total Credit Hours | 35 |

1 Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.

Computer-Aided Drafting (CAD), Certificate of Proficiency

This program is for students who wish to acquire computer drafting skills for entry-level positions in a variety of industries. Students will get background knowledge to aid them in developing 2D drawings with an introduction to 3D CAD.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes and product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Utilize modern CAD tools and technology and appropriate engineering drafting principles to create and revise drawings that meet design and quality specifications.

6. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.

This program is for students who wish to acquire skills in the 2D/3D modeling of engineering designs and graphics based programming and production of engineering parts, and operation of computer integrated manufacturing systems. Graduates of this program qualify for entry-level employment in traditional and computer integrated modern manufacturing industries.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure**

### Program Admission Requirements

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problem towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts, and utilize appropriate math, measurement, data collection and statistical tools, and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply knowledge of math, machine principles, tools and materials to operate and monitor CNC machines, modify CNC code that ensures quality outcomes.

6. Interpret geometrical dimensioning and tolerancing (GD&T) concepts: symbols, instructions used in establishing form, locations, and orientation tolerances of parts’ features to ensure that quality engineering parts are machined and assembled to achieve desired functionality.

7. Apply operational principles, software, concepts, tools equipment, and machines of Computer Integrated Manufacturing Systems (CIMS), including: programming CIMS to implement production scheduling, materials movement, parts production and quality control; and setting up and operating machine and interface software.
equipment in a computer-integrated environment to produce quality parts at low and competitive costs.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
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</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td></td>
<td>14</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
<td>3</td>
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</tr>
<tr>
<td>MET-2000</td>
<td>CAD/CAM Processes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MET-2140</td>
<td>Manufacturing Automation and Control</td>
<td>3</td>
<td></td>
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<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
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<tr>
<td>MET-xxxx</td>
<td>Elective</td>
<td>1-3</td>
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<tr>
<td><strong>Select one of the following:</strong></td>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td></td>
<td>9-12</td>
</tr>
</tbody>
</table>

**Conflict Resolution and Peace Studies, Short-Term Certificate**

This certificate will provide the student with the theory and skills of conflict resolution and with an opportunity to implement this knowledge in the community.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 138) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure**

**Program Admissions Requirements**

- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

**Other Information**

- The capstone course, POL-2140 Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning, has a service learning as a requirement.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Analyze and assess conflict in all of its stages and manifestations in order to intervene effectively and ethically to successfully reduce, manage, or resolve conflict.

2. Listen and utilize nonverbal, emotional and cultural/personal perspectives to validate each party's issue/interest, to facilitate de-escalation and engagement to move towards resolution while maintaining a neutral process.

3. Facilitate community building by engaging stakeholder representative through collaboration and teamwork while maintaining a safe and objective environment.

4. Apply problem-solving techniques and knowledge of social/emotional intelligence to analyze and evaluate the roots of conflict, (including structural, cultural, emotional and economical differences), and their effects on individuals to create and sustain a peaceful community.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select 1 or 2 Electives from below list</td>
<td>3-6</td>
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</tr>
<tr>
<td><strong>Select one of the following:</strong></td>
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<td></td>
<td>3</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td></td>
<td>9-12</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL-2040</td>
<td>Conflict Resolution Skills</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select 1 or 2 Electives from below list</td>
<td>3-6</td>
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<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td></td>
<td>6-9</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL-2140</td>
<td>Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select 1 Elective from below list</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Electives**

Select from the below list of courses to fulfill elective requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1122</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1020</td>
<td>History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
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<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
<td>3</td>
</tr>
<tr>
<td>POL-2050</td>
<td>Study Abroad in Peace and Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
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<tr>
<td>PSY-2020</td>
<td>Life Span Development</td>
<td>4</td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
<td>4</td>
</tr>
<tr>
<td>PSY-2040</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2060</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2010</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC-201H</td>
<td>Honors Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women's Studies</td>
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<tr>
<td>WST-200H</td>
<td>Honors Women and Reform</td>
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</tr>
</tbody>
</table>

**Construction Engineering Technology, Associate of Applied Science**

This program prepares students for the construction industry with positions in scheduling, estimating, sales & marketing, assistant project management, assistant field superintendents, and project engineers. The program includes comprehensive study in contract documents, construction materials & methods, scheduling, and estimating for residential and light commercial building. Graduates can be employed with construction contractors, engineering/architectural firms, building material suppliers, public building agencies, or they can transfer into university programs in construction management.

**Program contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 166) about how certificate credits apply to the related degree.

**Program Admission Requirements**

- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English placement test.
- MATH-0965 Intermediate Algebra, with "C" or higher, or appropriate score on Math placement test.
- Complete the following:
  - CNST-1281 Construction Engineering Orientation
  - CNST-1731 Construction Print Reading
  - IT-1090 Computer Applications

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize purpose for building information modeling within building design.
2. Monitoring project work for compliance with contract documents.
3. Perform basic surveying tasks including layout of vertical and horizontal alignments, comprehend the underlying mathematical principles and apply the information obtained.
4. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
5. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, and implement project processes for successful project completion.
6. Using critical path method to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard technology.
7. Apply sound estimating and cost management principles, using industry standard computer technology to develop and maintain an organized management tool that effectively projects and communicates the projects financial status.
8. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
9. Use verbal and written skills with technological tools to clearly and effectively communicate, using appropriate protocols to project stakeholders.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>CNST-1281</td>
<td>Construction Engineering Orientation</td>
<td>3</td>
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<tr>
<td></td>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
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<td>MATH-1530</td>
<td>College Algebra</td>
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<tr>
<td></td>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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</tbody>
</table>

This program prepares students for the construction industry with positions in scheduling, estimating, sales & marketing, assistant project management, assistant field superintendents, and project engineers. The program includes comprehensive study in contract documents, construction materials & methods, scheduling, and estimating for residential and light commercial building. Graduates can be employed with construction contractors, engineering/architectural firms, building material suppliers, public building agencies, or they can transfer into university programs in construction management.

**Program contact:** Learn more

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Learn more (p. 166) about how certificate credits apply to the related degree.

**Program Admission Requirements**

- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English placement test.
- MATH-0965 Intermediate Algebra, with "C" or higher, or appropriate score on Math placement test.
- Complete the following:
  - CNST-1281 Construction Engineering Orientation
  - CNST-1731 Construction Print Reading
  - IT-1090 Computer Applications

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

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2. Monitoring project work for compliance with contract documents.
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5. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, and implement project processes for successful project completion.
6. Using critical path method to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard technology.
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<tr>
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<td></td>
<td>Select one of the following:</td>
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**Program contact:** Learn more

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Learn more (p. 166) about how certificate credits apply to the related degree.

**Program Admission Requirements**

- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English placement test.
- MATH-0965 Intermediate Algebra, with "C" or higher, or appropriate score on Math placement test.
- Complete the following:
  - CNST-1281 Construction Engineering Orientation
  - CNST-1731 Construction Print Reading
  - IT-1090 Computer Applications

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

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<tr>
<td></td>
<td>Select one of the following:</td>
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<td></td>
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<td>College Composition I</td>
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</table>
EN-101H Honors College Composition I

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IT-1090</td>
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<tr>
<td>IT-109H</td>
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Credit Hours 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CNST-1410 Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1750 Construction Safety</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131 Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540 Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210 College Physics I</td>
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</table>

Credit Hours 16

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CNST-2201 Introduction to Building Information Modeling</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2210 Mechanical and Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990 Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151 Technical Writing</td>
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<tr>
<td>MET-1601 Technical Statics</td>
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Credit Hours 16

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CNST-2330 Construction Scheduling</td>
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</tr>
<tr>
<td>CNST-xxxx CNST Elective</td>
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</tr>
<tr>
<td>MET-2200 Strength of Materials</td>
<td>3</td>
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<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 33)</td>
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Select one of the following: 3-4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tr>
<td>ACCT-1020 Applied Accounting</td>
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<tr>
<td>ACCT-1311 Financial Accounting 2</td>
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</table>

Credit Hours 15-16

Total Credit Hours 62-63

1 CNST-1510 Green Building & Sustainability I recommended for university transfer
2 ACCT-1311 Financial Accounting recommended for university transfer.

Construction Project Management, Certificate of Proficiency

The certificate program prepares students for entry level employment in areas involving construction project management including cost/quantity estimating, project scheduling, and CAD Technician. Program includes coursework in construction print reading, green building & sustainability, CAD, scheduling, and construction management practices.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 166) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II with grade of "C" or higher, or appropriate score on English Placement Test.
- MATH-0965 Intermediate Algebra with grade of "C" or higher, or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Monitoring project work for compliance with contract documents.
2. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
3. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, perform contract document tasks, and implement project processes for successful project completion.
4. Use various methods to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard software.
5. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
6. Use verbal and written skills with technological tools to clearly and effectively communicate using appropriate protocols to project stakeholders.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1281 Construction Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731 Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530 College Algebra</td>
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</tr>
</tbody>
</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENG-1010 College Composition I</td>
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<tr>
<td>ENG-101H Honors College Composition I</td>
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Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
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<tr>
<td>IT-109H Honors Computer Applications</td>
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</table>

Credit Hours 16

Cuyahoga Community College 2019-2020 Catalog 249
Second Semester

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
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<td>Architectural CAD I</td>
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</tr>
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<td>CNST-1750</td>
<td>Construction Safety</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours 16

Total Credit Hours 32

Construction Tending and Hazardous Material Abatement, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. These apprentices assist other trades on the job site as well as prepare the job site by removing any hazardous materials. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Aptitude test

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.

4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.

5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.

6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.

7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.

8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).

9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ATLB-1010</td>
<td>Craft Orientation for Laborers</td>
<td>1</td>
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<tr>
<td>ATLB-1020</td>
<td>Measurements and Leveling</td>
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<tr>
<td>ATLB-1210</td>
<td>Concrete Placement</td>
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<tr>
<td>ATLB-1340</td>
<td>Mason Tending</td>
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<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
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Credit Hours 13

Second Semester

<table>
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<td>ATLB-2650</td>
<td>Demolition Techniques</td>
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<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
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<tr>
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<td>Laborer Elective</td>
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Credit Hours 9

Summer Completion

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<tr>
<th>Course</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>ATLB-2110</td>
<td>Small Engines &amp; Concrete Saws</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-2120</td>
<td>Pneumatic Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours 8

Total Credit Hours 30
Court Reporting Technologies, Short-Term Certificate

A student receiving the Short-Term Certificate can work as a scopist or transcriptionist for a court reporting firm, doctor’s office, or as an independent contractor utilizing either steno or voice writing technology.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 99) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admissions Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Utilize CAT software and knowledge of stenotype to produce transcripts and write at a minimum speed of 140 wpm with 95% accuracy.


Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
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<td>C&amp;CR-1000</td>
<td>Introduction to Court Reporting</td>
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Second Semester

<table>
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<td>C&amp;CR-1331</td>
<td>Realtime Theory II &amp; Realtime Theory III</td>
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Credit Hours: 8

Third Semester

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Credit Hours: 2

Summer Completion

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<td>C&amp;CR-1451</td>
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<tr>
<td>C&amp;CR-1601</td>
<td>Court Reporting Technology</td>
</tr>
<tr>
<td>C&amp;CR-2200</td>
<td>Medical Terminology for Captioning and Court Reporting</td>
</tr>
</tbody>
</table>

Credit Hours: 10

Total Credit Hours: 27

Criminal Justice with a Concentration in Basic Police Academy, Associate of Applied Science

This program is designed for students who have made the career decision to be peace officers and are enrolled in the Basic Peace Officer Academy affiliated with Cuyahoga Community College. The program provides opportunities for specific police training, as well as the educational base to prepare for career promotions.

Program contact: Learn more

Learn more (p. 160) about related degrees and training programs.

Related Degrees and Certificates

- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice ( Corrections), Associate of Applied Science (p. 253)
• Criminal Justice (Security Administration), Associate of Applied Science (p. 254)
• Criminal Justice (Basic Police Academy), Certificate of Proficiency (p. 256)

Related Training and Credentials
• Basic Police Academy (p. 213)

Program Admission Requirements
Completion of this degree program requires admission to and successful completion of the College’s Basic Police Academy. Students can work on program requirements that are not part of the Academy required curriculum before acceptance/during the application process to the Academy. Academy admission requirements are outlined below:

- Application is required and available here.
- High School Diploma/GED
- pass the Entry Physical Fitness Assessment Exam
- apply for and be accepted as a student at Tri-C and be in good financial and academic standing
- successfully pass the National WebCheck for Law Enforcement (BCI&I/FBI)
- successfully pass the five-panel drug screen
- receive a physical exam in good health from their physician
- have a valid Ohio driver’s license and currently have full driving privileges in the State of Ohio
- NOT have a criminal background
- be at least 20 years old at the time of acceptance to the Academy*

Other Information

*AGE GUIDELINES: Except under very rare circumstances, the Academy does not accept individuals under the age of 20. If an exception is made, the potential Cadet should understand the likelihood of being hired / sworn (offered a Commission) with a police department until he/she is 21 years of age. The College also requires that all firearms be transported to and from the range by someone of at least 21 years of age. The following OPOTC standards are in place and should be made known to any potential Cadet, regardless of age:

- The individual has one year after taking and passing the OPOTC State Certification Exam to obtain a Commission without having to take any further classes.
- If hired after the one year anniversary of having passed the Exam, the individual must have enough time to finish any OPOTC requirements before the second year anniversary date of the Exam occurs. If the deadline is not met, he/she must repeat the entire OPOTC Basic Police Academy.
- If any individual does not receive a Commission by the second year anniversary of having passed the Exam, he/she must successfully complete another OPOTC Basic Police Academy.
- Note: The College offers two full time academies, one starting in Fall and one starting in Spring, and a part-time academy starting in Fall. Once students begin an academy program, the student cannot switch to a different academy program (i.e. start in a full-time academy and switch to a part-time academy).

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize and practice ethical behavior associated with the criminal justice and public safety professions.
2. Apply local, state, and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply understanding of law enforcement culture to develop and refine skill sets essential to specific law enforcement and public safety positions.
6. Sit for the Ohio Basic Peace Officer Training Commission Exam.
7. Apply community policing principles to enhance positive interactions with diverse populations.
8. Apply laws, theories, and standards designed specifically for the juvenile population.
9. Provide supervision including effective communication, personnel evaluation, hiring practices, retention practices, and taking disciplinary and corrective action.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1000</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1120</td>
<td>Criminal Court Procedures</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1130</td>
<td>Criminal Evidence</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
</tr>
</tbody>
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Credit Hours 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1300</td>
<td>Patrol Operations ¹</td>
<td>4</td>
</tr>
<tr>
<td>CJ-1310</td>
<td>Traffic Enforcement and Investigation ¹</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1330</td>
<td>Criminal Law ¹</td>
<td>3</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety ¹</td>
<td>1</td>
</tr>
<tr>
<td>PE-1000</td>
<td>Personal Fitness ¹</td>
<td>2</td>
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<tr>
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<td>Select one of the following:</td>
<td>3</td>
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<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
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Credit Hours 16
### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1320</td>
<td>Ethics in Criminal Justice</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2300</td>
<td>Juvenile Delinquency</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2370</td>
<td>Fire Arms Techniques</td>
<td>3</td>
</tr>
<tr>
<td>CJ-2380</td>
<td>Defensive Driving</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2390</td>
<td>The Investigative Process</td>
<td>4</td>
</tr>
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</table>

Arts and Humanities (p. 33) 3

**Credit Hours:** 16

### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1020</td>
<td>Introduction to Homeland Security</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1111</td>
<td>Constitutional Law for Police</td>
<td>3</td>
</tr>
<tr>
<td>CJ-2360</td>
<td>Community Oriented Policing</td>
<td>3</td>
</tr>
<tr>
<td>CJ-2990</td>
<td>Issues in Supervision</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

- POL-1010 American National Government
- POL-101H Honors American National Government
- PSY-1010 General Psychology
- PSY-101H Honors General Psychology
- SOC-1010 Introductory Sociology
- SOC-101H Honors Introductory Sociology
- UST-1010 Introduction to Urban Studies

**Credit Hours:** 15

**Total Credit Hours:** 63

---

1. Students will receive credit for these courses upon successful completion of the Police Academy Program.

### Program Learning Outcomes

1. Recognize and practice ethical behavior associated with the criminal justice and public safety professions.
2. Apply local, state, and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply psychology and counseling principles and knowledge of community corrections, correctional facilities and programs to manage and provide services to community based and institutionalized offenders and prepare institutionalized offenders for community re-entry when appropriate.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1070</td>
<td>Introduction to Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1000</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1120</td>
<td>Criminal Court Procedures</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1130</td>
<td>Criminal Evidence</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1320</td>
<td>Ethics in Criminal Justice</td>
<td>2</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

**Credit Hours:** 15

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1010</td>
<td>Computers in Criminal Justice</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1500</td>
<td>Community Intervention Resources</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

(p. 32)

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- COMM-1010 Fundamentals of Speech Communication
- COMM-101H Honors Speech Communication

Select one of the following:

- POL-1010 American National Government
- POL-101H Honors American National Government
- PSY-1010 General Psychology
- PSY-101H Honors General Psychology

---

**Criminal Justice with a Concentration in Corrections, Associate of Applied Science**

This program provides a broad overview of corrections, probation and parole in both concepts and procedures. There are opportunities for employment in this growing field in local, state and federal agencies working in corrections at both community and institutional levels.

**Program contact:** Learn more

Learn more (p. 160) about related degrees and training programs.

### Related Degrees and Certificates

- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)
SOC-1010  Introductory Sociology
SOC-101H  Honors Introductory Sociology
UST-1010  Introduction to Urban Studies

Credit Hours: 15

Third Semester
CJ-2300  Juvenile Delinquency  2
CJ-2510  Community Supervision and Aftercare  4
CJ-xxxx  Criminal Justice Elective  2
Arts and Humanities (p. 33)  3
Select one of the following:  3
IT-1090  Computer Applications
IT-109H  Honors Computer Applications

Credit Hours: 14

Fourth Semester
CJ-2530  Correctional Case Management  3
CJ-2840  Corrections: Principles and Practices  3
CJ-2990  Issues in Supervision  4
CJ-xxxx  Criminal Justice Elective  3
CJ-xxxx  Criminal Justice Elective  3

Credit Hours: 16

Total Credit Hours: 60

Criminal Justice with a Concentration in Security Administration, Associate of Applied Science

This program is designed to prepare individuals working in various aspects of private or contract security service to assume administrative roles, as well as to broaden the knowledge of those employed in limited functional activities within the industry to assume more responsible positions in areas of loss prevention and detection, protection of life and property or investigative work.

Program contact: Learn more

Learn more (p. 160) about related degrees and training programs.

Related Degrees and Certificates
- Criminal Justice, Associate of Applied Science (p. 255)
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)
- Criminal Justice (Corrections), Associate of Applied Science (p. 253)
- Criminal Justice (Basic Police Academy), Certificate of Proficiency

Related Training and Credentials
- Private Security Academy (p. 397)

Program Admission Requirements
- High School Diploma/GED.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:
1. Recognize and practice ethical behavior associated with the criminal justice and public safety professions.
2. Apply local, state, and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Conduct security surveys and investigations to protect resources and manage risk.
6. Apply basic business management principles and practices to risk management and asset protection personnel.
7. Effectively interact with local, state and federal government.

Suggested Semester Sequence

First Semester
<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1000  Introduction to Criminal Justice 1</td>
</tr>
<tr>
<td>CJ-1050  Introduction to Security 1</td>
</tr>
<tr>
<td>CJ-1120  Criminal Court Procedures 1</td>
</tr>
<tr>
<td>CJ-1320  Ethics in Criminal Justice</td>
</tr>
<tr>
<td>Select one of the following: 3</td>
</tr>
<tr>
<td>ENG-1010  College Composition I</td>
</tr>
<tr>
<td>ENG-101H  Honors College Composition I</td>
</tr>
<tr>
<td>Select one of the following: 3</td>
</tr>
<tr>
<td>IT-1090  Computer Applications</td>
</tr>
<tr>
<td>IT-109H  Honors Computer Applications</td>
</tr>
</tbody>
</table>

Second Semester
<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1010  Computers in Criminal Justice</td>
</tr>
<tr>
<td>CJ-1400  Assets Protection</td>
</tr>
<tr>
<td>MATH-1xxx  1000-level MATH course or higher (p. 32) 3</td>
</tr>
<tr>
<td>Select one of the following: 3</td>
</tr>
<tr>
<td>ENG-1020  College Composition II</td>
</tr>
<tr>
<td>ENG-102H  Honors College Composition II</td>
</tr>
<tr>
<td>COMM-1010  Fundamentals of Speech Communication</td>
</tr>
<tr>
<td>COMM-101H  Honors Speech Communication</td>
</tr>
<tr>
<td>Select one of the following: 3</td>
</tr>
<tr>
<td>POL-1010  American National Government</td>
</tr>
<tr>
<td>POL-101H  Honors American National Government</td>
</tr>
<tr>
<td>PSY-1010  General Psychology</td>
</tr>
</tbody>
</table>
PSY-101H  Honors General Psychology  
SOC-1010  Introductory Sociology  
SOC-101H  Honors Introductory Sociology  
UST-1010  Introduction to Urban Studies

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-2400</td>
<td>Security Management</td>
<td>4</td>
</tr>
<tr>
<td>CJ-2410</td>
<td>Security Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJ-2420</td>
<td>Legal Aspects of Private Security</td>
<td>3</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Art and Humanities (p. 33)  3

**Credit Hours**  15

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-2440</td>
<td>Protection Services</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2990</td>
<td>Issues in Supervision</td>
<td>4</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Hours**  16

**Related Training and Credentials**

- Basic Police Academy (p. 213)
- Private Security Academy (p. 397)

**Program Admissions Requirements**

High school diploma or GED highly recommended.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize and practice ethical behavior associated with the criminal justice and public safety professions.
2. Apply local, state, and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply law enforcement culture and theory to develop and refine skill sets essential to specific law enforcement positions.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1000</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1120</td>
<td>Criminal Court Procedures</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1130</td>
<td>Criminal Evidence</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1320</td>
<td>Ethics in Criminal Justice</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
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</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1111</td>
<td>Constitutional Law for Police</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1330</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
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</tbody>
</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
</tbody>
</table>

**Related Degrees and Certificates**

- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 251)

Students will receive credit for these courses and PE-1190 Self Defense I and HLT-1230 Standard First Aid and Personal Safety upon successful completion of the Private Security Academy Program.
**Program Admission Requirements**

- Application is required and available here.
- High School Diploma/GED
- pass the Entry Physical Fitness Assessment Exam
- apply for and be accepted as a student at Tri-C and be in good financial and academic standing
- successfully pass the National WebCheck for Law Enforcement (BCI&I/FBI)
- successfully pass the five-panel drug screen
- receive a physical exam in good health from their physician
- have a valid Ohio driver’s license and currently have full driving privileges in the State of Ohio
- NOT have a criminal background
- be at least 20 years old at the time of acceptance to the Academy*

**Other Information**

*AGE GUIDELINES: There is no age requirement, however, potential Cadets should understand the unlikelihood of being hired / sworn (offered a Commission) with a police department until he/she is 21 years of age. The College also requires that all firearms be transported to and from the range by someone of at least 21 years of age. The following OPOTC standards are in place and apply to all graduates of the Police Academy regardless of age:

- The individual has one year after taking and passing the OPOTC State Certification Exam (SCE) to obtain a Commission without having to take any further classes.
- If hired after the one-year anniversary of having passed the SCE, the individual must have enough time to finish any new OPOTC requirements before the second year anniversary date of the SCE occurs. If the deadline is not met, he/she must repeat the entire OPOTC Basic Police Academy.
- If any individual does not receive a Commission by the second year anniversary of having passed the SCE, he/she must successfully complete another complete OPOTC Basic Police Academy.
Note: The College offers two full-time academies, one starting in Fall and one starting in Spring, and a part-time academy starting in Fall. Once students begin an academy program, the student cannot switch to a different academy program (i.e. start in a full-time academy and switch to a part-time academy).

1. Recognize and practice ethical behavior associated with the criminal justice and public safety professions.
2. Apply local, state, and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply understanding of law enforcement culture to develop and refine skill sets essential to specific law enforcement and public safety positions.
6. Sit for the Ohio Basic Peace Officer Training Commission Exam.

### Culinarian/Cook, Short-Term Certificate

Culinarian/Cook Short Term Certificate provides career opportunities in the culinary arts industry. Career opportunities include, but not limited to, line cook, grill, or sauté cook, prep cook, and pantry cook.

**Program contact:** Learn more

Financial Assistance funds cannot be applied towards this program.

Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 100), here (p. 137), and here (p. 136) about how certificate credits apply to the related degrees.

### Gainful Employment Disclosure

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply proper sanitation principles to meet industry standards and government regulations, and successfully complete ServSafe Certification Exam.
2. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.
3. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience.
4. Use culinary math and measurements to convert and modify basic recipes.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
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</tr>
<tr>
<td>HOSP-1020</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>3</td>
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<tr>
<td>HOSP-1552</td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
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</tr>
</tbody>
</table>

1 Students will receive credit for these courses upon successful completion of the Police Academy Program.
Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credit Hours 16

Cybersecurity, Post-Degree Professional Certificate

Students will prepare for careers dealing with networking and system administration fundamentals, with the primary focus being defensive strategies to securing networks and systems. Skills acquired will assist students in preparing to take nationally and internationally recognized industry certification exams.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 102) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Information Technology - Cybersecurity, Associate of Applied Business (p. 315)

Program Admission Requirements

- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- Applicant must have already completed an associate degree or higher from an accredited college or university.
- Information technology networking background and/or experience in the field.
- Basic programming skills required.
- 18 years of age or older.
- Background check required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply principles of security to install, configure, maintain, and secure business operations.
2. Take continuous, pro-active measures to intimately know and understand the complete physical and logical structure of your network so that during normal operations and monitoring, security issues can be quickly identified, isolated and resolved, including measures to prevent future occurrences.
3. Apply fundamental concepts of operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain, and support hardware and software to ensure efficient and effective business operations.
4. Explain what a risk assessment is, what types of assessments there are and how it can impact an organization. Also explain drivers to information security policy/standard development, security governance, compliance to external regulation and internal policies and standards.
5. Identify common industry security frameworks and explain why these exist. (NIST, Cyber Security Framework, CYBER, COBIT, ISO27001, etc.)
6. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to reduce risk in business operations.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Understand and apply legal, privacy, and ethical concepts; recognize and assess legal, privacy, and ethical issues; and demonstrate ethical, privacy, and legal behavior.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITNT-2320 Network Administration I</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2370 Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
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<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1302 Cisco I: Basic Networking Technologies</td>
<td>3</td>
</tr>
<tr>
<td>EET-1312 Cisco II Basic Routing and Switching</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2380 Linux Administration</td>
<td>3</td>
</tr>
<tr>
<td>IT-2750 Scripting Fundamentals for Cybersecurity</td>
<td>3</td>
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<tr>
<td>Credit Hours</td>
<td>12</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2710 Advanced Topics in Network Security</td>
<td>3</td>
</tr>
<tr>
<td>IT-2720 Ethical Hacking and Systems Defense</td>
<td>3</td>
</tr>
<tr>
<td>IT-2730 Intrusion Detection/Prevention Systems Fundamentals</td>
<td>3</td>
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<tr>
<td>Credit Hours</td>
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<tr>
<td>Total Credit Hours</td>
<td>27</td>
</tr>
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</table>
Data Analytics, Post-Degree Professional Certificate

This post-degree professional certificate program prepares students to use tools and techniques to understand and transform data, to apply statistics to find patterns and correlations, and to use modern reporting and analysis tools to find and communicate insight from big data.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 155) and here (p. 154) about how certificate credits apply to the related degrees.

Students must have earned an Associate’s degree or higher to enroll in this program.

Program Learning Outcomes

1. Understand, build, and manipulate 2-dimensional and 3-dimensional data structures and indexes.
2. Understand, build, and manipulate complex SQL queries.
3. Understand, build, and manipulate data transfer tools & data interfaces.
4. Understand and maintain data validation and governance.
5. Utilize effective communication skills to work within teams to successfully deliver projects.
6. Using modern reporting and presentation tools (i.e. SAS, TABLEAU, COGNOS) query and extract data to produce meaningful business insights.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1025 Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1080 Introduction to Data Analytics</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>MATH-1410 Elementary Probability and Statistics I</td>
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<tr>
<td>MATH-1490 Business Probability and Statistics I</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1050 Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>IT-2351 Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1420 Elementary Probability and Statistics II</td>
<td></td>
</tr>
<tr>
<td>MATH-1500 Business Probability and Statistics II</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer Completion</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2080 Data Visualization</td>
<td>4</td>
</tr>
<tr>
<td>IT-2090 Data Analytics Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credit Hours 28

Deaf Interpretive Services, Associate of Applied Science

This program provides students with knowledge in the area of deafness and Deaf Culture, as well as skills in American Sign Language (ASL), other sign language systems, methods of interpreting/transliterating and ethical aspects of the interpreting field. The curriculum is divided into two areas of study - Advanced American Sign Language and Interpreter Training. Sign Language courses will provide the knowledge of ASL as a foreign language and English-based sign systems, while DIS courses provide the interpreting/transliterating skills necessary for students to seek K-12 state licensure upon graduation and National Interpreter Certification (NIC) after gaining experience working as an interpreter. Graduates of the program may work as an interpreter in a myriad of community-based settings, specializing in the areas of medicine, business, vocational, educational and/or a variety of other settings. Graduates would be employed either as a freelance provider or an agency employee. Other career opportunities include video relay interpreting (VRS) and K-12 educational interpreting.

Program contact: Learn more

Learn more (p. 138) about how certificate credits apply to the related degree.

Program Admission Requirements

- DIS program application and additional admission details located on the DIS program website http://www.tri-c.edu/programs/deaf-interpretive-services/index.html
- High School Diploma/GED
- ENG-1010 College Composition I or ENG-101H Honors College Composition I (“B” grade or higher)
- Screenings/consideration for DIS admission are conducted annually in late fall, after mid-term progress reporting. Applications will be
considered once students have completed the DIS application packet, to include the following:

- Complete a DIS Academic Plan with a counselor and submit to DIS.
  
- Previously completed and/or currently enrolled in program pre-requisite courses. ASL-1001 Fingerspelling, ASL-1100 Deaf Culture, DIS-1300 Interpreting Fundamentals (“B” grade or higher in each)

- Eligibility for ASL-2412 Advanced American Sign Language I via completion of ASL-1010 Beginning American Sign Language I, ASL-1020 Beginning American Sign Language II, ASL-2010 Intermediate American Sign Language I and ASL-2020 Intermediate American Sign Language II (comprehensive GPA of 3.0 or higher), or appropriate assessment exam scoring of either ASLPI level 3 or SLPI Intermediate level. Check program website for further details, including criteria for the DIS ASL Placement/Skill Assessment option http://www.tri-c.edu/programs/deaf-interpretive-services/index.html. Note: The ASLPI and SLPI are external assessment exams taken outside of the DIS program/college. Check DIS program website for details.

Other Information

- DIS is a limited admission program. Admission numbers may vary each year, based on anticipated practicum site availability and annual budget considerations. Admission is on a first come, first served basis, providing students have met the admission criteria and followed proper admission protocol.

- To satisfy the program requirements and earn the Associate of Applied Science degree, all students pursuing an AAS degree for Deaf Interpretive Services, are required to have earned a grade of a “C” or higher in DIS-2940 Field Experience Lab II and its companion lab course, DIS-2740 Field Experience Lab I.

- Non-DIS degree students may enroll for individual DIS courses, providing they meet the course specific prerequisites and/or have received permission from the DIS Program Manager.

- Placement Evaluations may be required of certain students to determine both receptive and expressive ASL skills. Evaluations assess knowledge of proper ASL vocabulary, proper parameters and ASL grammar and structures. DIS degree seeking students requiring Placement Evaluations include, but is not limited to, the following:
  
- Any student who has not taken ASL classes for one academic year or more
- All transfer students with previous ASL college credit
- Grade repeat may occur only once for any course that is required for the DIS degree. “W” grades are counted as an attempt. It is recommended that students contact the DIS Program Manager before repeating a course.

- All DIS students entering into Field Experiences should expect that sites may not be immediately local or convenient. Traveling is a necessary part of Field Experiences and students must begin preparing for reliable transportation to sites and substantial time commitments to complete Field Experiences.

- Field Experience placements and their availability occur at varying times throughout the semesters. Delays and changes are expected. Student placements may be changed at the discretion of DIS at any time. Students may need to continue garnering Field Experience hours prior to and/or past semester terms and during holiday breaks to satisfy required hours.

- All DIS students entering Field Experience courses must undergo fingerprinting and background check to satisfy the K-12 practicum requirement. There is a fee for this screening. Once admitted to the program, students will be provided further instruction for when this screening will occur. Details also available on the DIS program website.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Interpret in American Sign Language (ASL).
2. Transliterate in English-based sign systems.
3. Speak as native English user while interpreting for a person who is deaf.
4. Conduct yourself professionally and ethically according to the Registry of Interpreters for the Deaf (RID) Code of Professional Conduct.
5. Be eligible for K-12 state licensure from the Ohio Department of Education (ODE).
6. Possess the foundational knowledge and skill-based tools for the NAD-RID National Interpreting Certification (NIC) and understand the process for taking the exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001 Fingerspelling</td>
<td>2</td>
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<tr>
<td>ASL-1100 Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>DIS-1300 Interpreting Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000 Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1030 Classifiers/Depicting Verbs</td>
<td>2</td>
</tr>
<tr>
<td>ASL-2412 Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>DIS-1310 Interpreting I</td>
<td>2</td>
</tr>
<tr>
<td>THEA-1500 Acting I</td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
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<table>
<thead>
<tr>
<th>Summer Session</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ASL-2420 Advanced American Sign Language II</td>
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<tr>
<td>DIS-2300 Transliteration</td>
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</tr>
<tr>
<td>DIS-2310 Interpreting II</td>
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</tr>
<tr>
<td>DIS-2320 Educational Interpreting</td>
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<td>Total Credit Hours</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIS-1402 American Sign Language Linguistics</td>
<td>3</td>
</tr>
</tbody>
</table>
Dental Hygiene, Associate of Applied Science

Dental Hygienists are licensed primary health care professionals, health care educators and clinicians who provide preventive, educational and therapeutic services supporting total health for the control of oral diseases and the promotion of oral health. Employment opportunities exist in private practices, health care agencies, hospitals, sales, government research programs and in dental hygiene education programs. Upon successful completion of this curriculum, the graduate may take national and regional board examinations and apply for licensure.

Program contact: Learn more

Learn more (p. 118) about related training programs.

Program Admission Requirements

Application may be submitted after meeting requirements listed below. Health Careers Enrollment Center 216-987-4247 for comprehensive admissions information and application packet.

- High School Diploma/GED
- Completion of the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

- GPA required: 3.0 admission requirements, 2.75 overall
- 20 hour observation/work experience, 16 hours in a dental setting that employs a Registered Dental Hygienist. 4 hours must be in the Dental Hygiene Clinic at the Metropolitan Campus. Please call 216-987-4413 to schedule appointment. Please refer to the form in the application packet.

Other Information

- 24 students accepted per year.
- All science courses must have been completed within five (5) years of admission to the program.
- ENG-1010 College Composition I, ENG-101H Honors College Composition I, PSY-1010 General Psychology, PSY-101H Honors General Psychology and one (1) science course may each be repeated once to improve a grade. A "W" grade counts as an attempt.
- Overall GPA must not fall below 2.75 while awaiting matriculation into the Dental Hygiene program.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:
1. Act responsibly toward self, peers, faculty and clients.
2. Demonstrate critical thinking and decision-making skills in all aspects of client care.
3. Communicate verbally and in writing to clients, colleagues and other professionals.
4. Integrate the Code of Ethics for Dental Hygienists with evidence of skills in ethical reasoning.
5. Incorporate professional integrity and continued growth into all aspects of dental hygiene care.
6. Determine the validity of oral health services in various segments of the community using evidence-based methods.
7. Demonstrate the ability to promote oral health in the global community.
8. Recognize the need and follow protocol indicated for medical emergencies that occur in an oral health care environment.
9. Accurately collect, analyze and document current and historical data on the systemic/oral health status of a variety of clients that impacts the delivery of dental hygiene care.
10. Utilize all the information gleaned through the assessment process and develop a comprehensive dental hygiene diagnosis incorporating current research.
11. Devise a client-centered dental hygiene care plan that is evidence-based.
12. Apply appropriate treatment modalities and communicate oral health education concepts that will culminate in achieving the dental hygiene care plan.
13. In partnership with the client, determine if the implementation phase was effective in achieving the goals outlined in the comprehensive dental hygiene care plan and modify when indicated.
14. In partnership with the client, ensure that documentation is complete and accurate of all collected data, treatment planned and provided, recommendations and other information relevant to client care and treatment.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry 1</td>
<td>3</td>
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<tr>
<td>BIO-2331 Anatomy and Physiology I 1</td>
<td>4</td>
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<tr>
<td>BIO-2341 Anatomy and Physiology II</td>
<td>4</td>
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<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
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</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>PSY-1010 General Psychology</td>
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<tr>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td>Credit Hours 17</td>
</tr>
<tr>
<td>DENT-1300 Preventive Oral Health Services I</td>
<td>4</td>
</tr>
<tr>
<td>DENT-1311 Dental Anatomy, Histology &amp; Embryology</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1320 Dental Hygiene Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>DENT-1331 Dental Imaging</td>
<td>3</td>
</tr>
<tr>
<td>DENT-1341 Foundational Principles of Dental Hygiene Practice</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH-1240 Contemporary Mathematics 2</td>
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<table>
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<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-2500 Microbiology</td>
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<tr>
<td>DENT-1400 Preventive Oral Health Services II</td>
<td>5</td>
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<tr>
<td>DENT-1410 Current Concepts in Dental Materials</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1420 Periodontics I</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1431 Head and Neck Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1440 General and Oral Pathology</td>
<td>2</td>
</tr>
<tr>
<td>Second Semester</td>
<td>Credit Hours 17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DENT-2200 Local Anesthesia and Pain Management</td>
<td>2</td>
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<tr>
<td>DENT-2300 Preventive Oral Health Services III</td>
<td>5</td>
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<tr>
<td>DENT-2321 Periodontics II</td>
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</tr>
<tr>
<td>DENT-2332 Pharmacology and Therapeutics</td>
<td>2</td>
</tr>
<tr>
<td>DENT-2340 Community Oral Health I</td>
<td>1</td>
</tr>
<tr>
<td>DIET-1220 Nutrition for Dental Hygiene 3</td>
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</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>COMM-1000 Fundamentals of Interpersonal Communication</td>
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<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H Honors Speech Communication</td>
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</tr>
<tr>
<td>Third Semester</td>
<td>Credit Hours 16</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENT-2400 Preventive Oral Health Services IV</td>
<td>5</td>
</tr>
<tr>
<td>DENT-2440 Community Oral Health II</td>
<td>1</td>
</tr>
<tr>
<td>DENT-2990 Dental Hygiene Practice 4</td>
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<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>SOC-1010 Introductory Sociology</td>
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<tr>
<td>SOC-101H Honors Introductory Sociology</td>
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</tr>
<tr>
<td>Fourth Semester</td>
<td>Credit Hours 10</td>
</tr>
</tbody>
</table>

| Total Credit Hours | 74 |

1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry may be taken in place of BIO-1100 Introduction to Biological Chemistry.
2. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.
3. DIET-1200 Basic Nutrition will be accepted in place of DIET-1220 Nutrition for Dental Hygiene.
4. Students must earn a grade of "C" or better in all required courses to earn the AAS in Dental Hygiene.
Diagnostic Medical Sonography with a Concentration in General Sonography, Associate of Applied Science

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in abdominal sonography and obstetrical/gynecological sonography. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of abdominal and Ob/Gyn sonography.

Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.

Program contact: Learn more

Learn more (p. 119) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Diagnostic Medical Sonography, Associate of Applied Science (p. 265)

Program Admissions Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information. Students may also access the DMS website for this information: http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx
- High School Diploma/GED. Student must be a minimum of 18 years of age to begin the 5 semester program sequence.
- GPA calculated using only the Tri-C specific admission course credit hours listed.
- Verification of having completed a 8-16 hour observation where the candidate “shadows” an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on inpatients. See the DMS application packet for details and the required form.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html.
- To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Complete the following Program Admissions requirements with a “C” grade or higher in each:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>DMS-1071</td>
<td>Concepts in Physics in Diagnostic Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1303</td>
<td>Introduction to Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1320</td>
<td>Introduction to Sonographic Scanning</td>
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</tr>
<tr>
<td>DMS-1351</td>
<td>Patient Care Skills</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3-4</td>
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<td>MATH-1530</td>
<td>College Algebra (or higher)</td>
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</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tbody>
</table>

1 Minimum GPA 3.0 required for BIO-2331 & BIO-2341 (total 8 credits).
2 Minimum GPA 3.0 for DMS-1303, DMS-1320, and DMS-1071 (total 5 credits).

Other Information

- To improve from a previous attempt, only two of the admission courses may be repeated once. A “W” is counted as an attempt.
- Criminal background check required. Also see General Application Procedures (p. 115) for Health Careers.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.
• MA-1020 Medical Terminology I will be accepted in lieu of MA-1010 Introduction to Medical Terminology; PHIL-2050 Bioethics will be accepted in lieu of HTEC-1110 Ethics for Health Care Professionals.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>DMS-1311 Initial Sonographic Scanning</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1401 Abdominal Sonography I</td>
<td>4</td>
</tr>
<tr>
<td>DMS-1500 Obstetrical Sonography</td>
<td>4</td>
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<tr>
<td>MA-1010 Introduction to Medical Terminology</td>
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Select one of the following:

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<tbody>
<tr>
<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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Summer Session

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<tr>
<td>DMS-235A</td>
<td>Sonographic Principles, Performance, and Safety</td>
<td>2</td>
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<tr>
<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
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<td>DMS-2940</td>
<td>Field Experience III</td>
<td>3</td>
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<td>DMS-2985</td>
<td>Physics Review</td>
<td>1</td>
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<td>DMS-2991</td>
<td>Sonography Capstone</td>
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<tr>
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<td>HTEC-1110</td>
<td>Ethics for Health Care Professionals</td>
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<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>4-5</th>
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</thead>
</table>

**Total Credit Hours 64-65**

1. MATH-1530 College Algebra or higher will be accepted in lieu of MATH-1410 Elementary Probability and Statistics I.
2. MA-1020 Medical Terminology I will be accepted in lieu of MA-1010 Introduction to Medical Terminology.
3. PHIL-2050 Bioethics will be accepted in lieu of HTEC-1110 Ethics for Health Care Professionals.

### Electives

#### Technical Electives

Select from the following courses to fulfill DMS elective option:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-1381</td>
<td>Cardiac Diagnostic Procedures</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2330</td>
<td>Sonographic Pathology</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2450</td>
<td>Breast Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS-2650</td>
<td>Pediatric Cardiac Sonography</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2750</td>
<td>Principles of Vascular Imaging for Abdomen and Cardiac Sonographers</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2960</td>
<td>Supplemental Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>DMS-2983</td>
<td>Supplemental Specialty Registry Review</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
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</table>
Diagnostic Medical Sonography, Associate of Applied Science

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in adult echocardiography and vascular technology. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of their specialty option. Students will also have the option to individualize and enhance their sonography career by taking coursework in other sonography specialty coursework such as breast sonography and pediatric cardiac sonography. Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.

Program contact: Learn more

Learn more (p. 118) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Diagnostic Medical Sonography (General Sonography), Associate of Applied Science (p. 263)

Program Admissions Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information. Students may also access the DMS website for this information: http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx.
- High School Diploma/GED. Students must be a minimum of 18 years of age to begin the 5 semester program sequence.
- Verification of having completed an 8-16 hour observation where the candidate “shadows” an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on in-patients. See the DMS application packet for details and the required form.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html.
  To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Complete the following Program Admissions requirements with a “C” grade or higher in each:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>DMS-1071</td>
<td>Concepts of Physics in Diagnostic Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1303</td>
<td>Introduction to Sonography</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1320</td>
<td>Introduction to Sonographic Scanning</td>
<td>1</td>
</tr>
<tr>
<td>DMS-1351</td>
<td>Patient Care Skills</td>
<td>1</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td></td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td></td>
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</tbody>
</table>

1 Minimum 3.0 for BIO-2331nd BIO-2341 (total 8 credits). GPA calculated using only the Tri-C specific admission course credit hours listed above.

2 Minimum 3.0 GPA for DMS-1303ntroduction to Sonography, DMS-1320 and DMS-1071 (total 5 credits). GPA calculated using only the Tri-C specific admission course credit hours listed above.

Other Information

- 16-32 students accepted per year.
- Criminal background check required. Also see General Application Procedures (p. 115) for Health Careers.
- To improve from a previous attempt, only two of the admission courses may be repeated once. A “W” is counted as an attempt.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

Note: Students must select to pursue either option a or option b to complete this degree program. Letters in parenthesis refer to options (a) or (b).

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-2331 Anatomy and Physiology I</td>
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<tr>
<td>BIO-2341 Anatomy and Physiology II</td>
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<td>DMS-1071 Concepts of Physics in Diagnostic Sonography</td>
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<tr>
<td>DMS-1303 Introduction to Sonography</td>
<td>2</td>
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<tr>
<td>DMS-1320 Introduction to Sonographic Scanning</td>
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<tr>
<td>DMS-1351 Patient Care Skills</td>
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<tr>
<td>MATH-1410 Elementary Probability and Statistics I</td>
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<td>ENG-1010 College Composition I</td>
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<td>ENG-101H Honors College Composition I</td>
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<td><strong>Total Credit Hours</strong></td>
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First Semester

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<tr>
<td>DMS-1311</td>
<td>Initial Sonographic Scanning</td>
<td>2</td>
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<tr>
<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
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</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>DMS-1602</td>
<td>Echocardiography I (Option A)</td>
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<tr>
<td>DMS-1701</td>
<td>Vascular Sonography I (Option B)</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<td>PSY-101H</td>
<td>Honors General Psychology</td>
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Second Semester

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<td>DMS-2301</td>
<td>Intermediate Sonographic Scanning</td>
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<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
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<td>DMS-2602</td>
<td>Echocardiography II (Option A)</td>
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<td>DMS-2702</td>
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Summer Session

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Third Semester

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<td>DMS-1381</td>
<td>Cardiac Diagnostic Procedures</td>
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<td>DMS-235A</td>
<td>Sonographic Principles, Performance, and Safety</td>
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<td>DMS-2940</td>
<td>Field Experience III</td>
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<td>DMS-2985</td>
<td>Physics Review</td>
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Fourth Semester

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<td>DMS-2981</td>
<td>Specialty Registry Review</td>
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<td>DMS Elective</td>
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<td>HTEC-1110</td>
<td>Ethics for Health Care Professionals</td>
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<td>Select one of the following:</td>
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<tr>
<td>DMS-2650</td>
<td>Pediatric Cardiac Sonography (Option A)</td>
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<tr>
<td>DMS-2760</td>
<td>Transcranial Doppler Sonography (Option B)</td>
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<tbody>
<tr>
<td>HTEC-1110</td>
<td>Ethics for Health Care Professionals</td>
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Options

(A) Echocardiography Option

Take the following courses to complete Option A:

<table>
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<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DMS-1602</td>
<td>Echocardiography I</td>
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<tr>
<td>DMS-2602</td>
<td>Echocardiography II</td>
<td>4</td>
</tr>
<tr>
<td>DMS-2650</td>
<td>Pediatric Cardiac Sonography</td>
<td>3</td>
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<td><strong>Total Credit Hours</strong></td>
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(B) Vascular Option

Take the following courses to complete Option B:

<table>
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<tr>
<th>Code</th>
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<tr>
<td>DMS-1602</td>
<td>Echocardiography I</td>
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</tr>
<tr>
<td>DMS-2602</td>
<td>Echocardiography II</td>
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<td><strong>Total Credit Hours</strong></td>
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</table>
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DMS-1701  Vascular Sonography I  4
DMS-2702  Vascular Sonography II  4
DMS-2760  Transcranial Doppler Sonography  1

Additional program courses  51-52
Total Credit Hours  60-61

Electives
Technical Electives
Select from the following courses to fulfill DMS elective option:

- DMS-2330  Sonographic Pathology  3
- DMS-2450  Breast Sonography  2
- DMS-2650  Pediatric Cardiac Sonography  3
- DMS-2750  Principles of Vascular Imaging for Abdomen and Cardiac Sonographers  3
- DMS-2760  Transcranial Doppler Sonography  1
- DMS-2960  Supplemental Field Experience  2
- DMS-2983  Supplemental Specialty Registry Review  1

Dietary Management, Certificate of Proficiency

This program is designed for health care foodservice employees interested in developing dietary management skills. The components of the program are in five key areas: Nutrition, Foodservice, Personnel and Communications, Sanitation and Safety, and Business Operations. This program is approved by the Association of Nutrition & Foodservice Professionals (ANFP).

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 120) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- Seven year limit on core courses prior to application.
- 20 students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- Criminal background check required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Perform professionally and ethically following the Code of Ethics for Certified Dietary Managers (CDM).
2. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings and make appropriate referrals and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.
3. Apply knowledge of mathematics to develop and analyze recipes, formulas and diets, apply financial and procurement principles to collecting and processing financial data.
4. Use appropriate interpersonal skills, medical terminology and technology in written and verbal communication with interdisciplinary teams, patients/clients and family members.
5. Educational and psychological principles to develop and implement educational and training programs for patients, clients, and target audience within scope of practice.
6. Apply supervisory concepts to food production including procurement, distribution/service, menu development; applying sensory evaluation and safety/sanitation principle and concepts.
7. Apply supervisory concepts to the organizational unit, including financial, human, physical, and material resources and services.
8. Apply evidence-based research and management principles to human resource functions, facility management, organizational change, planning and goal setting; development and measurement of outcomes and quality improvement.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>DIET-1320</td>
<td>Nutrition Applications</td>
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</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3

- ENG-1010  College Composition I
- ENG-101H  Honors College Composition I

Credit Hours 15

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-1331</td>
<td>Food Production Fundamentals</td>
<td>4</td>
</tr>
</tbody>
</table>
Dietetic Technology, Associate of Applied Science

A graduate of the Dietetic Technology Program or Nutrition and Dietetics Technicians, Registered (NDTR’s) is a food and nutrition practitioner, often working in conjunction with a Registered Dietitian. Nutrition and Dietetics Technicians, Registered (NDTR’s) work in a variety of employment settings including health care (under the supervision of the Registered Dietitians in providing medical nutrition therapy), in hospitals, HMO’s, clinics, or other health care facilities. Nutrition and Dietetics Technicians, Registered (NDTR’s) may also work in community and public health settings such as schools or day care centers, correctional facilities, weight management clinics, and WIC programs. A growing number work in the food and nutrition industry, as contract employees for food management companies or food vending and distribution, developing menus and overseeing foodservice sanitation and food safety or providing nutrition labeling information and analysis. This program is accredited by:

The Accreditation Council for Education in Nutrition and Dietetics (ACEND)
120 South Riverside Plaza, Suite 2190
Chicago, IL 60606-6995
800-877-1600, ext. 5400

DTP Goals and graduate outcomes, as well as information regarding cost to student, such as estimated expenses for travel, books, liability insurance, medical exams, uniforms and other DTP specific costs, in addition to tuition can be found by clicking the learn more link below.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 120) about how certificate credits apply to the related degree.

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

• High School Diploma/GED
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.
• Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
• Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100 Introduction to Biological Chemistry.
• GPA required: 2.0 admission requirements, 2.0 overall

Other Information

• 9 students accepted per year.
• Dietetic Technology students are required to complete 30 hours of volunteer time in order to graduate from the program. Please contact Program Director for instructions. Volunteer hours are defined as time spent in a nutrition related activity outside of classroom or supervised practice/practicum hours. The student is required to submit a Volunteer Hour Verification form for each volunteer activity and a summary of Volunteer Hours upon completion of the 30 hours. The 30 hours must be completed at a minimum of 6 different sites.
• Student must pass criminal background check BCI prior to admission into DTP as specified.
• A Part time Option is offered. For more information, contact Program Director.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Practice professionalism. Adhere to current federal regulations and state statutes and rules, as applicable, and in accordance with the accreditation standards and the Scope of Dietetics Practice, Standards of Professional practice and the code of Ethics for the practice of dietetics.
2. Use the Nutrition Care Process for nutrition screening for referral to the registered dietitian nutritionist, collection of assessment data, nutrition interventions and monitoring strategies appropriate for the technician level of practice. (Principles of Medical Nutrition Therapy and NCP including principles and methods of nutrition screening for referral to the registered dietitian nutritionist, collection of assessment data, nutrition interventions and monitoring strategies appropriate for the technician level of practice.)
3. Acquire, evaluate and use information from varied sources in order to meet information needs for a specific research purpose.
4. Demonstrate sensitivity to the unique beliefs, view, values and practices of cultures within and beyond the U.S.
5. Analyze problems through the application of mathematical and numerical concepts and skills, including the interpretation of data, tables, charts or graphs.
6. Connect the results of one’s own actions and inactions with the likely effects on the larger local and/or global communities.

7. Demonstrate effective written, verbal, or nonverbal communication for an intended audience that is clear, concise, and organized following the standard conventions of that language. (oral and written)

8. Apply supervisory concepts to food production including procurement, distribution/service, menu development, and quality assurance procedures.

9. Apply evidence based research and management principles to human resource functions, facility management, organizational change, planning and goal setting, development and measurement of outcomes and quality improvement.

### Suggested Semester Sequence

#### Summer Start

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
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</tr>
<tr>
<td></td>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td></td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</table>

**Credit Hours:** 7

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>DIET-1310</td>
<td>Introduction to Dietetics</td>
<td>2</td>
</tr>
<tr>
<td>DIET-1320</td>
<td>Nutrition Applications</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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</table>

**Credit Hours:** 15

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>DIET-1331</td>
<td>Food Production Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>DIET-1580</td>
<td>Cost Control Procedures</td>
<td>1</td>
</tr>
<tr>
<td>DIET-1590</td>
<td>Purchasing Procedures</td>
<td>1</td>
</tr>
<tr>
<td>DIET-1600</td>
<td>Introduction to Supervision</td>
<td>3</td>
</tr>
<tr>
<td>DIET-1850</td>
<td>Food and Nutrition Systems Practicum</td>
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</table>

**Credit Hours:** 13

#### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-2301</td>
<td>Medical Nutrition Therapy I</td>
<td>3</td>
</tr>
<tr>
<td>DIET-2410</td>
<td>Life Cycle Nutrition - Pregnancy and Lactation</td>
<td>1</td>
</tr>
<tr>
<td>DIET-2420</td>
<td>Life Cycle Nutrition - Nutrition for Children</td>
<td>1</td>
</tr>
<tr>
<td>DIET-2430</td>
<td>Life Cycle Nutrition - Nutrition through Adulthood</td>
<td>1</td>
</tr>
<tr>
<td>DIET-2863</td>
<td>Community Nutrition Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>PSY-1010</td>
<td>General Psychology</td>
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<tr>
<td></td>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
</tr>
<tr>
<td></td>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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</tbody>
</table>

**Credit Hours:** 17

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DIET-2311</td>
<td>Medical Nutrition Therapy II</td>
<td>3</td>
</tr>
<tr>
<td>DIET-2320</td>
<td>Medical Nutrition Therapy III</td>
<td>2</td>
</tr>
<tr>
<td>DIET-2501</td>
<td>Nutrition Application in Long Term Care</td>
<td>2</td>
</tr>
<tr>
<td>DIET-2850</td>
<td>Medical Nutrition Care Practicum</td>
<td>2</td>
</tr>
<tr>
<td>DIET-2862</td>
<td>Geriatric Nutrition Practicum</td>
<td>2</td>
</tr>
<tr>
<td>DIET-2990</td>
<td>Dietetic Technology Professional</td>
<td>2</td>
</tr>
</tbody>
</table>

**Credit Hours:** 13

**Total Credit Hours:** 65

1. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics.
2. MATH-1270 Intermediate Algebra taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141 Applied Algebra and Mathematical Reasoning, MATH-1270 Intermediate Algebra, and MATH-1280 Advanced Intermediate Algebra will be accepted for program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.
3. 1st eight week course.
4. 2nd eight week course.

### Digital and Social Selling Online Certificate

Corporate College, in partnership with ProTrain, is now offering a variety of quality online training programs in digital marketing, accounting, finance, and social selling. Programs are industry-standard, affordable solutions for individuals seeking to prepare for an in-demand career that will help move them forward to achieve the goal of education to success in the workforce.

**Program description**

The Digital and Social Selling certificate program focuses on the tools and skills you need to create a cohesive and effective online digital selling strategy.

Traditional marketing methods alone aren't enough to efficiently drive lead generation and sales. As the digital economy experiences major growth, the demand for skilled digital professionals is significant and growing. This course will help you kick start an exciting and dynamic career or advance an existing one.

Through dynamic video presentations and practical learning activities including tutorials and exercises, you will enjoy a hands-on learning experience that will build a strong foundation in the key specialisms within digital and social selling. You will cover the main concepts,
techniques and skills required to develop, plan and implement an effective digital selling strategy.

Other important information
• Cost includes exam voucher for the Digital Marketing Institute's (DMI) Professional Certification in Digital and Social Selling.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
• Marketing, Associate in Applied Business (p. 337)
• Social Media Marketing, Short-Term Certificate (p. 409)

To Register for and Learn more about Digital and Social Selling Online Certificate.

Digital Design & Product Innovation, Short-Term Certificate

This short-term certificate is one of the two programs, which, upon completion, lead to the award of a certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure

Program Admissions Requirements
• Contact program coordinator for application information.
• High School Diploma/GED

• ENG-0990 Language Fundamentals II or higher, or appropriate score on English Placement Test.
• MATH-0955 Beginning Algebra or higher or appropriate score on Math Placement Test.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1100 Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230 Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1250 Introduction to Additive Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-1261 Product Ideation &amp; Design I</td>
<td>3</td>
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<tr>
<td><strong>Total Credit Hours</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2060 Product Ideation &amp; Design II</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601 3D Solid Modeling</td>
<td>3</td>
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<td><strong>Total Credit Hours</strong></td>
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</table>

**Total Credit Hours:** 17
Digital Manufacturing and Product Launch, Short-Term Certificate

This short-term certificate is one of the two programs, which, upon completion, lead to the award of certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing. The skills and concepts taught also prepare students to take the nationally recognized Society of Manufacturing Engineering (SME)-Additive Manufacturing Consortium’s Certification in Additive Manufacturing. This is a stackable certificate program that requires completion of the short-term certificate in Digital Design & Product Innovation prior to starting this program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure

Program Admissions Requirements

- Contact program coordinator for application information.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or higher, or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or higher, or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines’ principles and operation, tools and materials to select operations’ parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.
6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-2151</td>
<td>3D Digital Design &amp; Printing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2160</td>
<td>3D Scanning, Reverse Engineering, and Quality Inspection</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>9</strong></td>
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</table>

Second Semester

<table>
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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MET-2191</td>
<td>Additive Manufacturing Project Capstone</td>
<td>2</td>
</tr>
<tr>
<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>MET-2941</td>
<td>Additive Manufacturing Internship</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
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<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
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</table>

Digital Marketing Manager: Professional Online Certificate

Program description

Corporate College, in partnership with ProTrain, is now offering a variety of quality online training programs in digital marketing, accounting,
finance, and social selling. Programs are industry-standard, affordable solutions for individuals seeking to prepare for an in-demand career that will help move them forward to achieve the goal of education to success in the workforce.

The Digital Marketing Manager certificate program focuses on the tools and skills you need to create a cohesive and effective online marketing strategy.

Traditional marketing methods alone aren’t enough to efficiently drive lead generation and sales. As the digital economy experiences major growth, the demand for skilled digital professionals is significant and growing. This course will help you kick start an exciting and dynamic career or advance an existing one.

Through dynamic video presentations and practical learning activities including tutorials and exercises, you will enjoy a hands-on learning experience that will build a strong foundation in the key specialisms within digital marketing. You will cover the main concepts, techniques and skills required to develop, plan and implement an effective digital marketing strategy.

Other important information

- Cost includes exam voucher for the Digital Marketing Institute’s (DMI) Professional Certification in Digital Marketing.

Program cost

Visit the Corporate College website here for pricing.

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible. Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive

Certificate of Completion

Related Programs/Training

- Marketing, Associate in Applied Business (p. 337)
- Social Media Marketing, Short-Term Certificate (p. 409)

To Register for and Learn more about Digital Marketing Manager: Professional Certificate Online.

Drywall Finishing, Certificate of Proficiency

Student must be currently working in a registered apprenticeship in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship Training, and a partnering Joint Apprenticeship Training Committee. The three year apprenticeship emphasizes the technical skills of a craft worker. Drywall Finishing is the art and craft of applying plasterboard or other wallboard to ceilings or interior walls of buildings, working with decorative quality and include lathers who fasten wooden, metal, or rock board lath to walls, ceilings or partitions of buildings to provide support base for plaster, fire-proofing, or acoustical material. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Participants must be currently working in a registered apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship & Training, and a partnering Joint Apprenticeship Training Committee

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer’s standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.
7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATDW-1310 Tools and Methods of Drywall Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATDW-1620 Taping Tools &amp; Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATEL-1330 National Electric Code</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1300 Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320 Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
</tbody>
</table>
Young Children in Early Childhood Settings

in the teaching practicums and seminar (in Early Childhood (ECED) and Education (EDUC) courses, and 3.00

Early Childhood Education. The Pre-K Associate license also requires

students who complete the Associate of Applied Science degree in

The Pre-Kindergarten (Pre-K) Associate degree and the Pre-Kindergarten Associate degree are the same.

Second Semester

ATPT-1340 Wall Preparation and Repair 2
Credit Hours 13

Second Semester

ATDW-2310 Automatic Taping Tools 2
ATDW-2330 Finishing Boxes 2
ATDW-2350 Filling Compounds/Procedures 2
ATPT-1650 Blueprints I: Construction Fundamentals 2
ATPT-1660 Labor in American Society 2
ATPT-2320 Safe Work Practices 3
Credit Hours 13

Summer Completion

ATDW-2340 Texturing 2
ATPT-2340 Blueprints II: Advanced Reading and Estimating 2
ATPT-2360 Foreman Training 2
Credit Hours 6

Total Credit Hours 32

Early Childhood Education, Associate of Applied Science

The Early Childhood Education program prepares students to teach young children in a variety of inclusive early childhood settings, including preschools, pre-kindergartens, Head Start, childcare centers and infant/toddler programs. The program is offered at the Eastern, Metropolitan and Western campuses. Students will receive a basic understanding of principles of early childhood education, child growth and development, and will develop specific skills in planning and implementing the curriculum in centers. Upon completion of the program, students will be qualified to assume lead teacher and director positions. This program is accredited by the Ohio Department of Education to prepare students for state licensure as Pre-Kindergarten Associate teachers. The Early Childhood Education program is accredited by the National Association for the Education of Young Children. Graduates of this program may work with children through five years of age. To work with children in kindergarten or the primary grades, a baccalaureate degree and state teacher's license for Pre-K to third grade is required. A number of four-year teacher preparation programs have transfer agreements with the College's Early Childhood program.

The Pre-Kindergarten (Pre-K) Associate Licensure is available for students who complete the Associate of Applied Science degree in Early Childhood Education. The Pre-K Associate license also requires an overall grade point average of 2.00, a grade point average of 2.50 in Early Childhood (ECED) and Education (EDUC) courses, and 3.00 in the teaching practicums and seminar (ECED-1860 Experience with Young Children in Early Childhood Settings, ECED-2870 Early Childhood Education Student Teaching Practicum, ECED-2990 Early Childhood Education Student Teaching Seminar). The Early Childhood Education program recommends graduates for state licensure after the student passes the Ohio Department of Education's prekindergarten education licensure exam.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 139) about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- Complete ENG-0990 Language Fundamentals II with “C” or higher or achieve appropriate score on English Placement Test
- Complete Mathematics placement test
- Retrieve the Program Approval Process and Information packet at least two weeks prior to the start of the semester. Students can obtain the packet by contacting the Program Manager or visiting the Department of Social Sciences at the Western Campus.
- Complete ODJFS form 1175 and the BCI/FBI check at an approved ODJFS site using code 5104.013 and return the receipt of completion for background check and ODJFS form 1175 to the Program Manager at least two weeks prior to the start of ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs. Social Security Card and picture ID required for Webcheck background process to be completed. Students under 18 years of age must be accompanied by a parent or legal guardian.
- All BCI and FBI background check information must be submitted to the Program Manager. Students whose reports have not been submitted as per policy, or who do not meet the Prohibitive Offenses Rehabilitation (listed in ODJFS Appendix A to Rule 5101:2-13-09) will not be permitted to continue enrollment in the Early Childhood Education programs or teacher education courses, as student will be unable to complete required field and observation experiences as part of the program requirements approved by the Ohio Department of Education and the program Accreditor, the National Association for the Education of Young Children (NAEYC).

Other Information

- The student is eligible for the Pre-Kindergarten Associate Teacher’s license when the associate degree is completed with an overall GPA of 2.0, a GPA of 2.5 in all Early Childhood and Education courses, and with completion of 345 hours of faculty supervised field work earning a 3.0 in ECED-1860 Experience with Young Children in Early Childhood Settings, ECED-2870 Early Childhood Education Student Teaching Practicum and ECED-2990 Early Childhood Education Student Teaching Seminar.
- Pre-Kindergarten Associate teacher’s license can be applied for after the student passes the licensure exam. The licensure exam is a requirement of the Ohio Department of Education and is not affiliated with Cuyahoga Community College.
- Application requirements for the Early Childhood Education degree and the Pre-Kindergarten Associate degree licensure are the same.
Program Outcomes

This program is designed to prepare students to demonstrate the following program outcomes:

1. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.
2. Include and value children, families and communities, create respectful reciprocal relationships, support and involve all families in their children’s development and learning.
3. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.
4. Create an inviting and enriched environment that supports children’s optimal growth and development within the context of group living.
5. Design, implement and evaluate experiences that promote positive development and learning for all children.
6. Integrate and use a variety of respectful, responsive teaching strategies.
7. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles and interact and relate to all persons in a responsive, respectful manner.
8. Display positive leadership qualities within an early childhood environment.
9. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, use Standard English in writing and speaking.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ECED-1010</td>
<td>Introduction to Early Childhood Education: Children's Development and Programs</td>
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<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
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<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
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<tr>
<td>ENG-1010</td>
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<td>PSY-1010</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
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<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<td>ECED-1301</td>
<td>Language and Literacy in an Integrated Curriculum</td>
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<tr>
<td>ECED-1311</td>
<td>Art and Creative Expression in an Integrated Curriculum</td>
<td>3</td>
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<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
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Summer Session

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<tr>
<td>ECED-2300</td>
<td>Child Behavior and Guidance</td>
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<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
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Third Semester

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<tr>
<td>ECED-1321</td>
<td>Math and Science Inquiry in an Integrated Curriculum</td>
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<tr>
<td>ECED-1331</td>
<td>Music and Movement in an Integrated Curriculum</td>
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<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
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<tr>
<td>ECED-1860</td>
<td>Experience with Young Children in Early Childhood Settings</td>
<td>3</td>
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<tr>
<td>ECED-2500</td>
<td>Infant/Toddler Development, Relationships, and Programs</td>
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Fourth Semester

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<tr>
<td>ECED-2401</td>
<td>Families, Communities, Schools</td>
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<tr>
<td>ECED-2870</td>
<td>Early Childhood Education Student Teaching Practicum</td>
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<tr>
<td>ECED-2990</td>
<td>Early Childhood Education Student Teaching Seminar</td>
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<tr>
<td>PSY-2110</td>
<td>Educational Psychology</td>
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</table>

Total Credit Hours 64

Electrical Technician Certificate of Completion

Program description

Students receive hands on training and knowledge in the skills needed to maintain, install and troubleshoot today’s automated electrical systems in business and industry.

Program cost

Approximately $2,500

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075
Upon completion students receive
WCED certificate

Related Programs/Training
• Integrated Systems Engineering Technology, Associate of Applied Science (p. 321)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Electrical Technician Certificate of Completion

Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science

Technology has impacted biomedical equipment in the health field. Bio-medical engineering technicians are needed to perform safety checks, preventive maintenance, calibration and repair various bio-medical pieces of equipment. This general bio-medical equipment may involve infusion pumps, ventilators, patient monitors, electrosurgery units, defibrillators and other medical apparatus. Students completing the biomedical program in electrical engineering technology will find jobs in hospitals, medical equipment manufacturers or third-party service organizations associated with hospitals.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 143) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 277)
• Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)
• Electronic Engineering Technician, Certificate of Proficiency (p. 283)

Program Admission Requirements
• High School Diploma/GED
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:
1. Use organizational skills for time management, scheduling, and resource allocation to meet and satisfy organizational, quality and customer regulatory requirements.
2. Work independently and as a member of a diverse team while maintaining a high-level of professionalism.
3. Communicate in a clear, concise written and verbal manner to all levels of clinical and non-clinical staff.
4. Utilize information gathered through the troubleshooting process and develop and communicate an action plan to correct medical equipment, patient and user issues in a timely and efficient manner.
5. Perform all aspects of medical equipment support and service, including but not limited to inspection, repair, installation and networking in the healthcare industry.
6. Prepared to sit for the certified Bio Medical Equipment Technician Exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
</tr>
<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<td>Credit Hours</td>
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<table>
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<td>Human Biology</td>
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<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
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<tr>
<td>EET-1210</td>
<td>AC Electric Circuits</td>
</tr>
<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
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<td>Select one of the following:</td>
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<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
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<td>MATH-153H</td>
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<table>
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<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET-2111</td>
<td>Industrial Electronics I</td>
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<tr>
<td>EET-2120</td>
<td>Electronics I</td>
</tr>
<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
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<tr>
<td>EET-2400</td>
<td>Biomedical Instrumentation I</td>
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One of the following: 3
MATH-1540 Trigonometry
MATH-154H Honors Trigonometry

Credit Hours 15

Fourth Semester
EET-2220 Electronics II 3
EET-2410 Biomedical Instrumentation II 3
EET-2490 Biomedical Design Project 2
PHYS-1210 College Physics I 4
ITNT-2300 Networking Fundamentals 3
Select one of the following: 3
PHIL-2020 Ethics
PHIL-202H Honors Ethics

Credit Hours 18

Summer Completion
EET-2901 Clinical Internship 3

Credit Hours 3

Total Credit Hours 65

Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science

Students will be prepared for careers dealing with network hardware systems analysis, planning and implementation. Students will gain the necessary skills to design, build and maintain small to medium size networks and manage network hardware systems. Skills acquired will assist students in preparing to take industry certification exams.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 144) about how certificate credits apply to the related degree and about related training programs.

Related Degrees and Certificates
- Information Technology - Networking Software Associate of Applied Business degree (p. 316)
- Cisco, Short-Term Certificate (p. 236)
- Computer Maintenance Technology, Certificate of Proficiency (p. 244)

Related Training and Credentials
- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)

Program Admission Requirements
- High School Diploma/GED not required, but highly recommended
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Program Outcomes
This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Apply knowledge of network hardware, the Open Systems Interconnection (OSI) Model, protocols, diagnostic tools and troubleshooting to assist in the design, selection of equipment, installation, configuration, testing and optimization of an organization’s production network to ensure appropriate access and response time.
11. Use knowledge of network backup hardware and software to implement, maintain, and execute an organization disaster recovery plans.
12. Sit for A+ and CCNA certification exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1015 Introduction to Computer Maintenance and Repair</td>
<td>3</td>
</tr>
</tbody>
</table>
Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science

Graduates of the Digital Communications concentration in the Electronic Engineering Technology program can work as technical specialists in the broad and diverse field of communications, in such areas as installation, operation and maintenance of (principally) digital and analog communications systems. The program emphasizes both theory and application and consists of course work and lab work in basic electronic circuits, digital and microprocessor systems, networking, analog and digital communications circuits and system and Communications media (fiber optics, broadband cable, twisted pair and microwave systems.) With several additional courses, concentration majors can transfer to some universities in the 2+2 program (EET-2242 C and ASM Programming with Embedded Applications and EET2180 EET Applied Calculus).

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 143) about how certificate credits apply to the related degree.

Related Degrees and Certificates

• Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 278)
• Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 275)
• Electronic Engineering Technician, Certificate of Proficiency (p. 283)

Program Admission Requirements

• High School Diploma/GED
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.
• Receive a “B” grade or higher in EET-1161 Direct Current Circuits.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate effective oral and written communications using appropriate technology and terminology to various audiences.
2. Work independently and as an effective member of a team to complete projects.
3. Explain professional, ethical and social responsibilities and the need for lifelong learning in the engineering profession.
4. Apply current knowledge of math, science, engineering, fiber, radio frequency and networking technology to build/modify troubleshoot, install, operate and maintain equipment using schematic and/or mechanical drawings, instrumentation, productivity tools, safety and other appropriate standards.
5. Sit for certification(s).

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
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<tr>
<td>EET-1180</td>
<td>Surface Mount Soldering</td>
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<td>EET-1190</td>
<td>Printed Circuit Layout</td>
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<td>MET-1100</td>
<td>Technology Orientation</td>
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<tr>
<td>ENG-1010</td>
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<td>ENG-101H</td>
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<td>PHIL-2020</td>
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<td>PHIL-202H</td>
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**Second Semester**

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<td>EET-1241</td>
<td>Digital Fundamentals</td>
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<td>PHYS-1210</td>
<td>College Physics I</td>
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**Third Semester**

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<td>EET-2131</td>
<td>Digital Communication Fundamentals</td>
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<td>EET-2170</td>
<td>Signal Analysis</td>
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<tr>
<td>EET-2242</td>
<td>C and ASM Programming with Embedded Applications</td>
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<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
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**Fourth Semester**

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<td>EET-2220</td>
<td>Electronics II</td>
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Total Credit Hours: 64

Electrical/Electronic Engineering Technology, Associate of Applied Science

The ever-changing and increasing field of Electronic Technology is expanding the need for highly trained electronic technicians. These electronic technicians assist engineers and scientists in various electronic environments such as electronic instrumentation and control, aerospace research, electronic communications, process control, robotics and computer repair. Students completing the program gain the theoretical knowledge and skills that enable success in these various electronic fields.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 143) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 144)
- Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science (p. 145)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)
- Electronic Engineering Technician, Certificate of Proficiency (p. 283)

Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.
• EET-1161 Direct Current Circuits with a “B” grade or higher

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate effective oral and written communication skills using appropriate technology.
2. Work independently and collaboratively as an effective member of a team to complete projects.
3. Identify, acquire, evaluate and ethically use technical information from multiple sources.
4. Exhibit professional, ethical, and social responsibilities and the need for lifelong learning in the engineering profession.
5. Conduct, analyze and interpret electronic experiments using electronic instrumentation standard measurements.
6. Apply knowledge of circuit analysis/design and use computer languages and software to solve a stated problem in analog or digital electronics.
7. Apply knowledge of physical sciences and practice of engineering standards to build, test, operate and maintain electrical and electronic systems.
8. Use algebra, trigonometry, or applied calculus to conduct experiments of electrical and electronic systems.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
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<tr>
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<td>MET-1100</td>
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<td>COMM-1000</td>
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<td>ENG-101H</td>
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<table>
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<tr>
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<td>EET-1241</td>
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<td>PHIL-2020</td>
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<td>PHIL-202H</td>
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<td>ENG-1020</td>
<td>College Composition II</td>
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<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<td>ENG-2151</td>
<td>Technical Writing</td>
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<td>EET-2120</td>
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<td>Honors Trigonometry</td>
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<td>ITNT-2300</td>
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<td>PHYS-1210</td>
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<td>Select one of the following:</td>
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<td>EET-2520</td>
<td>Programmable Logic Controllers</td>
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<td>EET-xxxx</td>
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<tr>
<th>Electives</th>
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<tr>
<td>EET-1100</td>
<td>Introduction to Robotics</td>
</tr>
<tr>
<td>EET-1150</td>
<td>Basic Robotics with Math</td>
</tr>
<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
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</tbody>
</table>

Electroneurodiagnostic Technology with a Concentration in Polysomnography, Associate of Applied Science

The Associate of Applied Science degree prepares the student for an entry-level position as an Electroneurodiagnostic Technologist, for employment in hospitals, doctors' offices and clinics. Electroneurodiagnostic technology is a profession devoted to the
recording and study of electrical activity of the brain and nervous system. Used for medical evaluation and research, it includes procedures that assess the function of the nervous system. Technologists record electrical activity arising primarily from the brain, spinal cord and peripheral nerves. A concentration in Polysomnography will prepare the students for an entry-level position as a Polysomnographic Technologist. Polysomnography is a study of sleep, and sleep disordered conditions. This program consists of on-campus didactic and laboratory instruction, as well as off-campus clinical experiences at our affiliated health care institutions.

Program contact: Learn more

Related Degrees and Certificates
- Electroneurodiagnostic Technology, Associate of Applied Science (p. 281)

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 2.0 admissions/core courses requirements, 2.5. overall.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

- Complete the following courses with a grade of “C” or higher. (Note pass/no pass grades not accepted):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry 1</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I 2</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics 3</td>
<td>3</td>
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<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I 4</td>
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</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
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</table>

1 CHEM-1010 and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100.
2 BIO-2330, or BIO-233A and BIO-233B, will be accepted in place of BIO-2331. It is recommended that BIO-2341 Anatomy and Physiology II also be taken prior to entering the program.
3 MATH-1820/2820 may not be used to meet this requirement. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1141, MATH-1270 and MATH-1280 will be accepted program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.
4 ENG-1020 or ENG-102H will be accepted in place of ENG-1010 or ENG-101H

Other Information
- 16 students accepted per year.
- Criminal background check required.
- Two Clinical observation visits required (see details in application packet).
- Pre-admission status may be offered if admissions requirements are incomplete; however, no student will be admitted into the program until all prerequisites and observation are successfully completed.
- Core courses may be repeated only once to improve a grade below “C”.
- Courses used as prerequisites, core courses, as well as all Electroneurodiagnostic specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
- Candidates will be required to present documentation of good health verified by a physician examination and immunizations prior to being granted permission to enter clinical training and CPR certification. Please refer to the health requirements for health career students.
- Accepted applicants must attend a group information session prior to Fall Semester.

Program Application Packet available here.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate knowledge and performance of all electrophysiological testing procedures.
2. Manage and budget time to perform various electrophysiological diagnostic procedures according to current guidelines.
3. Listen, speak and contribute with team members while performing various electrophysiological procedures in different clinical settings.
4. Recognize technical and clinical changes during data acquisition and provide appropriate documentation.
5. Demonstrate knowledge and performance of all electrophysiological testing procedures.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry 1</td>
<td>3</td>
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<tr>
<td>BIO-2331 Anatomy and Physiology I 2,3</td>
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<tr>
<td>ENG-1010 College Composition I</td>
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<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>-------------</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>END-1300</td>
<td>Introduction to Electroneurodiagnostic Technology</td>
</tr>
<tr>
<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
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<tr>
<td>END-1350</td>
<td>Introduction to Electroencephalography (EEG)</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirements (p. 33)</td>
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<tr>
<td><strong>Credit Hours</strong></td>
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<tr>
<td><strong>Second Semester</strong></td>
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<tr>
<td>BIO-1450</td>
<td>Intermediate Electroencephalography (EEG)</td>
</tr>
<tr>
<td>END-1500</td>
<td>Basic Evoked Potentials</td>
</tr>
<tr>
<td>END-1911</td>
<td>END Directed Practice I</td>
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<tr>
<td><strong>Credit Hours</strong></td>
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</tr>
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<td><strong>Summer Session</strong></td>
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</tr>
<tr>
<td>END-2451</td>
<td>Neonatal/Pediatric Electroencephalography</td>
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<tr>
<td>END-2510</td>
<td>Principles of Polysomnography</td>
</tr>
<tr>
<td>END-2911</td>
<td>END Directed Practice II</td>
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<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
</tr>
<tr>
<td>END-2412</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders</td>
</tr>
<tr>
<td>END-2520</td>
<td>Intermediate Polysomnography</td>
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<tr>
<td>END-2915</td>
<td>Polysomnography Directed Practice I</td>
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<td>Select one of the following:</td>
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<td>Bioethics</td>
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<td>PHIL-205H</td>
<td>Honors Bioethics</td>
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<td><strong>Credit Hours</strong></td>
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<td><strong>Fourth Semester</strong></td>
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<tr>
<td>END-2530</td>
<td>Intermediate Polysomnography II</td>
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<tr>
<td>END-2990</td>
<td>Electroneurodiagnostic Capstone</td>
</tr>
<tr>
<td>Communications/Mathematics/Natural Sciences requirement (p. 31)</td>
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</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
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</table>

1. ENG-1310 will be accepted in place of END-1311.
2. Requires sufficient score on Biology Placement Test to take this course in the same semester as BIO-1100.
3. BIO-2330, or BIO-233A and BIO-233B, will be accepted in place of BIO-2331.
4. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240 Contemporary Mathematics.
5. MATH-1141, MATH-1270 and MATH-1280 will be accepted program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.
6. CHEM-1010 or CHEM-1020 will be accepted in place of BIO-1100.
7. END-1140 will be accepted in place of END-1150.
8. END-2411 will be accepted in place of END-2412.
9. END-1421 and END-142L together will be accepted in place of END-2520.
10. END-1934 will be accepted in place of END-2915.
11. MATH-1141, MATH-1270 and MATH-1280 will be accepted program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.
13. Students with the RPSGT credential may qualify for a waiver or comparable credit for END-2510, END-2520, END-2530, and END-2915. See Program Director for more information on applying for a waiver or comparable credit.

**Electroneurodiagnostic Technology, Associate of Applied Science**

The Associate of Applied Science degree prepares the student for an entry-level position as an Electroneurodiagnostic Technician for employment in hospitals, doctors’ offices and clinics. Electroneurodiagnostic technology is a profession devoted to the recording and study of electrical activity of the brain and nervous system. Used for medical evaluation and research, it includes procedures that assess the function of the nervous system. Technologists record electrical activity arising primarily from the brain, spinal cord and peripheral nerves. This program consists of on-campus didactic and laboratory instruction, as well as off-campus clinical experiences at our affiliated health care institutions.

**Program contact:** Learn more

Learn more (p. 120) about related programs.

**Related Degrees and Certificate Programs**

- Electroneurodiagnostic Technology with a concentration in Polysomnography, Associate of Applied Science (p. 279)

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:
• High School Diploma/GED
• GPA required: 2.0 admissions/core courses requirements, 2.5. overall.
• Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
• Complete the following courses with a grade of “C” or higher.(Note pass/no pass grades not accepted):

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
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</tr>
<tr>
<td>BIO-2331</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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Select one of the following:

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<td>ENG-1010</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</table>

1 CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100
2 BIO-2330 or BIO-233A and BIO-233B will be accepted in place of BIO-2331. It is recommended that BIO-2341 Anatomy and Physiology II also be completed prior to entering the program.
3 MATH-1820 Independent Study/Research in Mathematics/MATH-2820 Independent Advanced Study/Research in Mathematics may not be used to meet this requirement.
MATH-1141 or higher taken prior to Fall 2016 will be accepted in place of MATH-1240 through Fall 2019.

Other Information
• 16 students accepted per year.
• Criminal background check required.
• Two Clinical observation visits required (see details in application packet).
• Pre-admission status may be offered if admissions requirements are incomplete; however, no student will be admitted into the program until all prerequisites and observation are successfully completed.
• Core courses may be repeated only once to improve a grade below “C”.
• Courses used as prerequisites, core courses, as well as all Electroneurodiagnostic specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
• Candidates will be required to present documentation of good health verified by a physician examination and immunizations prior to being granted permission to enter clinical training and CPR certification. Please refer to the health requirements for health career students.
• Accepted applicants must attend a group information session prior to Fall Semester.

Program Application Packet available here.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively communicate to patients and families when explaining various electrophysiologic procedures.
2. Manage and budget time to perform various electrophysiologic procedures according to current guidelines.
3. Listen, speak and contribute with team members while performing various electrophysiologic procedures in different clinical settings.
4. Recognize technical and clinical changes during data acquisition and provide appropriate documentation.
5. Demonstrate knowledge and performance of all electrophysiologic testing procedures.

Suggested Semester Sequence

Program Admissions Requirements Semester: 10 Credit Hours

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</tr>
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<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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Select one of the following:

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<tbody>
<tr>
<td>ENG-1010</td>
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<td>ENG-101H</td>
<td>Honors College Composition I</td>
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First Semester: 13 Credit Hours

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<td>END-1311</td>
<td>Cardiopulmonary Anatomy and Physiology II</td>
<td>2</td>
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<td>END-1350</td>
<td>Introduction to Electroencephalography (EEG)</td>
<td>3</td>
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<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
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<tr>
<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 33)</td>
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Second Semester: 13 Credit Hours

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<td>Anatomy and Physiology II</td>
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<td>END-1450</td>
<td>Intermediate Electroencephalography (EEG)</td>
<td>3</td>
</tr>
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<td>END-1500</td>
<td>Basic Evoked Potentials</td>
<td>3</td>
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<td>END-1911</td>
<td>END Directed Practice I</td>
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Summer Session: 2 Credit Hours

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<tr>
<td>END-2400</td>
<td>Intraoperative Monitoring for Electroneurodiagnostic Technologists</td>
<td>2</td>
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<td>END-2911</td>
<td>END Directed Practice II</td>
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### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>END-2300</td>
<td>Nerve Conduction Studies</td>
<td>3</td>
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<tr>
<td>END-2412</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders</td>
<td>7</td>
</tr>
<tr>
<td>END-2420</td>
<td>Intermediate Intraoperative Monitoring</td>
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</tr>
<tr>
<td>END-2921</td>
<td>END Directed Practice III</td>
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<td>PHIL-2050</td>
<td>Bioethics</td>
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<td>PHIL-205H</td>
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Total Credit Hours: 7

### Fourth Semester

<table>
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<th>Credits</th>
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<tbody>
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<td>END-2320</td>
<td>Intermediate Nerve Conduction Studies</td>
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</tr>
<tr>
<td>END-2931</td>
<td>END Directed Practice IV</td>
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<tr>
<td>END-2990</td>
<td>Electrophysiological Capstone</td>
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Communications/Mathematics/Natural Sciences requirement (p. 31)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Total Credit Hours: 10-11

Total Credit Hours: 63-64

---

1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry may be taken in place of BIO-1100 Introduction to Biological Chemistry.
2. Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100 Introduction to Biological Chemistry.
3. BIO-2330, or BIO-233A and BIO-233B will be accepted in place of BIO-2331 Anatomy and Physiology I.
4. END-1310 will be accepted in place of END-1311.
5. MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240 Contemporary Mathematics. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.
6. BIO-2340, or BIO-234A and BIO-234B will be accepted in place of BIO-2341.
7. END-2411 will be accepted in place of END-2412.

### Electronic Engineering Technician, Certificate of Proficiency

The Electronic Engineering Technology certificate will provide the student basic knowledge of electrical/electronic theory which can assist in obtaining a credential documenting partial completion in coursework towards an associate degree. The certificate program supports an associate degree that will transfer via 2 + 2 to bachelor degree programs at The University of Akron, Cleveland State University, and others.

**Degree:** Students may apply credits towards the Associate of Applied Science degree in Electrical/Electronic Engineering Technology.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 143) and here (p. 144) and here (p. 145) about how certificate credits apply to the related degree.

### Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate skills supported by knowledge of elementary electronic circuits.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
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<td>MET-1100</td>
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<tr>
<td>COMM-1000</td>
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</table>

Select one of the following: 3
### ENG-1010
College Composition I

### ENG-101H
Honors College Composition I

**Credit Hours** 14

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1210</td>
<td>AC Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
<td>3</td>
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Select one of the following: 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
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Select one of the following: 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
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</tr>
</tbody>
</table>

Select one of the following: 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** 30

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### Emergency Medical Technician-Basic, Short-Term Certificate

This program is designed for individuals interested in pursuing a career as an Emergency Medical Technician. It prepares students for entry level positions with ambulance and Emergency Medical Services (EMS). Because Ohio certification as an EMT or Paramedic is a component for staffing fire departments, it is also important for anyone pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Basic examination. Successful completion of this examination is necessary for State of Ohio EMT-Basic certification. A criminal background check must be completed through a program approved source prior to participation in directed practice.

Financial Assistance funds cannot be applied towards this program.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 121) and here (p. 124) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

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### Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Submit application at least two weeks before EMT-1302 Emergency Medical Technician - Basic/EMT-130L EMT Basic Practical Lab class begins.
- Must be 18 years old or 17 years old and a high school senior to enroll in EMT-1302 Emergency Medical Technician - Basic/EMT-130L EMT Basic Practical Lab.
- ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.

### Other Information

- 215 students accepted per year.
- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-Basic available at Eastern, Metropolitan, Western and Westshore Campuses.
- Criminal background check required.
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised/ Administrative Code 4765.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.

2. Exhibit professional, ethical and compassionate behavior, which follows department, city, state and federal regulations, when interacting with diverse groups of patients, their families, health care professionals, and community to promote sound physical, psychological, spiritual health and safety at all times.

3. Apply knowledge of anatomy, physiology, medicolegal and ethical issues, basic patient assessment skills, and basic medical equipment to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient and establish the priority of interventions needed to improve the patient's outcome within the EMT Basic level's scope of practice.

4. Perform pre-hospital assessments and treatments using basic medical techniques and equipment available within the EMT Basic level's scope of practice.

5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.

6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.
7. Identify stress within myself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.

8. Sit for the National Registry of Emergency Medical Technician Exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1302</td>
<td>6</td>
</tr>
<tr>
<td>EMT-130L</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1401</td>
<td>4</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>11</td>
</tr>
</tbody>
</table>

1 Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.

2 BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology.

Emergency Medical Technology, Associate of Applied Science

This program is designed for individuals providing emergency medical service to the community. Three levels of training are available: EMT-B, EMT-P and Associate of Applied Science degree in Emergency Medical Technology. Certification is provided by the National Registry of Emergency Medical Technicians (NREMT) and the Ohio Dept. of Public Safety, Division of EMS. The graduate may function on the levels required by Ohio Law to provide basic and advanced life support under the direction of a physician, as well as to provide supervision of operations in an emergency service. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences. State of Ohio EMS Accreditation number: 312.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 121) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Fire - Emergency Medical Services, Associate of Applied Science (p. 294)
- Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)
- Paramedic, Certificate of Proficiency (p. 378)

Related Training and Credentials

- Advanced EMS Training (p. 183)

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the English and Math requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher
- Complete MATH-1000 level or higher with "C" or higher
- GPA required: 2.0 admissions requirements, 2.0 overall
- One year EMT-Basic experience preferred for entry into EMT-P
- EMT-Basic Ohio certification prior to first day of EMT-2330 Paramedic Theory I
- Signed felon-misdemeanor statement
- EMT Basic certification and Program Manager approval for all courses, except EMT-1310 Cardiopulmonary Resuscitation

Other Information

- 60 students accepted per year
- Criminal background check required
- EMT-Basic available at Eastern, Metropolitan, Western & Westshore; EMT-P available at Eastern, Metropolitan, Western, Westshore and offsite location
- Courses offered as listed in schedule. Many are flexible
- Must be 18 years of age or 17 years of age and high school senior for EMT-Basic
- All EMT classes must be completed with "C" or higher
- Clinical components of all classes must be completed within one year
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure or Ohio Revised/ Administrative Code 4765

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilizing various verbal, non-verbal, written and electronic communication methods, one will be able to interact with and educate a diverse group of populations, which would include public administration, our colleagues and the community, to provide direction and information about patient care or an event that meets the goals/objectives of the organization, while adhering to federal privacy standards.

2. Exhibit professional, ethical and compassionate behavior which follows department, city, state and federal regulations when interacting with diverse groups of patients, their families, healthcare...
professionals and the community to promote sound physical, psychological, spiritual health and safety at all times.

3. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient, and formulate and initiate the treatment plan needed to optimize the patient’s outcome within a Paramedic Scope of Practice.

4. Perform pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic Scope of Practice.

5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.

6. Use strategic management and ethical decision making skills to lead, schedule, and staff Emergency Medical Services (EMS) Systems.

7. Effectively resolve conflict and solve problems, and utilize personal organizational skills to excel in a fast-paced, dynamic work setting.

8. Apply critical thinking skills to identify risks, implement solutions, analyze outcomes, and adapt to change within the dynamic field of Emergency Medical Services.

9. Values wellness and participates in activities to promote sound physical, psychological, and spiritual health in themselves, patients and their families, healthcare professionals and community members.

10. Sit for the National Registry of Emergency Medical Technician Exam, National Registry of EMTs Paramedic Certification Exam, University of Maryland Baltimore Campus Critical Care Paramedic Certification Exam and Flight Paramedic Certified Exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I 1</td>
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<tr>
<td>EMT-1302</td>
<td>Emergency Medical Technician - Basic</td>
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<tr>
<td>EMT-130L</td>
<td>EMT Basic Practical Lab</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology 2</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
</tr>
<tr>
<td>MATH-1xxx (p. 32)</td>
<td>1000-level MATH course or higher</td>
</tr>
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<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2330</td>
<td>Paramedic Theory I 4</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>Paramedic Theory III 4</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2340</td>
<td>Paramedic Theory II 4</td>
</tr>
<tr>
<td>EMT-2360</td>
<td>Paramedic Theory IV 4</td>
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<td>Select one of the following:</td>
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<tr>
<td>PSY-2020</td>
<td>Life Span Development</td>
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<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
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<table>
<thead>
<tr>
<th>Summer Completion</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EMT-2371</td>
<td>Paramedic Capstone Course</td>
</tr>
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</table>

Enrolled Agent

Enrolled agents are licensed by the federal government and have demonstrated special competence in tax matters and professional ethics and can practice before the IRS anywhere in the United States. The Enrolled Agent program is a blended learning program intended to prepare participants to pass the IRS Special Enrollment Examination (SEE). Sessions are structured based on the Gleim System for Success. The SEE is a three-part exam administered by Prometrics on behalf of the IRS. You must successfully pass all three parts to receive IRS-EA certification.

Program description

Enrolled agents are licensed by the federal government and have demonstrated special competence in tax matters and professional ethics and can practice before the IRS anywhere in the United States. The Enrolled Agent program is a blended learning program intended to prepare participants to pass the IRS Special Enrollment Examination (SEE). Sessions are structured based on the Gleim System for Success. The SEE is a three-part exam administered by Prometrics on behalf of the IRS. You must successfully pass all three parts to receive IRS-EA certification.

Other important information

• All EA candidates must obtain a Preparer Tax Identification Number (PTIN). For more information, visit the IRS website here.

• In order to become a certified Enrolled Agent through the IRS, you will need to complete all three parts of the IRS exam, which is not part of the class or the course fee. Visit the Prometrics testing center site here for more information.

• EAs require 72 hours of continuing education every two years.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Accounting
- Payroll

To Register for and Learn more about Enrolled Agent.

Entrepreneurial Technology, Certificate of Proficiency

The Entrepreneurial Technology certificate prepares graduates with knowledge of business practices and application software that will serve as the basis for organization, management and coordination of a variety of small offices and workplaces. Students can apply earned credits from this certificate to the Business Technology degree.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 98) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Students must be able to touch type at a combined speed and accuracy rate of 35 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of "C" prior to entrance to this certificate program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.
4. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.
5. Apply knowledge of time, resources, and office management to support effective office operations, guidelines and goals.

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BT-1201</td>
<td>Word Processing</td>
<td>3</td>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td>3</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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<td></td>
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Second Semester

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<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>BT-2410</td>
<td>Administrative Management</td>
<td>3</td>
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<tr>
<td>BT-1700</td>
<td>Business Spreadsheets (Excel)</td>
<td>3</td>
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<td>Select one of the following:</td>
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<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
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<tr>
<td>BT-1241</td>
<td>Information &amp; Records Management</td>
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<tr>
<td>BT-xxxx</td>
<td>Business Technology Elective</td>
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<td>Select one of the following:</td>
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<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
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<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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<td></td>
<td><strong>Credit Hours</strong></td>
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Summer Completion

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BT-2040</td>
<td>Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>BT-2300</td>
<td>Business Database Systems (Access)</td>
<td>3</td>
</tr>
<tr>
<td>BT-2700</td>
<td>Advanced Business Spreadsheets (Excel)</td>
<td>3</td>
</tr>
</tbody>
</table>

|             | **Credit Hours**                      | **9**        |
| Total Credit Hours | | **32-33**  |
Environmental, Health and Safety Technology, Associate of Applied Science

This program prepares students for careers in the environmental, health and safety technology (EHST) field. Students who choose to focus on health hazards, industrial hygiene, and safety in the workplace can elect Option A: Safety Technology. Other students can choose to develop their knowledge and skills in surface water, ground water and soil sampling; understanding risk assessments, and generally evaluating environmental conditions available under Option B: Environmental Field Technician. Select EHST courses contain safety training modules that can provide students with safety certificates. The EHST Program is designed to provide our students with a thorough understanding of compliance, training and workplace application of Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and Department of Transportation (DOT) laws and regulations, whether in manufacturing or industrial sector, governmental agency, consulting field or firms, or healthcare industry. Interested students must complete a program application and are encouraged to meet with the EHST Program Manager to obtain important program information, understand course sequences, and internship opportunities that will be reflected into the student’s academic plan.

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

Program Admission Requirements

- Interested students are required to complete a program application and are encouraged to meet with the Program Manager to obtain important program information, understand course sequences, and internship opportunities as reflected within the student’s academic plan.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, except with departmental permission.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test, or higher except with departmental permission.

Program Learning Outcomes

1. Effectively and efficiently contribute to an organization’s environment, health and safety programs.
2. Recognize, evaluate, and control workplace hazards and environmental stressors.
3. Recognize and administer quality-assurance and quality-control protocols and methodologies to ensure data integrity and reliability for sampling, reporting, permitting, and compliance.
4. Recognize, interpret, and explain environmental, health and safety laws and regulations.
5. Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
6. Evaluate, select, and apply environmental health and safety technologies and software applications.
7. Articulate the value and benefits of a safe workplace and environmental stewardship.
8. Effectively and efficiently train others in environmental, health and safety.
9. Understand and demonstrate ethical behavior in environmental health and safety.

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

Note: Select option (a) or (b) before beginning this program.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1301</td>
<td>Introduction to Environmental Technology</td>
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<tr>
<td>EHST-1310</td>
<td>Introduction to Environmental Law</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td></td>
</tr>
<tr>
<td>DEGR:xxxxx:</td>
<td>General Elective (See list below)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td>4</td>
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<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>&amp; BIO-105L</td>
<td>Human Biology Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Related Training and Credentials

- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 292)

Other Information

- Interview with Program Manager strongly recommended.

Learn more (p. 122) about how certificate credits apply to the related degree.
BIO-1060 & BIO-106L Environment, Ecology, and Evolution and Environment, Ecology, & Evolution Laboratory

Select one of the following:

- CHEM-1010 Introduction to Inorganic Chemistry
- CHEM-101H Honors Introduction to Inorganic Chemistry

Credit Hours 14

Summer Session

EHST-1360 Fundamentals of OSHA Compliance (Option A)

Credit Hours 2

Third Semester

EHST-2361 Environmental Sampling and Analysis

Credit Hours 4

Select one of the following:

- EHST-2341 Hazardous Material Transportation

Credit Hours 2

EHST-2352 Evacuation and Emergency Planning (Option A)

Select one of the following:

- EHST-1330 Hazardous Waste Operations and Emergency Response (Option B)

Credit Hours 3-4

Select one of the following:

- BADM-2330 Human Resource Management (Option A)

Credit Hours 2

PSY-1050 Introduction to Industrial/Organizational Psychology (Option A)

ESCI-1410 Physical Geology and Lab in Physical Geology (Option B)

Arts & Humanities requirement (p. 33)

Credit Hours 3

Fourth Semester

EHST-2390 Solid and Hazardous Waste Management

Credit Hours 3

EHST-2941 Field Experience

Credit Hours 1-4

EHST-2991 Professional Practice

Credit Hours 3

DEGR-xxxx General Elective course (See Recommended List Below)

Select one of the following:

- EHST-2221 Introduction to Safety and Health Management (Option A)

Credit Hours 2

EHST-2380 Risk Assessment (option B)

Select one of the following:

- ENG-1020 College Composition II

Credit Hours 15-18

Total Credit Hours 61-64

(B) Option B (Environmental Field Technology)

Code Title Credit Hours

EHST-1330 Hazardous Waste Operations and Emergency Response 2

ESCI-1410 Physical Geology 3

ESCI-141L Lab in Physical Geology 1

EHST-2380 Risk Assessment 2

Additional program courses 52-55

Total Credit Hours 60-63

Recommended Electives

Recommended for students planning to transfer into a four year degree program.

Code Title Credit Hours

BIO-1500 Principles of Biology I 4

BIO-1510 Principles of Biology II 4

CHEM-1530 General Chemistry I 5

CHEM-130H Honors General Chemistry I 5

CHEM-130L General Chemistry Laboratory I 1

CHEM-1310 General Chemistry II 4

CHEM-131H Honors General Chemistry II 5

CHEM-131L General Chemistry Laboratory II 1

ECON-2000 Principles of Microeconomics 3

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1 MATH-1410 Elementary Probability and Statistics I or higher recommended for students planning to transfer.

2 EHST-135A Safety and Health in the Workplace: OSHA 30 General Industry and EHST-135B Safety and Health in the Workplace OSHA 10 Construction together equal EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR. Course contains embedded training modules and issues training certificates independent of program.

3 Recommended for students in Option A.

4 Recommended for students in Option B.

5 BIO-1500 Principles of Biology I will be accepted in place of BIO-1050 Human Biology/BIO-105L Human Biology Laboratory or BIO-1060 Environment, Ecology, and Evolution/BIO-106L Environment, Ecology, & Evolution Laboratory.

6 CHEM-1300 General Chemistry I / CHEM-130L General Chemistry Laboratory I or CHEM-130H Honors General Chemistry I will be accepted in place of CHEM-1010 Introduction to Inorganic Chemistry.

7 Course contains embedded training modules and issues training certificates independent of program.

8 EHST-236A Environmental Sampling and Analysis and EHST-236B Industrial Hygiene together equal EHST-2361 Environmental Sampling and Analysis.

9 ENG-1020 College Composition II is recommended for students planning to transfer.
### ECON-2010 Principles of Macroeconomics 3
### GEOG-1030 Environmental Geography 3
### MATH-1410 Elementary Probability and Statistics I 3
### MATH-1530 College Algebra 4
### PSY-1010 General Psychology 3
### UST-1020 Urban Geography 3

Recommended electives for students pursuing Option A: Safety Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1460</td>
<td>Workers’ Compensation Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2330</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>EET-1161</td>
<td>Direct Current Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>POL-2020</td>
<td>Introduction to Conflict and Peace Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Recommended electives for students pursuing Option B: Environmental Field Technology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>or PST-1300</td>
<td>Horticultural Botany</td>
<td></td>
</tr>
<tr>
<td>BIO-2150</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2131</td>
<td>Construction Methods and Materials</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2110</td>
<td>Basic Survey Practices</td>
<td>3</td>
</tr>
<tr>
<td>EET-1195</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1510</td>
<td>Historical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-151L</td>
<td>Lab in Historical Geology</td>
<td>1</td>
</tr>
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</table>

### Environmental, Health and Safety Technology, Post-Degree Professional Certificate

The Environmental, Health and Safety Technology Certificate Degree Program is a course of study designed to provide students with a well-rounded education in environmental, health and safety compliance, training and field knowledge. The EHST Post-Degree Professional Certificate is designed for those students seeking to broaden their knowledge, enhance their skills and utilization of technology, and obtain additional safety training certificates applicable to the environmental, health, industrial hygiene, and safety fields. Students must already possess a college degree (associate or higher), although the degree may be in any subject area. Interested students must complete a program application and are encouraged to meet with the Environmental Health and Safety Technology Program Manager to obtain important program information, understand course sequences, and development of student’s academic plan.

**Program contact:** Learn more

This program is being discontinued and is no longer accepting new students effective Fall 2019. Students currently in the program will have until Summer 2022 to complete the program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 122) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

### Program Admissions Requirements

- Student applicant must complete a program application and is strongly encouraged to meet with the EHST Program Manager before enrolling in any EHST course.
- Applicant must have already completed an associate degree or higher from an accredited college or university. The degree may be in any subject area.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively and efficiently contribute to an organization’s environment, health and safety programs.
2. Recognize, evaluate, and control workplace hazards and environmental stressors.
3. Recognize and administer quality-assurance and quality-control protocols and methodologies to ensure data integrity and reliability for sampling, reporting, permitting, and compliance.
4. Recognize, interpret, and explain environmental, health and safety laws and regulations.
5. Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
6. Evaluate, select, and apply environmental health and safety technologies and software applications.
7. Articulate the value and benefits of a safe workplace and environmental stewardship.
8. Effectively and efficiently train others in environmental, health and safety.
9. Understand and demonstrate ethical behavior in environmental health and safety.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1301</td>
<td>Introduction to Environmental Technology</td>
<td>3</td>
</tr>
<tr>
<td>EHST-1310</td>
<td>Introduction to Environmental Law</td>
<td>4</td>
</tr>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
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</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EHST-xxxx</td>
<td>EHST elective course</td>
<td>2</td>
</tr>
<tr>
<td>EHST-xxxx</td>
<td>EHST elective course</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2341</td>
<td>Hazardous Material Transportation</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2352</td>
<td>Evacuation and Emergency Planning</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
<td>3</td>
</tr>
<tr>
<td>EHST-2991</td>
<td>Professional Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 16

#### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1180</td>
<td>Event Planning Essentials</td>
<td>2</td>
</tr>
<tr>
<td>xxxx 1</td>
<td>Elective Requirements</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Select one of the following:

1. EHST-135A and EHST-135B together equal EHST-1351. Course contains embedded training modules and issues training certificates independent of program.
2. Course contains embedded training modules and issues training certificates independent of program.

### Event Planning, Short-Term Certificate

The Event Planning Certificate program is intended for students interested in the theories and practical aspects of event and meeting management, including research, design, planning, coordination, execution, and evaluation of events and meetings of various types and sizes. Graduates will fill roles of: catering assistants, meeting planners, event assistants, event planners, promotions managers, and small business owners.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 101) about how certificate credits apply to the related degree and about related training programs.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify key players (i.e. vendors, clients, hotels, caterers, sponsors, etc.) build and sustain appropriate relations to work effectively to plan and execute events.
2. Demonstrate professional and ethical conduct and work practices to comply with appropriate industry standards and applicable laws.
3. Communicate clearly and effectively verbally and in writing using appropriate media and cultural sensitivity with prospects, clients, colleagues, sponsors, vendors, media and other stakeholders.
4. Determine and use appropriate information sources and technology to research, plan, communicate, market, execute and evaluate an event.
5. Plan, coordinate, and execute within time and budget parameters, the event theme, program, logistics, resources, and marketing, while minimizing risk and meeting or exceeding client expectations.

### Gainful Employment Disclosure

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
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<td>2</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1180</td>
<td>Event Planning Essentials</td>
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</tr>
<tr>
<td>xxxx 1</td>
<td>Elective Requirements</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Select one of the following:

1. EHST-135A and EHST-135B together equal EHST-1351. Course contains embedded training modules and issues training certificates independent of program.


Program description
Internal auditors in the automotive industry are essential to providing the objective feedback required for maintaining and continuously improving an effective IATF 16949 quality management system. Recommended for new or current internal auditors responsible for internal quality audits, this course provides an in-depth review of ISO 9001:2015 and IATF 16949:2016.

Other important information
A written exam that covers the content of IATF 16949 and the application of audit principles and practices based on IATF 16949 will be administered during class. Those who pass receive a certificate of successful completion, which satisfies the training requirement for individual quality management system internal auditor certification through Exemplar Global. Those who do not pass receive a certificate of attendance from Corporate College®.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- ISO Standards and Certified Training (Professional Development Programs) (p. 147)
- Lean/Lean Six Sigma (p. 105)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Exemplar Global Certified/Plexus ISO 9001:2015 Internal Auditor Training with IATF 16949:2016 Automotive Emphasis.

Exemplar Global Certified/Plexus ISO 9001:2015 Lead Auditor Training

Program description
This course is designed for both new auditors and those looking to sharpen their current auditing skills. Participants will acquire the necessary skills to become a leader in preparing and conducting first and second party audits through interactive methods. ISO International Standards ensure that products and services are safe, reliable and of
good quality. These strategic tools reduce costs by minimizing waste and errors and increasing productivity. They help companies access new markets, level the playing field for developing countries and facilitate free and fair global trade.

Other important information
A written exam covering the content of ISO 9001 and the application of audit principles and practices based on ISO 19011 will be administered during class. Those who pass will receive a certificate of completion, which satisfies the training requirement for individual quality management auditor certification by Exemplar Global. Those who do not pass will receive a certificate of attendance from Corporate College®.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
• ISO Standards and Certified Training (Professional Development Programs) (p. 147)
• Lean/Lean Six Sigma (p. 105)
• Business Management (p. 95)
• Business Management (Human Resources Management) (p. 96)
• Business Management (International Business) (p. 97)
• Business Management (Small Business Management) (p. 97)
• Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training.

Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditor Training

Program description
This course provides either new or current internal auditors an understanding of ISO 9001:2015 and a process-approach methodology. Participants will acquire the skills to become a leader in preparing and conducting first- and second-party audits through interactive methods and avoiding lecture-based teaching. Successfully completing Exemplar Global – Certified Internal Auditor Training will allow you to meet the training requirements for certification of individual QMS internal auditors.

Other important information
A written exam covering the content of ISO 9001 and the application of audit principles and practices based on ISO 19011 will be administered during class. Those who pass receive a certificate of successful completion, which satisfies the training requirement for individual quality management auditor certification by Exemplar Global. Those who do not pass will receive a certificate of attendance from Corporate College®.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
• ISO Standards and Certified Training (Professional Development Programs) (p. 147)
• Lean/Lean Six Sigma (p. 105)
• Business Management (p. 95)
• Business Management (Human Resources Management) (p. 96)
• Business Management (International Business) (p. 97)
• Business Management (Small Business Management) (p. 97)
• Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditor Training.

Facility Technician

Program description
Participants receive hands-on training and knowledge to maintain, install and troubleshoot today's building maintenance systems. Learn more (p. 215) about required coursework.
Program cost
Approximately $3,000

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Proficiency in Building Maintenance Technician (credit)

Related Programs/Training
• Integrated Systems Engineering Technology (p. 145)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Facility Technician

Fast-Track Welding Certificate Program

Program description
The Fast-Track Welding boot camp provides basic training for students who want the fundamental skills of Stick, MIG and TIG welding. This 280-hour program will prepare them for careers in the welding industry. Learn to weld in a new, state-of-the-art welding lab with current, high-tech equipment from Lincoln Electric. Upon successful completion, students will test for the AWS MIG, TIG and Stick certifications and, if they pass, receive between 1F and 4G AWS certifications.

Other important information
Successful candidates are granted interviews with companies that have welding jobs in Northeast Ohio.

Program cost
$4,995

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
American Welding Society certifications in MIG, Stick and TIG welding

Related Programs/Training
• Integrated Systems Engineering Technology (p. 145)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Fire - Emergency Medical Services, Associate of Applied Science

This program is designed for individuals interested in entering the fire service to meet civil service entry requirements as a Firefighter I & 2-paramedic. Certification is provided through the Ohio Department of Public Safety and the National Registry of Emergency Medical Technicians (NREMT). The graduate may function as a firefighter and paramedic on the level required under Ohio Law to provide fire extinguishment and rescue services, basic and advanced medical care under the direction of a physician as well as provide supervision of operations in the fire - emergency services. A criminal background check must be completed through a program approved source prior to participation in clinical and field experiences in the EMT portion of the program. Tri-C is EMT Nationally Accredited (600596), State of Ohio EMS Accreditation (312) and holds a State of Ohio Fire Charter (003).

Note: Completed courses from either the Associate of Applied Science degree in Fire Technology or the Associate of Applied Science degree in Emergency Medical Technology which meet the Fire - EMS degree requirements may be transferred.

Program contact: Learn more

Learn more (p. 124) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Emergency Medical Technology, Associate of Applied Science (p. 285)
• Emergency Medical Technician-Basic, Short-Term Certificate (p. 284)
• Paramedic, Certificate of Proficiency (p. 378)

Related Training and Credentials
• Fire Training Academy (p. 296)
• Advanced Fire Training (p. 551)
Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.
- EMT-1401 Anatomy & Physiology for Paramedics
- 2.0 GPA

Other Information

- It does not matter whether the Firefighting Certification is completed in the first, second or final segment. Firefighting is not required to become a Paramedic.
- A criminal background check must be completed through a program approved source prior to participation in clinical and field experiences in the EMT portion of the program.
- EMT-Basic Certification and completion of EMT-1401 Anatomy & Physiology for Paramedics or BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II are required to enter the Paramedic Certification program. Paramedic segment must be completed as

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2330</td>
<td>Paramedic Theory I</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>Paramedic Theory III</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2340</td>
<td>Paramedic Theory II</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2360</td>
<td>Paramedic Theory IV</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2371</td>
<td>Paramedic Capstone Course</td>
<td>5</td>
</tr>
</tbody>
</table>

- EMT-1401 is required for enrollment into EMT-2330 Paramedic Theory I.
- BIO-2331 and BIO-2341 together will be accepted in place of EMT-1401.

To enter the Fire Academy program:

- Must be 18 years old and out of High School.
- Must not be convicted of, under indictment for, pled guilty to, had a judicial finding of guilt of any of the following:
  - Fraud or material deception in applying for, or obtaining a certificate issued in accordance with this chapter.
  - A felony.
  - A misdemeanor involving moral turpitude.
  - A violation of any federal, state, county, or municipal narcotics law.
  - Any act committed in another state that, if committed in Ohio, would constitute a violation set forth in this paragraph.
- Must not be adjudicated mentally incompetent by a court of law.
- Must not be currently engaged in illegal use of controlled substances, alcohol, or other habit forming drugs or chemical substances to an extent that it impairs the ability to perform the duties of a firefighter or safety inspector.
- Must not have a beard as prescribed in the Ohio Administrative Code, Chapter 4121:1 – 21.
- Must provide evidence of a physical exam as required by the Ohio Revised prior to the first class date.
- Must wear all NFPA approved turn out gear as prescribed by the Ohio Administrative Code, Chapter 4121:1 – 21.
- Must use self-contained breathing apparatus as prescribed in the Ohio Administrative Code, Chapter 4121:1 - 21.
- Unattached (not currently employed on a Fire Department) student must provide, prior to the first class date, a copy of Cuyahoga Community College’s Firefighter’s Physical Agility Certification or attached student must provide a letter from the Fire Chief (on Department Letterhead) stating that the student has passed the Department’s Physical Agility Test.
- Attached student must, prior to the first class date, provide an official letter from the appointing department authority accepting responsibility for all actions taken, injury, or liability incurred.
- Must provide proof of health and accident insurance coverage prior to the first class date.
- Must read and sign the attached waiver for liability (Assumption of Risk Form).
- Call 1-847-688-6888 if a Selective Service number is required on the College Admission Application.
- I. E. P. Acknowledgement Form.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilizing various verbal, non-verbal, written and electronic communication methods, one will be able to interact with and educate a diverse group of populations, which would include public administration, our colleagues and the community, to provide direction and information about patient care or an event that meets the goals/objectives of the organization, while adhering to federal privacy standards.
2. Exhibit professional, ethical and compassionate behavior which follows department, city, state and federal regulations when interacting with diverse groups of patients, their families, healthcare professionals and the community to promote sound physical, psychological, spiritual health and safety at all times.
3. Use strategic management and ethical decision making skills to recognize and apply practices of leadership in all aspects of department operations.
4. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient, and formulate and initiate the treatment plan needed to optimize the patient’s outcome within a Paramedic Scope of Practice.
5. Perform pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic Scope of Practice.
6. Respond to an incident, evaluate the situation, and implement safe appropriate strategies and tactics to save lives, protect property and the environment and mitigate the hazards in an effective and efficient manner.
7. Identify current and potential hazards and perform duties maintaining a safe environment for themselves, co-workers, patients and bystanders.
8. Apply critical thinking skills to identify risks, implement solutions, analyze outcomes, and adapt to change within the dynamic field of Fire and Emergency Medical Services.
9. Utilize organizational and leadership skills to effectively identify and resolve conflict, solve problems, and adapt to a fast-paced dynamic work setting.


### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1320</td>
<td>Heavy Rescue</td>
<td>2</td>
</tr>
<tr>
<td>EMT-1330</td>
<td>Defensive Driving - EMT</td>
<td>1</td>
</tr>
<tr>
<td>FIRE-1100</td>
<td>Principles of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-1200</td>
<td>Principles of Fire and Emergency Services Safety and Survival</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-1500</td>
<td>Fire Behavior and Combustion</td>
<td>2</td>
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<tr>
<td>FIRE-2321</td>
<td>Fire Protection Systems</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
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#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1302</td>
<td>Emergency Medical Technician - Basic</td>
<td>6</td>
</tr>
<tr>
<td>EMT-130L</td>
<td>EMT Basic Practical Lab</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1401</td>
<td>Anatomy &amp; Physiology for Paramedics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2330</td>
<td>Paramedic Theory I</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>Paramedic Theory III</td>
<td>6</td>
</tr>
<tr>
<td>MATH-1xx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2340</td>
<td>Paramedic Theory II</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2360</td>
<td>Paramedic Theory IV</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></td>
<td></td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
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</table>

#### Summer Completion

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-2371</td>
<td>Paramedic Capstone Course</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></td>
<td></td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
<td>3</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

**Total Credit Hours**: **65**

---

1. BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics.

2. Consecutive eight-week course.

### Fire Technology, Associate of Applied Science

This program has been deleted effective Fall 2018. Students currently in the program have two years to complete this program until Summer 2020. After Summer 2020, degrees will no longer be granted for this program. Fire Academy coursework that applied to this program has been moved under the Fire-Emergency Medical Services program (p. 294). Current students should see a counselor to plan for program completion or transitioning into Associate of Applied Science in Fire-Emergency Medical Services.

**Program contact**: Learn more

Learn more here (p. 124) about how Fire Academy credits apply to the related degrees.

### Related Training and Credentials

- Fire Training Academy (p. 296)

### Fire Training Academy

**Program Description**

The Fire Fighter I & II training courses train individuals for entry-level positions in the exciting career of professional fire service. Training includes topics related to the requirements established by the Ohio Revised Code for Career Fire Fighters and the training and educational requirements identified in NFPA 1001. More than 200 cadets participate in this 260-hour course each year.

The Academy offers the following scheduling options:
With a student pass rate of 99 percent, Tri-C’s Fire Training Academy is one of the largest and most respected in Ohio and completion of an academy earns participants 13 credits towards a two-year Associate of Applied Science degree in Fire Technology or a two-year Associate of Applied Science Degree in Fire-Emergency Medical Services.

Upon completion students receive

- Certification in hazardous materials/WMD - Awareness and Operation levels
- 13 college credits toward Tri-C’s two year Associate of Applied Science degree in Fire Technology or a two-year Associate of Applied Science Degree in Fire-Emergency Medical Services.
- Courses completed during the training include: FIRE-1100 Principles of Emergency Services; FIRE-1200 Principles of Fire and Emergency Services Safety and Survival; FIRE-1500 Fire Behavior and Combustion; FIRE-2321 Fire Protection Systems; EMT-1310 Cardiopulmonary Resuscitation; EMT-1320 Heavy Rescue; and EMT-1330 Defensive Driving - EMT.
- The practical skills training required for firefighter certification.

At the conclusion of the training, all students take the State Firefighter 2 exam, which is administered on the last day of class. The exam is required for State of Ohio certification as a Level 2 firefighter.

Related Programs/Training

- Fire Technology (p. 124)
- Fire-Emergency Medical Services (p. 124)

Learn more about the Fire Training Academy and how to apply to the program.

FirstEnergy Power Systems Institute

PSI, Associate of Technical Study

Program description

Completion of the program prepares you for a job in the electric utility industry. PSI is a unique two-year program that combines classroom learning with hands-on training. Includes an internship during the first- and second-year terms. Upon completion, a student earns an Associate of Technical Studies degree that can lead to a career as a lineman.

Program cost

Selective admission program. FirstEnergy pays the tuition and associated fees and books for students who are accepted into the program.

Financial aid eligibility

This program is Federal Financial Aid/PELL eligible for those that qualify.

Scholarships, payment plans, and other financial aid options may be available. Please call 216-987-3064 for more information.

Related Programs/Training

- Electrical/Electronic Engineering Technology (p. 143)
- Integrated Systems Engineering Technology (p. 145)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about FirstEnergy Power Systems Institute PSI.

Fitness Specialist, Certificate of Proficiency

The Fitness Specialist Certificate of Proficiency is designed for those who wish to find or build upon a career in the growing fitness industry. Students will gain knowledge and develop hands-on, practical skills in basic exercise anatomy, exercise training techniques, fitness and wellness coaching, basic nutrition, sport injury care, fitness management, fitness assessments, and programming information for a variety of populations. After completing this program, students will have foundational knowledge to sit for a variety of accredited personal trainer certification examinations.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 133) about how certificate credits apply to the related degree.
• High School diploma/GED equivalency/approved College Credit Plus (CCP) student
• ENG-0990 Language Fundamentals II or appropriate score on English placement test.
• PE-1000 Personal Fitness or PE-1010 Personal Strength Development or verification of personal training or group fitness instructor certificate or previous exercise training experience.
• Verification of having completed a 4-8 hour observation where the candidate “shadows” a Fitness Professional in their work environment. See details in application packet.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively demonstrate and safely teach a variety of exercise modalities.
2. Effectively demonstrate and safely teach basic exercise sessions.
3. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.
4. Perform safe and ethical practices in a variety of sport, health and fitness-related settings within industry standards.
5. Demonstrate skill in designing, planning, marketing and administering effective fitness, recreational, sport, and wellness activities and programs.
6. Show proficiency in functional anatomy, exercise physiology, nutrition, weight management, health promotion, training instruction, health screenings, fitness assessments and exercise prescription to be prepared to sit for an accredited Personal Trainer certification exam.

Floorlaying, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor, scribes, cuts, fits, layout and seam tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more
Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
• Intent-to-hire agreement with participating contractor

Other Information
• Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.
2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.
3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.
4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.
5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.
6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>SES-1001</td>
<td>Introduction to Sport and Exercise Studies</td>
<td>2</td>
</tr>
<tr>
<td>SES-1040</td>
<td>Teaching Exercise Training Techniques</td>
<td>3</td>
</tr>
<tr>
<td>SES-1100</td>
<td>Fundamentals of Fitness and Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SES-1201</td>
<td>Fitness and Wellness Coaching</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td></td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td></td>
</tr>
<tr>
<td>HLTH-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td></td>
</tr>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES-2000</td>
<td>Essentials of Sports Injury Care</td>
<td>3</td>
</tr>
<tr>
<td>SES-2010</td>
<td>Exercise and Movement Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>SES-2300</td>
<td>Personal Training Certification Preparation</td>
<td>3</td>
</tr>
<tr>
<td>SES-2310</td>
<td>Advanced Training Concepts and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>SES-2350</td>
<td>Exercise for Special Populations</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 30

Program contact: Learn more
Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
• Intent-to-hire agreement with participating contractor

Other Information
• Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively demonstrate and safely teach a variety of exercise modalities.
2. Effectively demonstrate and safely teach basic exercise sessions.
3. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.
4. Perform safe and ethical practices in a variety of sport, health and fitness-related settings within industry standards.
5. Demonstrate skill in designing, planning, marketing and administering effective fitness, recreational, sport, and wellness activities and programs.
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Floorlaying, Certificate of Proficiency

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Program contact: Learn more
Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
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Program contact: Learn more
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Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
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Other Information
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Program contact: Learn more
Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
• Intent-to-hire agreement with participating contractor

Other Information
• Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively demonstrate and safely teach a variety of exercise modalities.
2. Effectively demonstrate and safely teach basic exercise sessions.
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Program contact: Learn more
Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
7. Work independently and in a team environment to accomplish the job in a timely and professional manner.
8. Sit for the install certification.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301</td>
<td>Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1450</td>
<td>Floorlaying Concepts</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1630</td>
<td>Wood Flooring I</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1640</td>
<td>Sheet Goods Concepts</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-xxxx</td>
<td>Floorlaying Elective</td>
<td>2</td>
</tr>
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</table>

Credit Hours: 10

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATFL-1300</td>
<td>Residential Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1600</td>
<td>Modular Tile</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1610</td>
<td>Jute &amp; Action Back Carpeting</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1620</td>
<td>Ceramics I</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1650</td>
<td>Sheet Goods - Flash Coving</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1720</td>
<td>Sheet Goods - Geometric Layout and Inlay</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1730</td>
<td>Unitary Back and Enhancer Back Carpeting</td>
<td>2</td>
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</table>

Credit Hours: 14

**Summer Completion**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATFL-2300</td>
<td>Ceramics II</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-2400</td>
<td>Sheet Goods-Specialty Products</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-xxxx</td>
<td>Floorlaying Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours: 6

Total Credit Hours: 30

Food and Beverage Operations, Certificate of Proficiency

This program provides all the basic, advanced skills, and practice needed to start a career as a professional Food and Beverage Manager. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 101) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Obtain an entry-level skill position in the food service industry.
2. Demonstrate customer service skills and professional and ethical conduct according to industry standards.
3. Apply proper sanitation principles to meet industry standards and government regulations.
4. Listen, speak, and communicate with team members to achieve customer satisfaction and operational success.
5. Participate in day-to-day operation of a food and beverage establishment.
6. Apply time management skills and principles of quality to daily work tasks.
7. Identify and explain the importance of diversity in the workplace.
8. Utilize the principles of purchasing and inventory control.
9. Apply standard Human Resources principles in regards to recruiting, retaining, and developing staff.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1360</td>
<td>Fundamentals of Restaurant/Food Service Management</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 15

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1650</td>
<td>Dining Room Operations</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1680</td>
<td>Beverage Management</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1950</td>
<td>Restaurant/Food Service Managament Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-2360</td>
<td>Restaurant Marketing</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2371</td>
<td>Restaurant/Foodservice Entrepreneurship</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 15

Total Credit Hours: 30
Frontline Manager Certificate Program

Program description
Frontline managers and supervisors play a vital role in business, supervising the employees who deliver the products and services your valued customers desire.

Investing in talent development, at this critical point, leads to improved supervisor effectiveness and engagement, increasing the likelihood of employee productivity, retention and engagement. A well-developed frontline workforce also provides a greater pool of candidates to fuel your talent pipeline as well as improved customer satisfaction and return business.

Corporate College offers the Frontline Manager Certificate Program to equip upcoming, new, and seasoned supervisors with the tools they need to succeed in their leadership roles. Facilitated by Corporate College leadership experts, participants will grow their abilities and earn their Frontline Manager Certificate upon the completion of ten half-day sessions.

Other important information
Take the following 10 courses to complete the certificate:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLDR-1211</td>
<td>Handling Conflict at Work</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1212</td>
<td>Effective Communication</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1213</td>
<td>Embracing Change at Work</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1214</td>
<td>Using Your Strengths</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1215</td>
<td>Becoming a Team Player</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1208</td>
<td>Prioritizing My Time</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1217</td>
<td>Professionalism</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1218</td>
<td>Dealing With Difficult People</td>
<td></td>
</tr>
<tr>
<td>ZLDR-1219</td>
<td>Delivering Great Customer Service</td>
<td></td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion for each course as well as Program Certificate

Related Programs/Training
- Organizational Effectiveness (Professional Development Programs)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)

To Register for and Learn more about Frontline Manager Certificate Program here and here

Fundamentals of Event Planning

Program description
Event planning as a profession is rapidly growing and, with the growth of Northeast Ohio’s hospitality industry, the demand for event planners is high. The recent opening of new hotels, restaurants and businesses have these growing businesses struggling to fill event planning roles that require certain specialized skills. In addition to the social market, planners are essential to corporations and non-profit organizations and many times, their employees are often tasked with planning events for their company, even if it's not part of their skill set. Corporate College's event planning courses offers you the opportunity to expand your expertise and gain the knowledge/skills to enter or grow in the Hospitality Industry and gain a certificate in our fast track program.

The program is designed to:
- Educate participants in the fundamentals and practical knowledge of event planning
- Provide you with the skills necessary for developing, planning, marketing and executing a successful event
- Explain how to advance your event planning career, including guidelines for career pathways and options that are available and steps to take to begin your own business

Other important information
This program is classroom-based and offers interactive instruction with hands-on creative activities, brainstorming sessions, volunteer opportunities and guest lecturers from the top hospitality professionals in the area.

Please visit our website here for more Event Planning course offerings.
Program Cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
• Hospitality Management (Lodging-Tourism Management) (p. 101)

To Register for and Learn more about Event Planning.

Game Design, Short-Term Certificate

The Game Design certificate provides students with a foundation focusing on the fundamentals of 2D and 3D Game Design for various platforms including console, computer and mobile devices. Completion of this certificate will provide students with applied experience utilizing industry standard tools and techniques to develop games for a broad audience.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 114) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply effective verbal, written and visual communication skills to present a game concept to potential clients and other designers.
2. Work independently and as a member of a design team to create a game within a time and defined parameters.
3. Use theories of game design to create an interactive experience and framework around a theme for a targeted/chosen audience.
4. Plan, design and build assets, mechanics and rules to assemble a playable prototype.
5. Develop, refine and evaluate the game with the appropriate digital or analog tools to produce the final product for a chosen gaming platform.
6. Deploy the game through appropriate channels.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1000 Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640 3D Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1200 Game Design I: Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1400 Game Design II: Game Engines</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 12

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIL-2040 3D Motion</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2271 2D Animation</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2200 Game Design III: Game Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2401 Game Design IV-Game Publishing</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 12

Total Credit Hours 24

Garden Center, Short-Term Certificate

This two semester certificate program offers garden center management skills to persons who are seeking a career in retail garden center operations but who may not desire a full degree. The certificate is also helpful to those already employed in landscape or other green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Garden Center Short-Term Certificate features course work in such horticulture basics as plant identification, and current landscape practices as well as essential business aspects of retailing in the green industry.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 176) about how certificate credits apply to the related degree.

Gainful Employment Disclosure
Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information

- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.
2. Assist clients and customers with plant related problems and propose related solution(s).
3. Effectively communicate with customers, staff members, and managers and provide exceptional customer service.
4. Use merchandising and selling techniques within a retail atmosphere.
5. Analyze all aspects of financial management of garden center and create sound business plans and strategies.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1331</td>
<td>Plant Propagation</td>
<td>3</td>
</tr>
<tr>
<td>PST-1400</td>
<td>Garden Center and Nursery Management</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>PST-1321</td>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1351</td>
<td>Plant Production</td>
<td>3</td>
</tr>
<tr>
<td>PST-2321</td>
<td>Plant Pest Diagnostics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 22

General Nutrition, Certificate of Proficiency

Designed for individuals and allied health care professionals who are interested in learning more about basic nutrition, but are not interested in pursuing a Dietetic Technology degree. This certificate focuses on wellness and disease prevention through proper nutrition and eating behaviors. Students earning this certificate are not qualified to practice medical nutrition therapy, as stated by the State of Ohio.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Gainful Employment Disclosure

Program Admission Requirements

- Completion of Health Careers Application.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- 10 Students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- Eligibility for BIO-2331 Anatomy and Physiology I (appropriate score on Biology placement test or BIO-1100 Introduction to Biological Chemistry with "C" or higher).

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Develop knowledge of evidence based nutrition information focusing on wellness and prevention.
2. Locate and validate evidence based research.
3. Apply knowledge of mathematics to develop and analyze recipes.
Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>DIET-1320</td>
<td>Nutrition Applications</td>
<td>1</td>
</tr>
<tr>
<td>DIET-xxxx</td>
<td>DIET Elective</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
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</tbody>
</table>

Credit Hours: 17

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>DIET-2410</td>
<td>Life Cycle Nutrition - Pregnancy and Lactation</td>
<td>1</td>
</tr>
<tr>
<td>DIET-2420</td>
<td>Life Cycle Nutrition - Nutrition for Children</td>
<td>1</td>
</tr>
<tr>
<td>DIET-2430</td>
<td>Life Cycle Nutrition - Nutrition through Adulthood</td>
<td>1</td>
</tr>
<tr>
<td>DIET-xxxx</td>
<td>DIET Elective course</td>
<td>2-3</td>
</tr>
<tr>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
<td>3</td>
</tr>
<tr>
<td>SES-1201</td>
<td>Fitness and Wellness Coaching</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 15-16

Total Credit Hours: 32-33

1 MATH-1240 Contemporary Mathematics recommended for students who plan to apply credits to Dietetic Technology Degree program.

Glazing, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. Glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements

- Aptitude test - Contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Interpret drawings and use principles of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.
7. Sit for welding certification as it relates to the glazing industry.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-1330</td>
<td>Hand Tools for Glaziers</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-1620</td>
<td>Glass and Mirror Replacement and Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-1630</td>
<td>Basic Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1300</td>
<td>Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320</td>
<td>Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-xxxx</td>
<td>ATGL Elective course</td>
<td></td>
</tr>
<tr>
<td>ATPTxxxx</td>
<td>ATPT Elective course</td>
<td></td>
</tr>
<tr>
<td>ATDW-xxxx</td>
<td>ATDW Elective course</td>
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Credit Hours: 13

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-1640</td>
<td>Door Fabrication and Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-2330</td>
<td>Transits, Leveling Instruments, and Lasers</td>
<td>2</td>
</tr>
<tr>
<td>ATGL-2350</td>
<td>Curtainwall Fabric &amp; Install</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1650</td>
<td>Blueprints I: Construction Fundamentals</td>
<td>2</td>
</tr>
</tbody>
</table>
Related Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Comprehensive Professional Medical Coding (Classroom) (p. 242)
- Comprehensive Professional Medical Coding (Online) (p. 243)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Program Admission Requirements

Applications may be submitted after meeting admissions requirements, or when student is enrolled in the final admissions requirements course(s). Students must request an application packet from the Health Careers Enrollment Center 216-987-4247 for comprehensive admissions and program information. The form may also be downloaded and printed from the Health Careers website, completed by hand, scanned and emailed back to the Health Careers Enrollment Center.

- High School Diploma/GED.
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "B" or higher.
- Completion of MATH-0955 Beginning Algebra with "C" or higher, or appropriate placement score to enroll in 1000-level Mathematics.
- Complete the following:
  - BIO-2331 Anatomy and Physiology I with "B" grade or higher
  - IT-1090 Computer Applications with "B" grade or higher
  - MA-1010 Introduction to Medical Terminology with "B" grade or higher
  - HTEC-1120 Critical Thinking in Healthcare or PHIL-1000 Critical Thinking with "B" grade or higher
- GPA required: 3.00 admission requirements. 2.50 overall.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as evidenced in the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html

To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

Other Information

- 30 students accepted per year.
- Admission courses may be repeated multiple times to achieve the "B" grade or higher.
- HIM courses may only be repeated once to improve a grade.
- Criminal background check required.
- Biology courses are acceptable for HIM program admittance for 5 years.
- HIM courses expire after one year of absence from the program and will need to be repeated if student requests re-admittance to the degree program.
- Students who withdraw from or leave the Health Information Management Technology Program for any amount of time will have to reapply for admission and will be required to repeat all HIM courses previously taken.
• Upon acceptance into program and prior to clinical practice, student must submit evidence of good health.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.
2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.
3. Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.
4. Use a variety of techniques to problem solve and arrive at best outcome.
5. Apply regulatory and accreditation standards to identify and support documentation compliance.
6. Apply hospital policies, federal regulations and/ or state statutes in the release and management of protected health information (PHI).
7. Identify areas of quality assurance/Continuous Quality Improvement (CQI) that relate to risk management, utilization review and documentation compliance.
8. Apply skills to find, build, research, manage and report both electronic and paper data.
9. Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the health care delivery system.
10. Utilize knowledge and skills of anatomy and physiology (A&P), medical terminology, pharmacology, pathophysiology, code sets, reimbursement methodologies and regulations to analyze clinical documentation to accurately and thoroughly assign respective code sets for entity's database and third party reimbursement.
11. Apply skills to find, build, restart and manage the system.
12. Apply management skills for the daily operations of Health Information Management department related entity.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331 Anatomy and Physiology I ¹</td>
<td>4</td>
</tr>
<tr>
<td>HTEC-1120 Critical Thinking in Healthcare 1,2</td>
<td>1</td>
</tr>
<tr>
<td>MA-1010 Introduction to Medical Terminology 1,3</td>
<td>2</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010 College Composition I ¹</td>
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</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications ¹</td>
<td></td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>13</td>
</tr>
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</table>

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HIM-1301</td>
<td>Introduction to Health Information Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM-1311</td>
<td>Legal Aspects of Health Care</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-1401</td>
<td>Systems in Healthcare Delivery</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2600</td>
<td>Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>HIM-1411</td>
<td>Healthcare Statistical Applications &amp; Research</td>
<td>2</td>
</tr>
<tr>
<td>HIM-1423</td>
<td>Health Data Documentation, Sources and Classification Systems</td>
<td>3</td>
</tr>
<tr>
<td>HIM-1432</td>
<td>Computer Systems in Health Information Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM-2160</td>
<td>Coding with ICD-10-CM</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
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</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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</table>

**Summer Session**

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-2130</td>
<td>Coding with CPT (Current Procedural Terminology)</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2410</td>
<td>Management Practices in Health Information</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>4</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-2200</td>
<td>Project Management for the Health Information Management Professional</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2260</td>
<td>Coding with ICD-10-PCS</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2312</td>
<td>Quality Assessment and Improvement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>7</strong></td>
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**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-2401</td>
<td>Intermediate Coding</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2430</td>
<td>Medical Reimbursement Methodologies</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2441</td>
<td>Project Management Capstone</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2851</td>
<td>Practicum I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>9</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** | **64**

1 Grade of B or better in course.
2 PHIL-1000 Critical Thinking may be taken in place of HTEC-1120 Critical Thinking in Healthcare.
3 MA-1020 Medical Terminology I will be accepted in place of MA-1010 Introduction to Medical Terminology.
Health Unit Coordinator, Short-Term Certificate

A Health Unit Coordinator (HUC) is an essential member of a health care team with nonclinical responsibilities who manages all nonclinical tasks on hospital nursing units. Responsibilities include coordinating the activities of the nursing staff, doctors, hospital diagnostic departments, patients, and the visitors to the nursing unit. Health Unit Coordinators are skilled in transcribing physician orders for patient treatment, preparing patient charts, maintaining statistical reports, and much more. It is one of the more key positions on the nursing unit. Health Unit Coordinators may also be employed in emergency departments, doctor’s offices, clinics, ambulatory surgery centers and long-term care facilities to assist the nursing staff with clerical duties related to patients health records’ and coordination of treatment.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 124) about how certificate credits apply to the related degree and about related training programs.

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- ENG-1010 College Composition I.
- MA-1020 Medical Terminology I.
- IT-1090 Computer Applications.
- Time limit on admissions requirements prior to application is two years.
- GPA required: 2.0.
- Number of students accepted per year is based on openings available in the course cap as offered for Health Unit Coordinator (HIM-1060 Health Unit Coordinator).
- MA-1020 Medical Terminology I and MA-2010 Medical Terminology II must be completed within three years of program completion if not using Medical Terminology in current work environment.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.
2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.
3. Conduct yourself ethically and professionally according to the National Association of Health Unit Coordinators (NAHUC) code of ethics and standards of practice.
4. Use a variety of techniques to problem solve and arrive at best outcome.
5. Follow regulatory, legal and accreditation standards when performing day to day activities.
6. Find, file/enter and maintain the integrity of patient records both paper and electronic format.
7. Use word processing, spreadsheets, email and health care software to coordinate patient care services.
8. Coordinate the daily operation of the Health Care Unit.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1020 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>First Semester</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>HIM-1060 Health Unit Coordinator</td>
<td>3</td>
</tr>
<tr>
<td>MA-2010 Medical Terminology II</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
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</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

1 In order to be awarded this certificate, a grade of “C” or higher must be earned in all required courses.

Home Inspector Training

Program Description

This one of a kind course is designed to provide a five day training boot camp that teaches the proper process of a Home Inspection and assist you with establishing your own small business providing Home Inspections. This unique hands-on approach will include classroom...
props, live inspections on real homes as well as community guest speakers. A Cleveland area Realtor will also present on how to gain referrals and market to real estate brokers and agents. Hands on field training, along with learning how to obtain clients and make more money are the building blocks that differentiate this Home Inspection training boot camp from other courses.

**Program cost**
Visit the Corporate College website here for pricing.

**Financial aid eligibility**
This program is **not** Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**
Certificate of Completion

To Register for and Learn more about Home Inspector Training

**Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business**

The culinary arts curriculum follows the guidelines of the American Culinary Federation and is accredited by the American Culinary Federation Accreditation Commission. The culinary concentration has three major components: hands-on food preparation, kitchen management and supervision, and academic. The culinary concentration emphasizes hands-on food preparation, including advanced techniques in garde-manger, baking, contemporary and classical cuisine and banquet management. The kitchen management and supervision component emphasizes menu planning for healthy living utilizing locally grown, sustainable agriculture, purchasing, cost control and profitability, human resource training and supervision, and facilities management. The academic component helps prepare the student for critical thinking, decision making, customer service, communication skills and cultural awareness. This program provides all the basics for the beginner and all of the advanced management skills for those who have worked in the culinary field at line-level positions. Practical industry related experiences are included.

**Program contact:** Learn more

This program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 100) about how certificate credits apply to the related degree and about other related programs.

**Related Degrees and Certificates**
- **Hospitality Management (Hotel, Destination, and Event Management), Associate of Applied Business** (p. 308)
- **Hospitality Management (Restaurant/Food Service Management), Associate of Applied Business** (p. 309)
- **Event Planning, Short-Term Certificate** (p. 291)
- **Food and Beverage Operations, Certificate of Proficiency** (p. 299)
- **Lodging Rooms Division, Certificate of Proficiency** (p. 331)
- **Personal Chef, Certificate of Proficiency** (p. 382)
- **Professional Baking, Certificate of Proficiency** (p. 398)
- **Professional Culinarian/Cook, Certificate of Proficiency** (p. 399)

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply proper sanitation principles to meet industry standards and government regulations, and successfully complete ServSafe Certification Exam.
2. Utilize leadership and management skills by applying standard HR principles in regards to recruiting, retaining, and developing staff requiring interpersonal interaction, motivation, decision-making, to support the organization and its goals.
3. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience.
4. Obtain an entry-level skill position in the hospitality industry.
5. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.
6. Use culinary math and measurements to convert and modify basic recipes.
7. Use a computer to prepare correspondence, menus, daily logs, order sheets and prep lists.
8. Apply and demonstrate culinary knowledge and skills with consistency using established ACF standards within the industry and facility.
9. Demonstrate creativity, flexibility, and physical stamina in order to succeed in the culinary industry.
10. Develop menus & recipes for healthy living utilizing sustainable and local agriculture.
11. Use advanced knowledge and skills in product receiving, utilization, fabrication, and presentation while maintaining quality control.
12. Develop schedules and manage time, inventory, and costs.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
</tbody>
</table>

Cuyahoga Community College 2019-2020 Catalog
Select one of the following:  
ENG-1010  College Composition I  
ENG-101H  Honors College Composition I  

Credit Hours  15

Second Semester
DIET-1200  Basic Nutrition  
HOSP-1451  Contemporary Cuisine  
HOSP-2700  Hospitality Purchasing  

Select one of the following:  
ENG-1020  College Composition II  
ENG-102H  Honors College Composition II  

Select one of the following:  
IT-1090  Computer Applications  
IT-109H  Honors Computer Applications  

Credit Hours  15

Summer Session
HOSP-1940  Culinary Arts/Professional Baking Field Experience  
MATH-1xxx  1000-level MATH course or higher (p. 28)  

Credit Hours  4

Third Semester
HOSP-1650  Dining Room Operations  
HOSP-1940  Culinary Arts/Professional Baking Field Experience  
HOSP-2330  Menus and Facilities Planning & Design  
HOSP-2350  Restaurant Operations  
HOSP-2500  Hospitality Cost Control  
HOSP-2560  Garde Manger  

Credit Hours  15

Fourth Semester
HOSP-2400  Hospitality Management and Supervision  
HOSP-2651  Banquet Management and Production  
HOSP-2992  Culinary Evaluation and American Regional Cuisine  
HOSP-xxxx  HOSP elective course  
Arts and Humanities/Social and Behavioral Science requirements (p. 28)  

Credit Hours  14-15

Total Credit Hours  63-64

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>HOSP-1710</td>
<td>Doing Business as a a Personal Chef</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1730</td>
<td>International Cuisine</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2550</td>
<td>Baking Production and Sales II</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2750</td>
<td>Culinary Competition</td>
<td>2</td>
</tr>
</tbody>
</table>

Hospitality Management with a Concentration in Hotel, Destination & Event Management, Associate of Applied Business

The Lodging/Tourism Management concentration prepares students for entry-level supervision in front office, sales and convention management. This leads to increasingly responsible management positions in hotels, motels and clubs. Included is a minimum component of food service and observations of front-office and sales/marketing and convention planning functions. This program is accredited by the Accreditation Commission on Programs in Hospitality Administration (ACPHA) Programs. Practical industry related experiences are included.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 101) about how certificate credits apply to the related degree and other related programs.

Related Degrees and Certificates

- Hospitality Management (Restaurant/Food Service Management), Associate of Applied Business (p. 309)
- Hospitality Management (Culinary Art), Associate of Applied Business (p. 307)
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinary/Cook, Certificate of Proficiency (p. 399)

Training and Credentials

- Event Planning (p. 300)

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply proper sanitation principles to meet industry standards and government regulations, and successfully complete ServSafe Certification Exam.
2. Utilize leadership and management skills by applying standard HR principles in regards to recruiting, retaining, and developing staff requiring interpersonal interaction, motivation, decision-making, to support the organization and its goals.

3. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience.

4. Obtain an entry-level skill position in the hospitality industry.

5. Demonstrate customer service skills and professional and ethical conduct according to appropriate industry/workplace standards.

6. Demonstrate an understanding of basic culinary competencies.

7. Acquire and correctly use general industry information, computer and technical skills, and certifications for employment in the hospitality industry.

8. Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.

9. Use organization and flexibility to complete tasks, make decisions, and problem solve in a unique timely manner with attention to detail in an unpredictable environment.

**Suggested Semester Sequence**

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1481</td>
<td>Housekeeping and Facilities Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1540</td>
<td>Lodging Operations Lab</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-1580</td>
<td>Front Office Operations</td>
<td>2</td>
</tr>
<tr>
<td>Arts and Humanities requirements (p. 28)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
</tbody>
</table>

### Summer Session

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1960</td>
<td>Lodging/Tourism Field Experience</td>
<td>1</td>
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</table>

### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1380</td>
<td>Dimensions of Tourism</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2480</td>
<td>Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
</tr>
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</table>

### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2380</td>
<td>Hospitality Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2580</td>
<td>Convention Management and Meeting Planning</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2862</td>
<td>Lodging and Tourism Management Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

Arts and Humanities requirements (p. 28) | 3

The Associate Degree in Restaurant and Food Service Management provides the education, experience and skills needed to begin a successful management career in the hospitality industry. Graduates are well prepared to enter as a supervisor or management candidate in restaurants, hotel food and beverage departments or commercial/contract food service operations including positions such as kitchen managers, dining room managers, banquet managers, purchasing agents, and restaurant/food service managers. Coursework includes an emphasis on management and supervision, menu planning, purchasing, cost control, marketing, entrepreneurship, beverage management, and human resources training. The curriculum also includes skill training, business and management techniques, critical thinking, decision-making, customer service, communication and cultural awareness skills. In addition to classroom instruction, students get hands-on restaurant management experience in both the kitchen and dining rooms of our student-run restaurant as well as practical industry experience.

**Program contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 101) about how certificate credits apply to the related degree.
Related Degrees and Certificates

- Hospitality Management (Hotel, Destination, and Event Management), Associate of Applied Business (p. 308)
- Hospitality Management (Culinary Art), Associate of Applied Business (p. 307)
- Event Planning, Short-Term Certificate (p. 291)
- Food and Beverage Operations, Certificate of Proficiency (p. 299)
- Lodging Rooms Division, Certificate of Proficiency (p. 331)
- Personal Chef, Certificate of Proficiency (p. 382)
- Professional Baking, Certificate of Proficiency (p. 398)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 399)

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Obtain an entry-level skill position in the food service industry.
2. Apply proper sanitation principles to meet industry standards and government regulations, and successfully complete ServSafe Certification Exam.
3. Utilize the principles of purchasing and inventory control.
4. Apply standard HR principles in regards to recruiting, retaining, and developing staff.
5. Demonstrate an understanding of basic culinary competencies.
6. Utilize time management and decision-making skills and display effective customer service, teamwork and communication in a day-to-day restaurant/foodservice establishment.
7. Achieve appropriate management goals in a restaurant/foodservice operation.
8. Demonstrate understanding of the principles of safe and responsible alcohol service and successfully complete ServSafe Alcohol certification exam.
9. Demonstrate principles of the production and service of standard alcoholic and non-alcoholic beverages for a restaurant/foodservice beverage program.
10. Develop an original restaurant/foodservice concept including facilities design, menu development, business plan and pro forma income statements.
11. Apply standard principles of restaurant/foodservice marketing.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1360</td>
<td>Fundamentals of Restaurant/Food Service Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-1680</td>
<td>Beverage Management</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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</table>

Summer Session

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1950</td>
<td>Restaurant/Food Service Management Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1650</td>
<td>Dining Room Operations</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2350</td>
<td>Restaurant Operations</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
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</tbody>
</table>

Arts and Humanities Requirements (p. 28)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
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<tbody>
<tr>
<td>HOSP-2371</td>
<td>Restaurant/Foodservice Entrepreneurship</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2360</td>
<td>Restaurant Marketing</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2871</td>
<td>Food &amp; Beverage Management Experience</td>
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</table>

Social and Behavioral OR Natural and Physical Science Requirement (p. 29)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3</td>
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</tbody>
</table>

Total Credit Hours: 62

Human Services, Associate of Applied Science

Alcohol/Chemical Dependency Option

The Alcohol/Chemical Dependency Option of the Human Services program provides students with competencies that enable them to work with people who are chemically dependent. Career opportunities for graduates include employment in a variety of settings ranging from in-patient programs to community-based outpatient and prevention programs. Students in the program can qualify for Chemical Dependency Counselor Assistant (CDCA) certification after taking three credit hours.
in chemical dependency course work. Graduates of the program receive a significant number of board recognized hours toward the Licensed Chemical Dependency Counselor II (LCDCII) educational requirements and are prepared for the licensure exam for LCDC II administered by the Ohio Chemical Dependency Professionals Board (OCDP).

**Generalist Option**

The Generalist Option of the Human Services program provides students with competencies which enable them to work with a variety of people that have various needs. Career opportunities for graduates are in community-based programs which emphasize practical approaches to problem solving. All graduates of the Human Services program are eligible to receive certification as a Social Work Assistant from the Counselor, Social Worker and Marriage and Family Therapist Board of Ohio.

**Program contact:** Learn more

**Program Admission Requirements**

- High School Diploma/GED highly recommended, but not required.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- Complete the following in sequence: HS-1101 Foundation of Substance Abuse, Addiction, and Group Work, HS-1300 Introduction to Human Services and HS-1850 Introduction to Human Services Principles and Practices. (A grade of "C" or higher is required in each course.)

**Other Information**

- Human Services students must sign and abide by the Human Services Student Handbook.
- Students in the Human Services Program must achieve a grade of "C" or better in all HS AND general education coursework in order to fulfill the graduation requirements for the Human Services Program.
- Requirements listed are the same for both Generalist and Alcohol/Chemical Dependency options.
- Schedule must be approved by HS faculty advisor prior to resignation for second semester and beyond.
- Non-majors may enroll in HS courses for which they have satisfied the prerequisite requirements.
- Students re-entering a clinical practicum course after an absence of one year or more from the Human Services Program will be required to complete another BCI. Log onto: [http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html](http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html).

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. **Ethics/Professionalism.** Conduct oneself in a professional manner and apply sound ethical practices according to the Ohio Counselor, Social Worker and Marriage and Family Therapist Board and the Ohio Chemical Dependency Professionals Board. Maintain any licensure or certification obtained.

2. **Lifelong Learning.** Develop and promote healthy practices, self-awareness and self-care, applying this personally, with clients, colleagues and other professionals.

3. **Case Management.** Listen, speak and contribute to the quality of life of our clients through comprehensive holistic service delivery according to specific agency policies and procedures.

4. **Documentation.** Apply/utilize written and computer skills to maintain appropriate client and agency reports, records and documents, especially the ability to navigate and effectively use Electronic Medical Records (EMR) in a clinical setting.

5. **Communication.** Employ and interpret clear, concise and open communication skills including verbal, non-verbal and written communication in a professional manner.

6. **Human Services Concepts.** Understand the history, philosophy, theoretical concepts/frameworks and clinical intervention skills related to Human Services professionals.

7. **Human Services Practices.** Engage in practices and techniques that encompass group facilitation, psycho-social assessment, behavior change and motivating practices working with diverse client populations.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1101</td>
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<td>HS-1300</td>
<td>3</td>
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<td>Select one of the following:</td>
<td></td>
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<tr>
<td>ENG-1010</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
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<tr>
<td>PSY-1010</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>13</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1850</td>
<td>5</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>3</td>
</tr>
<tr>
<td>HS-1120</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1020</td>
<td>3</td>
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<tr>
<td>ENG-102H</td>
<td>3</td>
</tr>
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<td>Select one of the following options:</td>
<td></td>
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<tr>
<td>Option A</td>
<td></td>
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<tr>
<td>HS-1200 &amp; HS-1210</td>
<td>4</td>
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<tr>
<td>Option B</td>
<td></td>
</tr>
<tr>
<td>HS-1220</td>
<td>3</td>
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<tr>
<td>Credit Hours</td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-2600</td>
<td>4</td>
</tr>
<tr>
<td>HS-2850</td>
<td>5</td>
</tr>
<tr>
<td>Select one of the following options:</td>
<td></td>
</tr>
<tr>
<td>Option A</td>
<td></td>
</tr>
</tbody>
</table>
### Industrial Automation

**Program description**
Participants receive hands-on training and knowledge in the skills needed to maintain, install and troubleshoot today’s automated systems in business and industry. Learn more here (p. 210) about required coursework.

**Program cost**
Approximately $4,000

**Financial aid eligibility**
This program is **not** Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**
Certificate of Proficiency in Automation Maintenance Technician.

**Related Programs/Training**
- Integrated Systems Engineering Technology (p. 147)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Industrial Automation

### Industrial Management Technology, Certificate of Proficiency

The certificate in Industrial Management Technology is designed for students seeking an entry level position in the area of logistics and manufacturing operations. Students are introduced to technology related operations, engineering drawings, and industrial logistics of manufacturing. Application of math, communication, and science principles.
Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 148), here (p. 149), and here (p. 150) about how certificate credits apply to the related degree.

**Program Admission Requirements**

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
4. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. Excel, Access)
5. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>MET-1100 Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120 Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230 Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-1631 Industrial Supply Logistics</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>MATH-1530 College Algebra</td>
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<tr>
<td>MATH-153H Honors College Algebra</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>PSY-1010 General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
</tr>
</tbody>
</table>

**Industrial Welding, Certificate of Proficiency**

This program provides basic training for students who want to acquire the fundamental skills of Stick, MIG, TIG, and OxyFuel welding and introduces additional industry technologies: programming of welding robots, fabrication, nondestructive testing techniques, metallurgy, and workplace safety. Students have the potential to earn three nationally recognized certifications. At the conclusion of the MIG, TIG, and Stick welding classes, students submit a test piece (between 1F and 4G) for American Weld Society (AWS) certification evaluation.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 145) and here (p. 171) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure**

**Program Admission Requirements**

- High School Diploma/GED
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:
1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Apply TIG, MIG, and Stick processes to join metal.
4. Apply oxygen and fuel cutting skills.
5. Add and subtract decimals and fractions and convert decimals to fractions.
6. Train operators, troubleshoot equipment, analyze root causes and identify corrective actions of weld issues.
7. Work with production and engineering teams to develop equipment and processes for product development, production needs, and customer expectations.
8. Use practical knowledge/experience of fabricating, blue print reading, and welding skills to complete most welding projects.

### Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COMM-1000</td>
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</tr>
<tr>
<td>HLTH-1230</td>
<td>1</td>
</tr>
<tr>
<td>ISET-1101</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2100</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2120</td>
<td>4</td>
</tr>
<tr>
<td>MET-1300</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>18</strong></td>
</tr>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ISET-2110</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2131</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2140</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2151</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2160</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
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</tr>
</tbody>
</table>

**Total Credit Hours**: 37

### Information Technology - Business Solutions, Associate of Applied Business

The Associate of Applied Business degree in Information Technology (Business Solutions) integrates technology, business, marketing, critical thinking, communication, team work and problem solving with a co-op to prepare for an entry level job in Business Solution Development or, for the progression to a four year degree.

### Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra with "C" or higher or appropriate score on Math Placement Test.

### Other Information

- Requires students to participate in several co-op experiences.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.
2. Operate in a diverse team environment with professionalism, integrity and accountability.
3. Adapt to change within their profession by demonstrating a commitment to continuous learning.
4. Apply foundational business management concepts, supply chain management principles, marketing and sales functions, and financial and accounting skills to interface between IT development and the stakeholder to meet or exceed their expectations.
5. Plan, organize and prioritize tasks in order to meet project deadlines.
6. Effectively utilize personal management skills, problem solving, and knowledge of the organization to identify and improve an organization's performance.
7. Leverage electronic technology and integrate with existing systems to solve business problems.
8. Develop, test, implement and maintain program interfaces (such as websites), supporting structures (such as back-end databases), and delivery platforms.

### Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025 Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050 Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000 Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td><strong>Select one of the following:</strong></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1311 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>IT-1150 Introduction to Web Programming</td>
<td>3</td>
</tr>
</tbody>
</table>
Information Technology - Cybersecurity, Associate of Applied Business

Students will prepare for careers dealing with networking and system administration fundamentals, with the primary focus being defensive strategies to securing networks and systems. Skills acquired will assist students in preparing to take nationally and internationally recognized industry certification exams.

Program contact: Learn more

Related Degrees and Certificates
- Cybersecurity Post-Degree Professional Certificate (p. 258)

Program Admission Requirements
- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra with "C" or higher or appropriate score on Math Placement Test.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Take continuous, pro-active measures to intimately know and understand the complete physical and logical structure of your network so that during normal operations and monitoring, security issues can be quickly identified, isolated and resolved, including measures to prevent future occurrences.
2. Apply fundamental concepts of operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain, and support hardware and software to ensure efficient and effective business operations.
3. Apply principles of security to install, configure, maintain, and secure business operations.
4. Explain what a risk assessment is, what types of assessments there are and how it can impact an organization. Also explain drivers to information security policy/standard development, security governance, compliance to external regulation and internal policies and standards.
5. Identify common industry security frameworks and explain why these exist. (NIST, Cyber Security Framework, CYBER, COBIT, ISO27001, etc.)

---

1 Students who do not place into MATH-1410 Elementary Probability and Statistics I on the assessment test must take MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

2 Cannot also be selected to fulfill open Business Elective.
6. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to reduce risk in business operations.
7. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with diverse audiences to provide high level customer service to internal and external constituents at all levels in the organization.
8. Work independently and effectively within a team to meet the needs of the organization.
9. Operate within diverse business cultures with professionalism, integrity and accountability.
10. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
11. Plan, organize, and prioritize tasks in order to meet project deadlines.
12. Understand and apply legal, privacy, and ethical concepts; recognize and assess legal, privacy, and ethical issues; and demonstrate ethical, privacy, and legal behavior.

Suggested Semester Sequence

**Summer Start**

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
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**First Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>IT-2740</td>
<td>Fundamentals of Client Operating Systems and Hardware for Cybersecurity</td>
<td>4</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
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Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
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**Second Semester**

<table>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-1070</td>
<td>Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2320</td>
<td>Network Administration I</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2370</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2380</td>
<td>Linux Administration</td>
<td>3</td>
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**Third Semester**

<table>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EET-1302</td>
<td>Cisco I: Basic Networking Technologies</td>
<td>3</td>
</tr>
<tr>
<td>EET-1312</td>
<td>Cisco II Basic Routing and Switching</td>
<td>3</td>
</tr>
<tr>
<td>IT-2750</td>
<td>Scripting Fundamentals for Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science (lecture)</td>
<td>(p. 29)</td>
<td>3</td>
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Select one of the following:

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<th>Code</th>
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<tbody>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td>3</td>
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**Fourth Semester**

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<tr>
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<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>IT-2710</td>
<td>Advanced Topics in Network Security</td>
<td>3</td>
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Select one of the following:

<table>
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<tbody>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2022H</td>
<td>Honors Ethics</td>
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Select one of the following:

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<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>ITNT-2xxx</td>
<td>2000-level ITNT elective course</td>
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**ELECTIVES**

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<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>IT-2720</td>
<td>Ethical Hacking and Systems Defense</td>
<td>3</td>
</tr>
<tr>
<td>IT-2730</td>
<td>Intrusion Detection/Prevention Systems Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2420</td>
<td>Network Administration II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Information Technology - Networking Software, Associate of Applied Business**

Students will be prepared for careers dealing with network software systems analysis, planning and implementation to create, manage and support networks. Students will gain the necessary skills to analyze network system needs for design, installation, maintenance and management of network software systems. Skills acquired will assist students in preparing to take industry certification exams.

**Program contact:** Learn more

Learn more (p. 155) about how certificate credits apply to the related degree and about related training programs.

**Related Degrees and Certificates**

- Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science (p. 276)
- Cisco, Short-Term Certificate (p. 236)
Related Training and Credentials

- Cisco Technical Training Institute (p. 235)
- CompTIA Certified Computer Support Specialist (p. 243)

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information

- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in-person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Apply principles of networking software to design, install, configure, and maintain secure, fault tolerant operation within a server based network environment, including local and remote access.

Suggested Semester Sequence

Summer Start

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td></td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1035</td>
<td>Operating Systems and Software for PC Technicians</td>
<td>4</td>
</tr>
<tr>
<td>EET-1055</td>
<td>Computer Hardware Support</td>
<td>4</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2320</td>
<td>Network Administration I</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 28)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
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<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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Third Semester

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2370</td>
<td>Network Security Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2380</td>
<td>Linux Administration</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
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</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2990</td>
<td>Networking Capstone</td>
<td>3</td>
</tr>
<tr>
<td>ITXX-2xxx</td>
<td>2000 level ITNT elective</td>
<td>1-3</td>
</tr>
<tr>
<td>Natural and Physical Sciences requirement (p. 29)</td>
<td>3</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ITNT-2420</td>
<td>Network Administration II</td>
<td>3</td>
</tr>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
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</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITNT-2420</td>
<td>Network Administration II</td>
<td>3</td>
</tr>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
</tbody>
</table>
Information Technology - Programming and Development, Associate of Applied Business

Programmers, developers and software engineers design and develop many types of software, including computer games, business applications, operating systems, network control systems, and middleware. Students develop competencies in designing, implementing, integrating and maintaining software systems (including mainframes, websites, etc) using a variety of languages and technologies. Skills acquired will assist students in preparing to take industry positions including, but not limited to, customer support, testing, programming and product development.

Skills acquired prepare students to take industry certification.

**Program contact:** Learn more

Learn more (p. 155) about how certificate credits apply to the related degree and about related training programs.

**Related Degrees and Certificates**
- Mobile Application Development, Short-Term Certificate (p. 424)
- Web Application Development, Short-Term Certificate (p. 424)
- .NET Programming, Post-Degree Professional Certificate (p. 177)
- Information Technology, Programming and Development, Post-Degree Professional Certificate (p. 320)

**Related Training and Credentials**
- Cleveland Codes Tri-C Software Developers Academy (p. 238)

**Program Admission Requirements**
- High School Diploma/GED not required, but highly recommended
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test.

**Other Information**
- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills to interview and educate stakeholders.
2. Operate in a diverse team environment with professionalism, integrity and accountability.
3. Explain and implement technologies that are impacted by legal and ethical issues.
4. Plan, organize and prioritize tasks in order to meet project deadlines.
5. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.
6. Apply knowledge of organizational structures, models, processes, procedures, rules and distribution of power and authority in order to function as an effective IT resource that meets organizational goals.
7. Apply knowledge of programming, website maintenance, operating systems, networking and security to install, configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.
8. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and use appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing). Work as part of a development team using industry standards and guidelines.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>IT-1025 Information Technology Concepts for Programmers</td>
<td>3</td>
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<tr>
<td>IT-1050 Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td></td>
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<tr>
<td>COMM-101H Honors Speech Communication</td>
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<tr>
<td><strong>Total</strong></td>
<td>15</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1150 Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT-2650 Java Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2700 Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xx 1000-level MATH course or higher (p. 28)</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>BADM-2010 Business Communications</td>
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<tr>
<td>BADM-201H Honors Business Communications</td>
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<table>
<thead>
<tr>
<th>Summer Session</th>
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<tbody>
<tr>
<td>Select one of the following:</td>
<td>1-3</td>
</tr>
<tr>
<td>IT-2830 Cooperative Field Experience</td>
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</tr>
<tr>
<td>ITNT-2300 Networking Fundamentals</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2320 Interactive Internet Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2351 Enterprise Database Systems</td>
<td>4</td>
</tr>
</tbody>
</table>
Information Technology-Business Solutions, Post-Degree Professional Certificate

Nearly all organizations rely on computer and information technology (IT) to conduct business and operate efficiently. Business Solutions Developers (also called Computer Systems Analysts and Systems Analysts) use IT tools to help organizations of all sizes achieve their goals. They may design and develop new business systems or enhance existing business systems by implementing new technological solutions.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 154) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- Program requires students to have completed an associate degree or higher.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.
2. Adapt to change within their profession by demonstrating a commitment to continuous learning.
3. Plan, organize and prioritize tasks in order to meet project deadlines.
4. Effectively utilize personal management skills, problem solving and knowledge of the organization to identify and improve an organization's performance.
5. Leverage electronic technology and integrate with existing systems to solve business problems.
6. Develop, test, implement and maintain program interfaces (such as websites), supporting structures (such as back-end databases), and delivery platforms.
7. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.
### Suggested Semester Sequence

#### Summer Start

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
</tbody>
</table>

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1150</td>
<td>Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IT-2620</td>
<td>Visual Basic .NET Programming</td>
<td></td>
</tr>
<tr>
<td>IT-2680</td>
<td>Visual C#.NET</td>
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</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2351</td>
<td>Interactive Internet Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>IT-2650</td>
<td>Java Programming</td>
<td>4</td>
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</tbody>
</table>

#### Total Credit Hours

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
</tr>
</tbody>
</table>

---

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.
2. Explain and implement technologies that are impacted by legal and ethical issues.
3. Plan, organize and prioritize tasks in order to meet project deadlines.
4. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.
5. Apply knowledge of programming, website maintenance, operating systems, networking and security to install, configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.
6. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and use appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing). Work as part of a development team using industry standards and guidelines.

---

### Information Technology-Programming and Development, Post-Degree Professional Certificate

Post-graduate certificate designed to update or enhance skills in object-oriented technologies. Students will experience the object-oriented environment of programming, database and Web technologies.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 155) about how certificate credits apply to the related degree and about related training programs.

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### Program Admission Requirements

- MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra appropriate score on Math Placement Test.
- Associate degree or higher required
Integrated Systems Engineering Technology, Associate of Applied Science

The Integrated Systems Engineering Technology program prepares students to diagnose and resolve industrial equipment problems using good technical assessment skills and core electrical skills. The program also provides students with a base knowledge in advanced skills such as Programmable Logic Controllers (PLCs) electronics and digital applications. Students completing the Integrated Systems Engineering Technology program will find jobs as instrument control technicians, maintenance repair technicians, electrical maintenance technicians, power plant control room operators, or integrated systems technicians.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 145) and here (p. 171) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Building Maintenance Technician, Certificate of Proficiency (p. 215)
- Mechatronics, Certificate of Proficiency (p. 344)
- Industrial Welding, Certificate of Proficiency (p. 313)
- Introductory Welding, Short-Term Certificate (p. 324)
- Welding Technology, Short-Term Certificate (p. 426)

Related Training and Credentials

- Fast-Track Welding Certificate Program (p. 294)
- Electrical Technician Certificate of Completion (p. 274)
- Facility Technician (p. 293)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 297)
- Steelworkers for the Future (p. 413)
- Industrial Automation Certificate of Completion (p. 312)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)

Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.

Other Information


Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify, select, and operate appropriate test equipment and tools, and interpret test results to solve problems in a controlled environment.
2. Use team skills to collaborate and perform in a professional and workman like fashion in a diverse workforce and a dynamic environment to meet organizational goals and objectives.
3. Apply appropriate Math, Science, and computer skills to support installation, troubleshooting, and maintenance of electrical equipment and systems.
4. Demonstrate effective comprehension and communication skills through listening, writing and speaking about problems, processes, and procedures to supervisors, team members, and management.
5. Diagnose and resolve equipment problems by utilizing good technical assessment skills that include planning, reliability, logical thinking, ability to use drawings, schematics and documentation, and a solid understanding of electrical maintenance theory and principles.
6. Work with a safety-focuses mindset and follow industry safety standards, local regulations, and company policies and procedures.
7. Apply the fundamentals of electrical/electronic skills including wiring methods, motor controls, National Electric Code, troubleshooting and print reading and exhibit base knowledge in advanced skills such as PLC’s, electronics and digital applications, robotics, and process controls.
8. Employ cross-functional skills to differentiate between thermal, mechanical, fluid and electrical power systems, and isolate and resolve breakdown(s).

Letters in parenthesis relate to Options (a) Integrated Systems Maintenance and (b) Environmental Systems Maintenance and (c) Welding

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1300 Mechanical/Electrical Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1310 Mechanical Power Transmission</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410 Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Option B:</td>
<td></td>
</tr>
<tr>
<td>ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I (Option B)</td>
<td></td>
</tr>
<tr>
<td>Option C:</td>
<td></td>
</tr>
</tbody>
</table>

Cuyahoga Community College 2019-2020 Catalog 321
ISET-1101  Welding Blue Print Reading (Option C) 3
Select one of the following:
ENG-1010  College Composition I
ENG-101H  Honors College Composition I
Credit Hours 13

Second Semester
ISET-1340  Industrial Piping and Tubing 2
ISET-1420  Applied Electricity II 3
Option A:
ISET-1320  Fundamentals of Fluid Power (Option A)
Option B:
ISET-1460  Fundamental Boiler Technology (Option B)
Option C - Select one of the following:
ISET-2100  Gas Metal Arc Welding (MIG) (Option C)
ISET-2120  Shielded Metal Arc Welding (STICK) (Option C)
Select one of the following:
IT-1090  Computer Applications
IT-109H  Honors Computer Applications
Credit Hours 8

Summer Session
ISET-2200  Industrial Motor Controls 3
COMM-1000  Fundamentals of Interpersonal Communication 3
Credit Hours 6

Third Semester
ENG-2151  Technical Writing 3
ISET-2240  Applied National Electric Code 3
ISET-2500  Programmable Logic Controllers Maintenance I 3
PSY-1050  Introduction to Industrial/Organizational Psychology 3
Option A:
MET-2300  Fluid Power (Option A)
Option B:
ISET-2450  Heating Ventilation Air Conditioning/Refrigeration II (Option B)
Option C - Select one of the following:
ISET-2110  Gas Tungsten Arc Welding (TIG) (Option C)
ISET-2131  Oxyfuel Processes/Plasma Processes (Option C)
Credit Hours 12

Fourth Semester
BADM-1050  Professional Success Strategy 3
ISET-2210  Commercial Wiring 3
ISET-2220  Fundamentals of Electronics and Instrumentation 3
ISET-2990  Reliability Centered Maintenance 3
Option A - Select one of the following:
ISET-2510  Programmable Logic Controllers Maintenance II (Option A) 1
ISET-2520  Programmable Logic Controllers Maintenance III (Option A) 1

Credit Hours 12
Total Credit Hours 51

1 Consecutive eight week course.

Options
(A) Integrated Systems 8
Fluid Power and Programmable Logic Controllers Option (A)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power</td>
<td>2</td>
</tr>
<tr>
<td>MET-2300</td>
<td>Fluid Power</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2510</td>
<td>Programmable Logic Controllers Maintenance II</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2520</td>
<td>Programmable Logic Controllers Maintenance III</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional program courses 51
Total Credit Hours 60

(B) Environmental Systems
Boiler Technology, HVAC, Option (B)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1450</td>
<td>Heating Ventilation Air Conditioning/Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1460</td>
<td>Fundamental Boiler Technology</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2450</td>
<td>Heating Ventilation Air Conditioning/Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2460</td>
<td>Applied Boiler Technology</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional program courses 51
Total Credit Hours 60

(C) Integrated Systems
Welding, Option (C)
To complete this option, students must complete ISET-1101 Welding Blue Print Reading and two of the four welding courses listed below.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1101</td>
<td>Welding Blue Print Reading</td>
<td>3</td>
</tr>
</tbody>
</table>
Select two of the following:
| ISET-2100 | Gas Metal Arc Welding (MIG)               | 8            |
| ISET-2120 | Shielded Metal Arc Welding (STICK)        | 8            |
| ISET-2110 | Gas Tungsten Arc Welding (TIG)           | 8            |
| ISET-2131 | Oxyfuel Processes/Plasma Processes        | 8            |

Additional program courses 51
Total Credit Hours 60

Total Credit Hours 12
**Interior Decorating, Certificate of Proficiency**

This program has been deleted effective Fall 2019. Students currently in the program have two years to complete this program until Summer 2021. After Summer 2021, certificates will no longer be granted for this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

**Gainful Employment Disclosure**

**Interior Design, Associate of Applied Business**

Interior design is a multi-faceted profession in which creative and technical solutions are applied to interior spaces. The interior designer helps to solve the functional and aesthetic design problems in residential and commercial interiors. This program prepares students for employment in interior design studios, architectural firms, and industry related fields.

**Program Contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 104) about how certificate credits apply to the related degree.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. **Design Process.** Identify simple to complex design problems, collect and apply appropriate research, and generate creative solutions to present to the client.
2. **Building Construction and Systems.** Solve problems with regards to limitations and opportunities that basic structural and non-structural components, lighting, acoustics, and environmental systems place on an environment.
3. **Collaboration.** Partner with members of a design team (i.e. vendors, contractors, clients, etc.) to facilitate the translation of a design from concept to completion.
4. **Written Communication.** Prepare and utilize drawings, contract documents, presentations, technology, and concept boards to explain various elements of the design process.
5. **Oral Communication.** Explain design decisions, project progression, and logistics to clients, vendors, and third-party team members.
6. **Business Ethics.** Recognize and practice ethical standards within the design industry including a commitment to professional development and community service.
7. **Furniture, Fixtures and Equipment.** Competently select appropriate project materials and accurately build specifications.
8. **Regulations.** Identify and investigate laws, codes, and standards that impact design projects (i.e. accessibility, universal design, fire safety, etc.).
9. **Professional Practice.** Apply knowledge of business procedures to the design process utilizing appropriate forms and documentation (i.e. quotes, estimates, bids, purchase orders, invoices, client files, etc.)

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2020 Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1101 Hand Drafting and Sketching for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1111 Introduction to Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTD-1120 Architectural Drafting for Interiors I</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2320 History of Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2330 Interior Design Materials and Sources</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2430 Architectural Materials and Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1XXX Math-1000 level or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1081 2D Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1130 Architectural Drafting for Interiors II</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2300 Interior Design Studio I</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2380 Fundamentals of Lighting</td>
<td>3</td>
</tr>
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</table>

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Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTD-2400</td>
<td>Interior Design Studio II</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2460</td>
<td>Interior Design Presentation</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2471</td>
<td>Professional Practice of Interior Design</td>
<td>2</td>
</tr>
<tr>
<td>INTD-2851</td>
<td>Interior Design Field Experience</td>
<td>1</td>
</tr>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 15

Total Credit Hours 60

Introductory Welding, Short-Term Certificate

This program provides basic training for students who want to acquire the fundamental skills of Stick, MIG, TIG and OxyFuel welding technologies and prepares students for careers in the welding industry with the potential to earn three nationally recognized certifications. At the conclusion of the MIG, TIG, and Stick welding classes, students submit a test piece (between 1F and 4G) for American Weld Society (AWS) certification evaluation.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 145) and here (p. 171) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Apply TIG and MIG to processes to join metal.
4. Read basic welding blueprints and interpret welding symbols.
5. Apply oxygen and fuel cutting skills.
6. Add and subtract decimals and fractions and convert decimals to fractions.
7. Use simple measuring instruments, such as a tape measure, caliper, protractor, and micrometer.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1101</td>
<td>Welding Blue Print Reading 1</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2110</td>
<td>Gas Tungsten Arc Welding (TIG) 1</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK) 1</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours 11

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-2100</td>
<td>Gas Metal Arc Welding (MIG)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2131</td>
<td>Oxyfuel Processes/Plasma Processes</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours 8

Total Credit Hours 19

1 Consecutively scheduled courses.

Ironworking, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.
This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Aptitude Test – contact Program Coordinator for information.
- Applicants are reviewed and selected by committee for admission to the program.

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.
2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.
3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.
4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.
5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.
9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATIW-1300</td>
<td>Structural Steel Concepts</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-1310</td>
<td>Safety for Ironworkers</td>
<td>1</td>
</tr>
<tr>
<td>ATIW-1320</td>
<td>Steel Construction Procedures</td>
<td>1</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATIW-1330</td>
<td>Erection Concepts &amp; Practices</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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<td>7</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATIW-2330</td>
<td>Pre-Construction Planning of Speciality Applications</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-2340</td>
<td>Speciality Installation Equipment</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-2350</td>
<td>Ornamental Systems &amp; Railings</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-2360</td>
<td>Ornamental Applications</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-2500</td>
<td>Rigging and Hoisting</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

Laboratory Phlebotomy, Short-Term Certificate

The Laboratory Phlebotomy Short-Term Certificate is a skills-oriented program designed to educate and train persons to skillfully collect blood specimens in a variety of situations. The curriculum includes introduction to blood collection, special blood collecting techniques, medical terminology, medical ethics, asepsis, human biology, and a five or eight-week period of clinical hands-on experience in a hospital or medical clinic.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 126), and here (p. 126) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Related Degrees and Certificates

- Medical Laboratory Technology, Associate of Applied Science (p. 352)
- Medical Assisting, Associate of Applied Science (p. 348)
Program Admission Requirements

- Rolling admissions. Program starts spring, summer and fall semesters of each year. Refer to program website for specific/additional scheduling: http://www.tri-c.edu/programs/health-careers/laboratory-phlebotomy/index.html
- Application may be submitted to the Health Career Enrollment Center while enrolled in final prerequisite courses.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- Complete the following:
  - MA-1010 Introduction to Medical Terminology
  - BIO-1050 Human Biology (also accept BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, or BIO-2341 Anatomy and Physiology II in place of BIO-1050)
  - ESL (English as a Second Language) Students: completion of TOEFL test
- GPA required: 2.50 admissions requirements/core courses

Other Information

- 24 students accepted per semester, contingent upon availability of clinical sites.
- All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor’s or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
- Time limit on core courses prior to application: seven years.
- Criminal background check required
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html. To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Upon acceptance to the program and prior to placement at a clinical site, student must submit evidence of good health/physical exam, current immunization status, current health insurance, and current certification in CPR.
- Accepted candidates will be required to attend a program orientation after acceptance into the program.

1. Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate the basic concepts of communication, personal and patient interaction, stress management, professional behavior and the legal implications of this work environment.
2. Perform proper infection control techniques and safety measures to protect patients, co-workers and the community.
3. Demonstrate approved blood and non-blood sample collections while maintaining quality assurance during and after specimen acquisition.
4. Apply critical thinking skills in the healthcare setting.
5. Meet eligibility requirements to sit for American Society for Clinical Pathology (ASCP) Board of Registry Examination or equivalent.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050 Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>MA-1010 Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>COMM-1000 Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>HTEC-1120 Critical Thinking in Healthcare</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1310 Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>Total Credit Hours</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLT-1300 Introduction to Blood Collection 2</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1851 Medical Laboratory Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>MLT-2970 Advanced Phlebotomy 3</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

| Total Credit Hours | 16 |

1  BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, or BIO-2341 Anatomy and Physiology II will be accepted in place of BIO-1050 Human Biology.
2  Consecutive five or eight-week course.
3  Completed second eight weeks with MLT-1851 Medical Laboratory Practicum I.

Landscape Contracting, Short-Term Certificate

This two semester certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already
employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Contracting Short-Term Certificate features course work in such horticulture basics as plant identification, equipment operations, and current landscape practices.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 176) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information

- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation. Display an impeccable work ethic and provide positive reinforcement to instill ownership of the project.

2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.

3. Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.

4. Demonstrate safe operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230 Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>PST-1311 Deciduous Woody Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1411 Equipment Operations and Safety</td>
<td>2</td>
</tr>
<tr>
<td>PST-1510 Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>9</td>
</tr>
</tbody>
</table>

Second Semester

| PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants | 3 |
| PST-1420 Landscape Practices | 3 |
| PST-1600 Irrigation and Drainage | 2 |
| Total Credit Hours | 10 |

Total Credit Hours: 19

Landscape Design, Short-Term Certificate

This two semester certificate program offers basic to advanced landscape design skills to persons who are seeking a career in landscape design but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Design Short-Term Certificate features course work in such horticulture basics as plant identification, landscape design, landscape project estimating and management and current landscape practices.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 176) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- Complete English placement test.
- Complete Math placement test

Other Information

- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ensure that a landscape design is properly created by actively listening, understanding, and implementing instructions and effectively translating them to select and place appropriate plants and materials in a landscape setting.

2. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs, and appropriate placement within the landscape.

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3. Demonstrate knowledge of landscape business requirements including estimating, profit and loss analysis, pricing strategies and customer relations.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
</tr>
<tr>
<td>PST-1441</td>
<td>Introduction to Landscape Design</td>
</tr>
<tr>
<td>PST-1510</td>
<td>Landscape Contracting</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>12</td>
</tr>
</tbody>
</table>

Second Semester

| Credit Hours |
| HLTH-1230    | Standard First Aid and Personal Safety | 1 |
| PST-1321     | Evergreens, Groundcovers, and Herbaceous Landscape Plants | 3 |
| PST-1450     | Landscape Design - CAD                | 3 |
| PST-2431     | Planting Design                       | 3 |
| Credit Hours | 10 |

Total Credit Hours: 22

Landscape Horticulture, Short-Term Certificate

This two semester certificate program offers advanced horticultural skills to persons who are seeking a career in landscape horticulture but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape or green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Horticulture Short-Term Certificate features course work in such horticulture topics as plant identification, plant pathology, soil technology, and arboriculture.

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information

- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.
2. Analyze plant micro-climates and the related effect on living organisms within them and prepare care and maintenance plans.
3. Demonstrate a knowledge of horticulture that can be transferred to interested segments of the population in a public setting, such as is found in botanical and public gardens.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
</tr>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
</tr>
<tr>
<td>PST-1331</td>
<td>Plant Propagation</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>CHEM-1000</td>
<td>Everyday Chemistry</td>
</tr>
<tr>
<td>PSCI-1020</td>
<td>Everyday Chemistry</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>10</td>
</tr>
</tbody>
</table>

Second Semester

| Credit Hours |
| PST-1321     | Evergreens, Groundcovers, and Herbaceous Landscape Plants | 3 |
| PST-2310     | Soil Technology                                   | 3 |
| PST-2370     | Introduction to Turfgrass                        | 2 |
| PST-2380     | Arboriculture                                      | 2 |
| Credit Hours | 10 |

Total Credit Hours: 20

Lean Six Sigma for Education: Yellow Belt

Gainful Employment Disclosure
**Program description**

These certifications have been customized to meet the needs of Educational Professionals. Lean Six Sigma (LSS) is a data-driven process that uses statistics, the DMAIC method, graphs and other tools to provide a framework for breakthrough performance improvement. The central idea behind LSS is that if an organization can measure how many “defects” there can be in a process, then it can easily and systematically identify ways to eliminate them with the aim of reaching as close to zero, or no defects, as possible.

**Other important information**

- Our Lean Six Sigma courses are blended-learning, which is a combination of self-paced online learning and classroom-based learning led by an instructor at one of our campus locations.
- Participants are required to complete all assigned course modules with an 80% grade or better and utilize project coaching hours (when applicable) within 30 days after the last classroom session. Passing the exam and completion of course projects must be accomplished within 60 days of the last classroom session.

**Program cost**

Visit the Corporate College website here for pricing.

**Financial aid eligibility**

This program is **not** Federal Financial Aid/Pell Eligible. Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**

Certificate of Completion/Lean Six Sigma Belt for Education Certification

**Related Programs/Training**

- Lean/Lean Six Sigma
- Business Management (p. 95)

To Register for and Learn more about Lean Six Sigma for Education.

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**Lean Six Sigma for Health Care: Yellow Belt and Green Belt**

![Image of Lean Six Sigma process]

**Program description**

These certifications have been customized to meet the needs of Healthcare Professionals. Lean Six Sigma (LSS) is a data-driven process that uses statistics, the DMAIC method, graphs and other tools to provide a framework for breakthrough performance improvement. The central idea behind LSS is that if an organization can measure how many “defects” there can be in a process, then it can easily and systematically identify ways to eliminate them with the aim of reaching as close to zero, or no defects, as possible.

**Other important information**

- There are no prerequisites for these courses. The Green Belt for Healthcare includes Yellow Belt through Green Belt material.
- Our Lean Six Sigma courses are blended-learning, which is a combination of self-paced online learning and classroom-based learning led by an instructor at one of our campus locations.
- Participants are required to complete all assigned course modules with an 80% grade or better and utilize project coaching hours (when applicable) within 30 days after the last classroom session. Passing the exam and completion of course projects must be accomplished within 60 days of the last classroom session.
- Participants will need to have a laptop for in-class Green Belt sessions.

**Program cost**

Visit the Corporate College website here for pricing.

**Financial aid eligibility**

This program is **not** Federal Financial Aid/Pell Eligible. Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**

Certificate of Completion/Lean Six Sigma Belt for Health Care Certification

---

**Code** | **Title** | **Credit Hours**
--- | --- | ---
ZLSS-1090 | Lean Six Sigma Yellow Belt for Education | 2.6
ZLSS-1077 | Lean for Education: Introduction (Online) | 0.4
ZLSS-1078 | Lean for Education: Comprehensive (Online) | 0.8

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**Code** | **Title** | **Credit Hours**
--- | --- | ---
ZLSS-1073 | Lean Six Sigma Yellow Belt for Health Care | 
ZLSS-1027 | Lean Six Sigma Green Belt for Healthcare - Comprehensive |
Related Programs/Training

- Lean/Lean Six Sigma
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Nursing (p. 128)
- Practical Nursing (p. 131)
- Health Care (Workforce Training Programs)
- Health Careers (p. 115)

To Register for and Learn more about Lean Six Sigma for Health Care

Lean Six Sigma: Yellow Belt, Green Belt, Black Belt

Program description

Lean Six Sigma (LSS) is a data-driven process that uses statistics, the DMAIC method, graphs and other tools to provide a framework for breakthrough performance improvement. The central idea behind LSS is that if an organization can measure how many “defects” there can be in a process, then it can easily and systematically identify ways to eliminate them with the aim of reaching as close to zero, or no defects, as possible.

Other important information

- Lean Six Sigma belts are progressive. Participants must complete a yellow belt before moving to green belt, and a green belt before moving to black belt.
- Our Lean Six Sigma courses are blended-learning, which is a combination of self-paced online learning and classroom-based learning led by an instructor at one of our campus locations.
- Participants are required to complete all assigned course modules with an 80% grade or better and utilize project coaching hours (when applicable) within 30 days after the last classroom session. Passing the exam and completion of course projects must be accomplished within 60 days of the last classroom session.
- Participants will need to have a laptop for in-class Green Belt and Black Belt sessions.

Program cost

Visit the Corporate College website here for pricing.

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive

Certificate of Completion/Lean Six Sigma Belt Certification

Related Programs/Training

- Lean/Lean Six Sigma
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Lean Six Sigma: Yellow Belt, Green Belt, Black Belt.

For more information about The American Society for Quality (ASQ) Certification Refreshers, visit our website here.

LeanOhio Boot Camp: Transforming the Public Sector

Program description

LeanOhio Boot Camp is an intensive, 4-day long training program that teaches students basic Lean principles and enables them to utilize Lean methods and tools in the public sector workplace. The program is tailored to the public-sector workplace. Participants will be able to use their new knowledge and skills immediately – making government simpler, faster, better and less costly.

Program cost

Visit the Corporate College website here for pricing.

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075
Upon completion students receive
Certificate of Completion

Related Programs/Training
- Lean Six Sigma
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)

To Register for and Learn more about LeanOhio Boot Camp: Transforming the Public Sector

Legal Administrative Specialist, Certificate of Proficiency

The Legal Administrative Specialist Certificate of Proficiency offers coursework that develops skills and knowledge specific to the legal industry in administrative functions and workplace software utilization. Recipients of this certificate can apply all earned credits towards the Business Technology degree program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 98) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Students must be able to touch type at a combined speed and accuracy rate of 35 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of "C" prior to entrance to this certificate program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to legal office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using proper media and legal terminology.
4. Determine and use various office applications software to develop document, and manage legal office project, procedures and systems.
5. Organize time and resources to manage day-to-day operations that meet legal office guidelines and goals.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-1201</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1350</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-1700</td>
<td>3</td>
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<tr>
<td>BT-2150</td>
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<td>BT-xxxx</td>
<td>3</td>
</tr>
<tr>
<td>PL-1502</td>
<td>3</td>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2010</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 15
Total Credit Hours 30

Lodging Rooms Division, Certificate of Proficiency

This program focuses on training the student for Rooms Division positions in the lodging industry. Students will have on-site training at area lodging facilities and will learn to use front desk and other related software. Upon successfully completing the courses, students will be awarded a Rooms Division Certification of Specialization from the American Hotel and Lodging Association. Students complete a practicum
that provides the work experience needed to advance and the work experience needed for certification.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 101) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Read and speak standard English and use basic math skills appropriate to a business environment.
2. Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
3. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience.
4. Read and accurately interpret standard indicators of the organization's financial health.
5. Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
6. Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.
7. Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 28)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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</tr>
<tr>
<td>Credit Hours</td>
<td>15</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1481</td>
<td>Housekeeping and Facilities Management</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1540</td>
<td>Lodging Operations Lab</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-1580</td>
<td>Front Office Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

Machine Tools Operation, Certificate of Proficiency

This program provides a certificate of proficiency to students who wish to acquire skills in manual machine tools operations and programming of computer controlled machine tools for entry-level employment in the metal working industry.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology...
to improve processes and product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply the knowledge of material science, machining tolerances, the use of basic blueprint/schematics, hands on skills and machine operation for the manufacturing of parts.

6. Apply the knowledge of materials science, quality control concepts, blueprints/schematics reading and interpretation, and skills in machine tools operation and basic machine maintenance to accomplish the manufacture of engineering parts.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>4</td>
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<tr>
<td>MET-1100</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>3</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1300</td>
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</tr>
<tr>
<td>MET-1400</td>
<td>3</td>
</tr>
<tr>
<td>MET-2000</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422</td>
<td>3</td>
</tr>
<tr>
<td>MET-xxxx</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
</tr>
</tbody>
</table>

1. MET-1200 & MET-1220 together will be accepted in place of MET-1230 Drawing & AutoCAD.

**Mammography, Short-Term Certificate**

The short-term certificate in mammography provides an opportunity for radiologic technologists registered in radiography to obtain education and clinical training in mammography. The mammographer specializes in imaging the breast to aid in the diagnosis and treatment of breast disease. The curriculum consists of on-line instruction, as well as off-campus clinical rotations at affiliated health care institutions. Those successfully completing the short-term certificate will be eligible for advanced level certification in mammography through the American Registry of Radiologic Technologists (ARRT). The on-line courses fulfill the "structured education" requirement as defined by the ARRT.

The mammography curriculum is accepted for professional continuing education credits for radiologic technologists. With departmental approval, technologists may register for individual on-line courses with the exception of RADT-2930 Mammography Applications. However, the certificate can be obtained only after completing the entire course sequence in the order listed.

**Program contact:** Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

**Related Degrees and Certificates**

- Radiography, Associate of Applied Science (p. 402)

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applicant must be a radiographer certified through the American Registry of Radiologic Technologists and possess a radiologic license through the State of Ohio. Documentation of ARRT certification and Ohio radiologic licensure must be submitted with the Health Careers Application.
- Applicants to the mammography program must first complete the general admission application to Cuyahoga Community College (http://www.tri-c.edu/get-started/index.html). Former Cuyahoga Community College students should contact the Enrollment Center at 800-954-8742 to reactivate their student record or reapply, if advised.
- Program applications for the short-term certificate in mammography may be obtained from the mammography website (www.tri-c.edu/mammography) and should be mailed to the address on the application.

**Other Information**

- 12-15 students accepted per year.
- Criminal background check required.
- Acceptance into the mammography short-term certificate program is contingent upon the results of the required background check. The College’s determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
- Courses taken MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option will NOT be accepted to meet certificate completion requirements.
- Documentation of good health, immunizations, health insurance and CPR for the healthcare provider through the American Heart Association is required prior to clinical assignment. Students accepted into the program will be notified by the program when they...
should begin collecting and submitting this documentation. Students will be dropped from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a mammography student and/or constitute a hazard to the health or safety of patients.

- Students in the mammography program must achieve a grade of "C" or better in all mammography coursework in order to remain in good academic standing and progress through the program.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Solicit and record patient’s clinical history relevant to the examination including the documentation of anatomical characteristics.
2. Elicit patient cooperation and provide patient comfort, psychological support and education regarding the procedure and radiation safety.
3. Select and utilize equipment appropriate to the patient and examination to produce diagnostic images.
4. Select exposure factors specific to the patient and examination using appropriate markers to document breast(s) imaged and projections.
5. Position the patient to produce images specific to department protocol and physician’s orders.
6. Evaluate the images to ensure proper identification and diagnostic quality.
7. Meet requirements for mammography certification eligibility through American Registry of Radiologic Technologists.

### Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-2610</td>
<td>Introduction to Mammography</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2620</td>
<td>Anatomy and Pathology of the Breast</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2630</td>
<td>Positioning Techniques for Breast Imaging</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2640</td>
<td>Physics of Mammography</td>
<td>1</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-2650</td>
<td>Interventional and Special Imaging Procedures</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2660</td>
<td>MQSA and ACR Regulatory Standards</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2670</td>
<td>Mammography Quality Control</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2930</td>
<td>Mammography Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours: 10**

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**Manufacturing Industrial Engineering Technology, Associate of Applied Science**

The Manufacturing Industrial Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). Manufacturing is instrumental to the function of society today and will remain indispensable for the future. This program ensures application of appropriate manufacturing processes and cost effective utilization of manufacturing tools, materials, equipment and manpower to manufacture parts and maintain equipment. The program provides graduates with a unique blend of theoretical and hands-on-knowledge with computer integration in a manufacturing environment that directly corresponds to modern applications used in industry. Graduates are employed in a wide variety of areas relevant to manufacturing industries.

**Program contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 147) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 179)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 246)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)
- CNC Machining and Composites Manufacturing, Short-Term Certificate (p. 239)

### Related Training and Credentials

- CNC Technology Certificate Program (p. 239)
- Computer Aided Design (CAD) (p. 244)
- Right Skills Now CNC Operations Program (p. 408)
- Precision Machining Technology 3 (PMT 3) (p. 397)
- Manufacturing Technical Readiness Program (p. 336)
- Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)
Program Admission Requirements

Applications may be submitted after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines' principles and operation, tools and materials, requisite mathematics and physics, to select operation parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to, troubleshoot and diagnose both numerically/computer numerically (NC/CNC) controlled machines, and programmable logic controlled (PLC) equipment.
6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.
9. Exhibit independence in the pursuits of continuous professional development.
10. Model ethical behavior in professional responsibilities.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530 College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MET-1100 Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230 Drawing &amp; AutoCAD</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010 College Composition I</td>
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<tr>
<td>ENG-101H Honors College Composition I</td>
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<tr>
<td>Select one of the following:</td>
<td>2-3</td>
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<tr>
<td>MET-1120 Computer Applications and Programming</td>
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<tr>
<td>MET-1261 Product Ideation &amp; Design I</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>MET-1240 Machine Tools and Manufacturing Processes</td>
<td>3</td>
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<tr>
<td>MET-1250 Introduction to Additive Manufacturing</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1540 Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300 Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422 Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2000 CAD/CAM Processes</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>MET-1400 CNC Programming and Operation</td>
<td></td>
</tr>
<tr>
<td>MET-2060 Product Ideation &amp; Design II</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS-1210 College Physics</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020 College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-102H Honors College Composition II</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041 CAD II &amp; GD&amp;T</td>
<td></td>
</tr>
<tr>
<td>MET-2601 3D Solid Modeling</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>MET-2400 Statistical Quality Control</td>
<td></td>
</tr>
<tr>
<td>MET-xxxx Elective</td>
<td></td>
</tr>
<tr>
<td>MET-xxxx Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-1410 Architectural CAD</td>
<td>16</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230 Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>MET-2500 Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
</tbody>
</table>
Select one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2740</td>
<td>Quality Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-xxxx</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>Arts &amp; Humanities/Social and Behavioral Sciences (see AAS Degree requirements)</td>
<td>(p. )</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 36

Total Credit Hours 62-63

1. MATH-1580 Precalculus & MATH-1510 Calculus I will be accept in place of MATH-1530 College Algebra & MATH-1540 Trigonometry.
2. MET-1220 and MET-1200 together will be accepted in place of MET-1230 Drawing & AutoCAD.
3. Students interested in pursuing all of the quality engineering elective courses, must take MET-2400 Statistical Quality Control in the third semester, as it is a prerequisite for MET-2740 Quality Manufacturing.
4. PHYS-2310 General Physics I & PHYS-2320 General Physics II will be accepted in place of PHYS-1210 College Physics I & PHYS-1220 College Physics II. PHYS-2310 General Physics I & PHYS-2320 General Physics II are recommended for students planning to transfer.

Electives

Automation Engineering Technology
Electives recommended for students interested in the field of Automation Engineering Technology:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2140</td>
<td>Manufacturing Automation and Control</td>
<td>3</td>
</tr>
<tr>
<td>MET-2220</td>
<td>Advanced CAD/CAM Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-2300</td>
<td>Fluid Power</td>
<td>3</td>
</tr>
</tbody>
</table>

Drafting & Design Engineering Technology
Electives recommended for students interested in the field of Drafting & Design Engineering Technology:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1410</td>
<td>Architectural CAD I</td>
<td>3</td>
</tr>
<tr>
<td>MET-2151</td>
<td>3D Digital Design &amp; Printing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

Quality Engineering Technology
Electives recommended for students interested in the field of Quality Engineering Technology:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2400</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>MET-2730</td>
<td>Lean Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2740</td>
<td>Quality Manufacturing</td>
<td>3</td>
</tr>
</tbody>
</table>

Additive Manufacturing
Electives recommended for students interested in the field of Additive Manufacturing

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2151</td>
<td>3D Digital Design &amp; Printing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2160</td>
<td>3D Scanning, Reverse Engineering, and Quality Inspection</td>
<td>3</td>
</tr>
<tr>
<td>MET-2191</td>
<td>Additive Manufacturing Project Capstone</td>
<td>2</td>
</tr>
<tr>
<td>MET-2941</td>
<td>Additive Manufacturing Internship</td>
<td>1-4</td>
</tr>
</tbody>
</table>

Manufacturing Technical Readiness Program

Program description
The Manufacturing Technical Readiness program offers courses designed for anyone working in manufacturing who want to improve their shop safety, shop math, blueprint reading, measurement and gaging. Students looking to start a career in manufacturing can take courses to build a foundation for entry-level employment. Students may enroll in any or all courses based on their specific needs.

Program cost
$125-$650 per course

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate for each course completed

Related Programs/Training
- Manufacturing Industrial Engineering Technology (p. 147)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Manufacturing Technical Readiness Program
Marketing, Associate of Applied Business

This Marketing Degree Program addresses the creative, fast-paced business of attracting, keeping and satisfying customer needs. Students gain fundamental business knowledge while participating in hands-on work in the business environment to develop marketing strategies that are sustainable for a business. Students who complete an Associate of Marketing Degree also achieve a Certificate in Digital Marketing. This stackable degree and certificate are available to ensure all marketing students have the knowledge to apply marketing strategies in the changing digital landscape.

Program contact: Learn more

Learn more (p. 105) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Short-Term Certificate in Social Media Marketing (p. 409)

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize professionalism, analytical and problem solving skills in decision making when working independently/or as part of a team.
2. Identify business principles necessary to resolve problems in a timely manner and enhance the overall performance of a business.
3. Communicate verbally, visually, and in writing effectively and efficiently to meet the goals of an integrated marketing communications strategy.
4. Generate marketing strategies that support customers and build sustainable relationships with all stakeholders.
5. Analyze results of marketing efforts to continuously improve offerings to customers.
6. Apply marketing skills in a digital environment across diverse platforms to create content strategies that drive the overall business objectives.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020: Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MARK-1080: Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2000: Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010: College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H: Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td>15</td>
</tr>
<tr>
<td>BADM-1122: Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2010: Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2010: Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240: Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020: College Composition II</td>
<td></td>
</tr>
<tr>
<td>ENG-102H: Honors College Composition II</td>
<td></td>
</tr>
<tr>
<td>Third Semester</td>
<td>15</td>
</tr>
<tr>
<td>ACCT-1311: Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BT-2040: Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>MARK-1090: Social Media Content Strategies</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020: Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2261: Salesmanship and Promotional Strategies</td>
<td></td>
</tr>
<tr>
<td>MARK-2270: Principles of Advertising</td>
<td></td>
</tr>
<tr>
<td>Fourth Semester</td>
<td>15</td>
</tr>
<tr>
<td>BADM-2151: Business Law</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2090: Digital Marketing Design</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2080: Social Media Analytics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060: Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Sciences Requirements (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

ELECTIVES

1 BADM-1080, BADM-1090, BADM-2080, and BADM-2090 are cross-listed with MARK-1080, MARK-1090, MARK-2080, and MARK-2090.
Massage Therapy, Associate of Applied Science

The 16-month Associate of Applied Science Degree in Massage Therapy provides students with the competencies that enable them to learn not only the basic massage therapy skills but also the advanced techniques in a clinical setting. Students complete over 1,000 massage therapy instruction hours. Students can sit for the Federation of State Massage Therapy Board’s Massage and Bodywork Licensing Examination (MBLEx) before completing the degree by receiving a Certificate of Proficiency in Massage Therapy. All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx exam. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 126) about how certificate credits apply to the related degree.

Program Admission Requirements

Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- High School Diploma/GED or enrolled in College Credit Plus.
- Official high school transcripts must be mailed directly to the Massage Therapy Program. Hand delivered or faxed transcripts will not be accepted.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
- To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

Code | Title | Credit Hours
--- | --- | ---
ENG-0990 | Language Fundamentals II (or appropriate score on English Placement Test) | 6
MATH-0910 | Basic Arithmetic and Pre-Algebra () | 3

Other Information

- 26 in the day program and 26 in the evening/weekend program (a combined total of 52 each year which includes students in the Certificate and Degree programs).
- Students must submit evidence of good health and required immunizations before acceptance to the program. Students will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.
- Students will be placed on Conditional Status if a “U,” Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Accepted applicants are required to attend group orientation sessions held prior to the start of fall semester and early in the fall semester.
- All science and math courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a “first-come, first-served” basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board’s Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of “C” or better and meet all other college, program, and Ohio medical board requirements.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Tri-C Health Careers criminal background check required before acceptance to the Massage Therapy Program.
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student’s ability to obtain federal, state, and
other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general relaxation massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the Federation of State Massage Therapy Boards (FSMTB) MBLEx examination required for licensure as a Massage Therapist by the Ohio State Medical Board.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.
4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage therapy.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage therapy.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
13. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.
14. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
</tr>
<tr>
<td>MT-1242</td>
<td>Somatic Studies I</td>
</tr>
<tr>
<td>MT-1302</td>
<td>Massage Therapy I</td>
</tr>
<tr>
<td>MT-1312</td>
<td>Applied Musculo-Skeletal Anatomy</td>
</tr>
<tr>
<td>MT-2301</td>
<td>Pathology for Massage Therapists</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
</tr>
<tr>
<td>MT-1272</td>
<td>Somatic Studies II</td>
</tr>
<tr>
<td>MT-1321</td>
<td>Functional Assessment in Massage Therapy</td>
</tr>
<tr>
<td>MT-1331</td>
<td>Massage Therapy II</td>
</tr>
<tr>
<td>MT-2350</td>
<td>Massage Therapy Clinic I</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>1</td>
</tr>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
<tr>
<td>HLTH-1310</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>18</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Summer Session</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations</td>
</tr>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
</tr>
<tr>
<td>MT-2201</td>
<td>Massage Modalities and Career Paths</td>
</tr>
<tr>
<td>MT-2360</td>
<td>Massage Therapy Clinic II</td>
</tr>
<tr>
<td>MT-2701</td>
<td>Comprehensive Somatic Studies for Massage Therapists</td>
</tr>
<tr>
<td>MT-2991</td>
<td>Comprehensive Massage Therapy</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>MT-2311</td>
<td>Advanced Massage Therapy</td>
</tr>
<tr>
<td>MT-2380</td>
<td>Advanced Massage Therapy Clinic</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>4</td>
</tr>
<tr>
<td>PSY-2020</td>
<td>Life Span Development</td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

| Total Credit Hours | **62** |
The Certificate of Proficiency in Massage Therapy is an 800-hour program which enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards’ Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Also after completing this certificate students can transfer all of the credits to the Associate of Applied Science Degree in Massage Therapy program. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 126) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

Application must be submitted to the Massage Therapy Program Office at the Eastern Campus:

- High School Diploma/GED or enrolled in College Credit Plus.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
- To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- GPA. If courses already taken at Tri-C or other college/university, overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."
- Complete the following courses with a grade of "C" or higher or achieve the appropriate score on English and Math Placement Tests:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-0990</td>
<td>Language Fundamentals II (or appropriate score on English Placement Test)</td>
<td>6</td>
</tr>
<tr>
<td>MATH-0910</td>
<td>Basic Arithmetic and Pre-Algebra (or appropriate score on Math Placement Test)</td>
<td>3</td>
</tr>
</tbody>
</table>

Other Information

- 26 students accepted per year for day program and 26 per year for evening/weekend program (a combined total of 52 each year which includes students in certificates and degree programs).
- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status Students who drop below 2.0 GPA are dismissed from the program.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Students must submit evidence of good health and required immunizations before acceptance to the program. Students will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Accepted applicants are required to attend group orientation sessions held prior to the start of fall semester and early in the fall semester.
- All science courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board’s Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Criminal background check required.
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student’s ability to obtain federal, state, and
other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program.

- In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general relaxation massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the Federation of State Massage Therapy Boards (FSMTB) MBLEx examination required for licensure as a Massage Therapist by the Ohio State Medical Board.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.
4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage therapy.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage therapy.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
<th>Summer Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-1242 Somatic Studies I</td>
<td>MT-1272 Somatic Studies II</td>
<td>MT-1280 Somatic Studies III</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>MT-1302 Massage Therapy I</td>
<td>MT-1321 Functional Assessment in Massage Therapy</td>
<td>MT-2201 Massage Modalities and Career Paths</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MT-1312 Applied Musculo-Skeletal Anatomy</td>
<td>MT-1331 Massage Therapy II</td>
<td>MT-2360 Massage Therapy Clinic II</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>MT-2301 Pathology for Massage Therapists</td>
<td>MT-2350 Massage Therapy Clinic I</td>
<td>MT-2701 Comprehensive Somatic Studies for Massage Therapists</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>MT-2991 Comprehensive Massage Therapy</td>
<td>MT-2991 Comprehensive Massage Therapy</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td>9</td>
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<tr>
<td>Total Credit Hours</td>
<td>14</td>
<td>34</td>
</tr>
</tbody>
</table>

Massage Therapy, Post-Degree Professional Certificate

The Post-Degree Professional Certificate is for students who already have an associate, bachelor, or higher degree and want to become licensed massage therapists. This 800-hour program enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards’ Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Post-Degree Professional Certificate Students can return after graduation and complete the Short-Term Certificate in Advanced Massage Therapy, which offers advanced bodywork training that enhances a licensed massage therapist’s career.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 126) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

Massage Therapy Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.
• High School Diploma/GED or enrolled in College Credit Plus.
• GPA required: Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status.

Other Information
• 26 students accepted per year for day program and 26 per year for evening/weekend program (a combined total of 52 each year which includes students in degree and certificate programs).
• Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
• Associate, Bachelor or higher degree required from a recognized institution. Official college/university transcripts must be mailed directly from the educational institution to the Massage Therapy Program and Tri-C Office of the Registrar. Hand delivered and faxed transcripts will not be accepted.
• Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html

To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
• Criminal background check required.
• Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student’s ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.
• Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
• Accepted applicants are required to attend group orientation sessions held prior to the start of fall semester and early in the fall semester.
• All science courses must have been completed within seven years at the time of admission to the program.
• Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
• Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
• Ohio medical board accepts the Federation of State Massage Therapy Board’s Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
• All massage courses in the sequence can only be repeated once to improve a grade.
• Once accepted, students must maintain a 2.5 GPA throughout the program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general relaxation massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the Federation of State Massage Therapy Boards (FSMTB) MBLEx examination required for licensure as a Massage Therapist by the Ohio State Medical Board.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.
4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage therapy.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage therapy.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-1242</td>
<td>Somatic Studies I</td>
<td>3</td>
</tr>
<tr>
<td>MT-1302</td>
<td>Massage Therapy I</td>
<td>2</td>
</tr>
<tr>
<td>MT-1312</td>
<td>Applied Musculo-Skeletal Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>MT-2301</td>
<td>Pathology for Massage Therapists</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 11

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-1272</td>
<td>Somatic Studies II</td>
<td>3</td>
</tr>
<tr>
<td>MT-1321</td>
<td>Functional Assessment in Massage Therapy</td>
<td>2</td>
</tr>
<tr>
<td>MT-1331</td>
<td>Massage Therapy II</td>
<td>3</td>
</tr>
<tr>
<td>MT-2350</td>
<td>Massage Therapy Clinic I</td>
<td>3</td>
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</tbody>
</table>

Credit Hours: 11

Summer Completion

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
<td>2</td>
</tr>
<tr>
<td>MT-2201</td>
<td>Massage Modalities and Career Paths</td>
<td>2</td>
</tr>
<tr>
<td>MT-2360</td>
<td>Massage Therapy Clinic II</td>
<td>3</td>
</tr>
<tr>
<td>MT-2701</td>
<td>Comprehensive Somatic Studies for Massage Therapists</td>
<td>1</td>
</tr>
<tr>
<td>MT-2991</td>
<td>Comprehensive Massage Therapy</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours: 9

Total Credit Hours: 31

Program Admission Requirements

- High School Diploma/GED
- Complete the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
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<tr>
<td>MATH-0965</td>
<td>Intermediate Algebra (or appropriate score on Math Placement Test)</td>
<td>6</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Utilize modern tools and technology (CAD/CAE) and apply appropriate engineering design principles, to design or assist in the design, testing and troubleshooting of manufacturable quality products, such as mechanisms and primary drives, including mechanical drive, power transmission, hydraulics, and pneumatics systems.
6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.
8. Engage in life-long learning to adapt to innovation and change.
9. Model ethical behavior in professional engagements.

Mechanical Engineering Technology, Associate of Applied Science

The Mechanical Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). It is designed to prepare students to pursue a career in the areas of design, development, manufacturing, installation, measurement, testing, operation and control, maintenance and sales of mechanical devices and systems. The curriculum emphasizes hands-on-learning and the use of current computer-aided techniques found in industry. Graduates are employed in a variety of industries such as automotive, manufacturing, aero-space, construction, transportation, Energy industry, as well as in research and development laboratories. Skills in the area of creating and interpreting engineering drawings and the practices and procedures of manufacturing and principles of product design are emphasized.

Program contact: Learn more

Learn more (p. 148) about how certificate credits apply to the related degree.
### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>4</td>
</tr>
<tr>
<td>MET-1100</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
<td></td>
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<tr>
<td>ENG-1010</td>
<td>3</td>
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<tr>
<td>ENG-101H</td>
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</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH-1540</td>
<td>3</td>
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<tr>
<td>MET-1240</td>
<td>3</td>
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<tr>
<td>MET-1601</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1020</td>
<td>3</td>
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<tr>
<td>ENG-102H</td>
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</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1300</td>
<td>3</td>
</tr>
<tr>
<td>MET-1621</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>3</td>
</tr>
<tr>
<td>MET-2200</td>
<td>3</td>
</tr>
<tr>
<td>MET-2240</td>
<td>1</td>
</tr>
<tr>
<td>MET-2300</td>
<td>3</td>
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</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230</td>
<td>1</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3</td>
</tr>
<tr>
<td>MET-2700</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>4</td>
</tr>
<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Sciences requirement (p. 33)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

---

1. MATH-1610 Calculus I will be accepted in place of both MATH-1530 College Algebra and MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed to meet degree requirements.
2. MET-2610 Statics will be accepted in place of MET-1601 Technical Statics to meet this requirement. MET-2610 Statics, MET-2620 Dynamics, and MET-2630 Engineering Strength of Materials are recommended for students planning to transfer.
3. PHYS-2310 General Physics I & PHYS-2320 General Physics II will be accepted in place of PHYS-1210 College Physics I & PHYS-1220 College Physics II, PHYS-2310 General Physics I & PHYS-2320 General Physics II are recommended for students planning to transfer.
4. MET-2620 Dynamics will be accepted in place of MET-1621 Technical Dynamics to meet this requirement.
5. MET-2630 Engineering Strength of Materials will be accepted in place of MET-2200 Strength of Materials to meet this requirement.
6. MET-2320 Thermal Dynamics will be accepted in place of MET-2300 Fluid Power to meet this requirement.

### Mechatronics, Certificate of Proficiency

The purpose of the program is to familiarize students with supporting concepts of mechatronics which is defined as a design process that includes a combination of mechanical engineering, electrical engineering, control engineering and computer engineering. It therefore is a multidisciplinary field. Supporting courses include programming, electronics, fluid power, etc., that will provide the student with a broad familiarity with supporting topics.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 145) about how certificate credits apply to the related degree.

### Gainful Employment Disclosure

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate in a lab environment using instrumentation ohms law, power laws for Direct Current (DC) and Alternation Current (AC) circuits.
2. Demonstrate welding blue print reading skills by performing stick welding operation to specification on a specimen.
3. Use instrumentation to demonstrate fluid pressure and volume in a laboratory environment and explain the relationship between hydraulic piston area and pressure.
4. Program a Programmable Logic Controller to solve a stated problem.
5. Demonstrate programming skills in a robotics environment to solve a stated problem. Use math to determine program behavior.

### Suggested Semester Sequence

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1101</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1300</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1310</td>
<td>2</td>
</tr>
</tbody>
</table>
Gainful Employment Disclosures

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.
3. Use industry-standard motion media editing software applications to professionally edit motion media projects.
4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.
5. Create a production plan and schedule that meets a client needs, uses resources appropriately and is on time and within budget.
6. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

First Semester
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-1180</td>
<td>Introduction to Media Arts and Filmmaking</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
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</tr>
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</table>

Second Semester
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2110</td>
<td>Editing</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2480</td>
<td>Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
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</table>

Summer Completion
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2120</td>
<td>Advanced Editing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>MARS-2380</td>
<td>Visual Effects</td>
<td></td>
</tr>
<tr>
<td>MARS-2720</td>
<td>Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media</td>
<td>1</td>
</tr>
<tr>
<td>MARS-2780</td>
<td>Motion Graphics II</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

1. Departmental approval is required for this project-based course. Certificate students taking MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media would work as a project lead in editorial.

Media Arts and Filmmaking (Digital Video Editing), Short-Term Certificate

These courses are selected from the Media Arts and Filmmaking degree sequence to provide a streamlined path to proficiency in video editing, basic motion graphics and digital storytelling.

The recipient of this certificate has demonstrated professional-level competency in digital, non-linear, video editing.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 111) about how certificate credits apply to the related degree.
Media Arts and Filmmaking (Motion Graphics), Short-Term Certificate

This short-term certificate in Motion Graphics will appeal to both newcomers and seasoned professionals in the areas of broadcast television, corporate and event video, web design and animation who seek to demonstrate a level of proficiency in using animated text and image to communicate a message and enhance production value for digital film and motion media productions.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 111) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.
3. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.
4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-1180 Introduction to Media Arts and Filmmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART-1081 2D Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450 Digital Imaging I²</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2380 Visual Effects</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2480 Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2780 Motion Graphics II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

1. May be waived for students who can demonstrate proficiency in graphic design. Portfolio review and interview with Media Arts faculty required.
2. May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

Media Arts and Filmmaking, Associate of Applied Business

In the associate degree program, the student will receive a general education in the appreciation and application of traditional art and design to motion media, along with the fundamentals of tactical, strategic communications. Each student will experience an in-depth exercise in devising media strategies to fulfill specific communications missions. Each student will learn the fundamentals of every aspect of the media production process. Following this, students will be enabled to specialize in a single aspect of that process, and develop familiarity and expertise in their chosen craft. The program offers specialty training in Digital Cinematography, Editing, Motion Graphics, Set Operations, and Production.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 111) about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Other Information

- Non-degree students may enroll in individual courses if they meet prerequisites.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.

2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.

3. Apply the basics of digital video filmmaking production following set protocol including camera operation, lighting, audio production and producing skills.

4. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.

5. Apply the appropriate writing style and visual design principles for a given medium that meets the production goal and persuades the audience to action.

6. Create a production plan and schedule that meets client needs, uses resources appropriately and is on time and within budget.

7. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-1020</td>
<td>Story: Pre-production Methods and the Art of Story in Motion Media</td>
<td>3</td>
</tr>
<tr>
<td>MARS-1180</td>
<td>Introduction to Media Arts and Filmmaking</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1100</td>
<td>Sound Recording and Design</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1261</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-1120</td>
<td>Media Arts and Studies Colloquium</td>
<td>1</td>
</tr>
<tr>
<td>MARS-2110</td>
<td>Editing</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2180</td>
<td>Digital Cinematography</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2480</td>
<td>Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MJS-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p. 28)</td>
<td></td>
</tr>
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<td></td>
<td>Credit Hours</td>
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Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2280</td>
<td>Short Films: Exploring Genre &amp; Technique</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2380</td>
<td>Visual Effects</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
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</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2620</td>
<td>Applied Integrated Media (AIM) I: Real World Pre-production</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2xxx</td>
<td>Media Arts and Studies Elective</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS-2xxx</td>
<td>Media Arts and Studies Elective</td>
<td>3</td>
</tr>
<tr>
<td>ART-1081</td>
<td>2D Design and Color</td>
<td></td>
</tr>
<tr>
<td>THEA-1430</td>
<td>Introduction to Scenery and Stagecrafts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
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</table>

Summer Completion

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2940</td>
<td>MARS Field Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

Electives

In the 3rd and 4th semester, students choose a three-credit course from the following courses as an elective.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS-2120</td>
<td>Advanced Editing</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2220</td>
<td>Advanced Crew and Set Operations for Motion Media</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2680</td>
<td>Digital Cinematography II</td>
<td>3</td>
</tr>
<tr>
<td>MARS-2780</td>
<td>Motion Graphics II</td>
<td>3</td>
</tr>
</tbody>
</table>
Medical Administrative Specialist, Certificate of Proficiency

The Medical Application Specialist Certificate of Proficiency prepares students for careers in the medical administration area. Skill sets in medical terminology combine with administration coursework, and earned credits can be applied towards the Business Technology degree program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 98) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Students must be able to touch type at a combined speed and accuracy rate of 25 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of "C" prior to entrance to this certificate program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Work independently and collaboratively to meet the needs of the medical organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to medical office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media and medical terminology.
4. Determine and use various office applications software to develop document, and manage medical office project, procedures and systems
5. Organize time and resources to manage day-to-day operations that meet medical organization guidelines and goals.

Suggested Semester Sequence

**Summer Start**

<table>
<thead>
<tr>
<th>Course</th>
<th>Core or Elective</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Core or Elective</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-1201</td>
<td>Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BT-1241</td>
<td>Information &amp; Records Management</td>
<td></td>
</tr>
<tr>
<td>BT-xxxx</td>
<td>Business Technology Elective</td>
<td></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Core or Elective</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-2040</td>
<td>Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>BT-2300</td>
<td>Business Database Systems (Access)</td>
<td>3</td>
</tr>
<tr>
<td>HIM-1121</td>
<td>Medical Billing Practices</td>
<td>2</td>
</tr>
<tr>
<td>MA-2010</td>
<td>Medical Terminology II</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 31

Medical Assisting, Associate of Applied Science

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical, and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience. Graduates are eligible to take the National Certifying Examination given by the American Association of Medical Assistants (AAMA).

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 126) about how certificate credits apply to the related degree.
Related Degrees and Certificates
- Medical Assisting, Certificate of Proficiency (p. 350)
- Medical Administrative Specialist, Certificate of Proficiency (p. 348)
- Laboratory Phlebotomy, Short-Term Certificate (p. 325)
- Medical Billing Specialist, Short-Term Certificate (p. 351)

Related Training and Credentials
- State-Tested Nursing Assistant (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- Students must request an application packet from the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information.
- High School Diploma/GED
- GPA required: 2.00 overall
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
- Completion of the following courses with a grade of "C" or higher:
  - GPA required: 2.00 overall
  - Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
  - Completion of the following courses with a grade of "C" or higher:

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>MA-1100</td>
<td>Mathematical Explorations (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Other Information
- 15 students per semester per campus accepted per year
- Criminal background check required

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.
2. Collect, process and test diagnostic specimens and document follow-up on results.
3. Apply current up-to-date quality control and safety principles in the workplace.
4. Skillfully perform and document routine clinical procedures according to office protocol.
5. Perform and document routine administrative procedures according to office protocol.
6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.
7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.
8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.
9. Effectively utilize an EMR program for documentation and insurance purposes.
10. Identify medical law and regulatory guidelines as it pertains to the ambulatory setting.
Medical Assisting, Certificate of Proficiency

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience in the health care industry. The Medical Assisting Certificate program is two semesters in length for full time students. Graduates of the one-year program are eligible to take the National Certification Examination given by the American Association of Medical Assistants. The five-year weighted average for Retention/Graduation of the Certificate of Proficiency in the Medical Assisting Program at Cuyahoga Community College, Cleveland, OH is 95%, based on the most recent Annual Report Form submitted to the Medical Assisting Education Review Board (MAERB) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Cuyahoga Community College Medical Assisting Certificate of Proficiency is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon recommendation of the Medical Assisting Education Review Board (MAERB).

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Completion of ENG-1010 College Composition I with a "C" grade or higher.
- Completion of MATH-0955 Beginning Algebra or higher with a "C" grade or higher.
- GPA required: 2.00 overall
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html

To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

Other Information

- 15 students admitted per campus per semester.
- All students enrolled in Health Career and Nursing programs requiring off campus clinical experiences are required to complete a criminal background check that includes fingerprinting and a court search. Reports from the background checks will be sent to the Associate Deans of Health Careers at the campus of their program or the Assistant Dean of Nursing. Please be assured that this information will be kept confidential.
Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.
2. Collect, process and test diagnostic specimens and document follow-up on results.
3. Apply current up-to-date quality control and safety principles in the workplace.
4. Skillfully perform and document routine clinical procedures according to office protocol.
5. Perform and document routine administrative procedures according to office protocol.
6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.
7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.
8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following</td>
<td>2-3</td>
</tr>
<tr>
<td>MA-1010 Introduction to Medical Terminology</td>
<td></td>
</tr>
<tr>
<td>MA-1020 Medical Terminology I</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>5-6</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th></th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050 Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-105L Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MA-1321 Medical Office Laboratory Procedures</td>
<td>2</td>
</tr>
<tr>
<td>MA-132L Medical Office Laboratory Procedures</td>
<td>1</td>
</tr>
<tr>
<td>MA-1402 Basic Clinical Medical Assisting</td>
<td>2</td>
</tr>
<tr>
<td>MA-140L Basic Clinical Medical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-1503 Administrative Procedures for the Medical Office</td>
<td>2</td>
</tr>
<tr>
<td>MA-150L Administrative Procedures Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th></th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-1200 Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>EMT-1310 Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>MA-2110 Reimbursement for Physician Services</td>
<td>2</td>
</tr>
<tr>
<td>MA-2413 Advanced Clinical Medical Assisting</td>
<td>3</td>
</tr>
<tr>
<td>MA-241L Advanced Clinical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-2860 Medical Assisting Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MA-2980 Medical Assisting Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credit Hours 31-32

1 BIO-2331 Anatomy and Physiology I & BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1050 Human Biology & BIO-105L Human Biology Laboratory.

Medical Billing Specialist, Short-Term Certificate

The Medical Billing Specialist Certificate is a short-term program established to prepare students for employment in physicians’ offices, medical insurance companies, and outpatient billing services. Medical Billing Specialists provide patient billing services for physicians, dentists, physical therapists, and other healthcare providers. They are knowledgeable in ICD-10-CM, CPT-4 and HCPCS coding, medical terminology; processing insurance claims, appeals and denials; fraud and abuse; HIPAA and OIG Compliance; information and web technology; reimbursement practices, and much more.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Gainful Employment Disclosure

Program Admission Requirements

Students who choose the major code S702 for Medical Billing Specialist Short-Term Certificate do not need to fill out an application for health careers. This is a self-paced program; therefore, after meeting the following admission requirements, the student may begin taking first semester courses.

- High School Diploma/GED.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information

- Number accepted per year is based on courses offered and number of openings available in the course each semester.
- 2.0 GPA required.
- Students must pass all courses with a grade of “C” or higher to be eligible for the certificate.
• MA-1020 Medical Terminology I and MA-2010 Medical Terminology II must be completed within two years of program completion if not using Medical Terminology in current work environment.

• Coding courses expire after 12 months of completion of a program.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.

2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.

3. Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.

4. Use a variety of techniques to problem solve and arrive at best outcome.

5. Apply regulatory and accreditation standards to identify and support documentation compliance.

6. Apply hospital policies, federal regulations and/or state statutes in the release and management of protected health information (PHI).

7. Ensure document compliance for services being billed.

8. Apply skills to find, build, research, manage and report both electronic and paper data.

9. Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the healthcare delivery system.

10. Utilize knowledge and skills of medical terminology, codesets, reimbursement methodologies and regulations to accurately and thoroughly assign respective code sets.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I ¹</td>
</tr>
<tr>
<td>MATH-1xxx (p. 32)</td>
<td>1000-level MATH course or higher</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
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<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
<tr>
<td>Credit Hours</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM-1112</td>
<td>Physician Office Coding</td>
</tr>
<tr>
<td>HIM-1121</td>
<td>Medical Billing Practices</td>
</tr>
<tr>
<td>HIM-1311</td>
<td>Legal Aspects of Health Care</td>
</tr>
<tr>
<td>MA-2010</td>
<td>Medical Terminology II</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>23</td>
</tr>
</tbody>
</table>

¹ Students must pass all required courses with a grade of “C” or higher to be eligible for the certificate.

Medical Laboratory Technology, Associate of Applied Science

The Medical Laboratory Technician (or Clinical Laboratory Technician) works in a hospital, clinic, private or research laboratory performing a variety of diagnostic tests. The course of study includes mathematics, chemistry, anatomy and physiology, medical laboratory procedures, general education courses and one academic semester of clinical field experience. Graduates may be eligible to take national certification examinations like that offered by the American Society for Clinical Pathology (ASCP).

Program contact: Learn more

Learn more (p. 127) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Laboratory Phlebotomy, Short-Term Certificate (p. 325)

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

• High School Diploma/GED
• GPA required: 2.50 admissions requirements. 2.50 overall
• Eligibility to enroll in BIO-2331 Anatomy and Physiology I by sufficient score on Biology placement test or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry with a grade of “C” or higher.
• Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting
Find Your Major or Program - Cuyahoga Community College 2019-2020 Catalog

program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

• Complete the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1000</td>
<td>Introduction to Medical Laboratory Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Other Information

• 15 students accepted per year
• For students with minimal computer experience, highly recommend also taking IT-1090 Computer Applications.
• All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor's or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
• The program begins Spring semester yearly, but is subject to change. Review the program website for comprehensive admissions information and application: http://www.tri-c.edu/programs-healthcareers/medicallab/Pages/Default.aspx.
• Criminal background check required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Organize workflow using technology to produce efficient, detail oriented work and identify emergencies and use problem solving skills to resolve these issues.
2. Follow governmental, accreditation, and institutional guidelines in relationship to safety, infection control, confidentiality, and proficiency testing.
3. Practice consistent quality assurance through precise performance, monitoring, analyzing, and documenting of all quality testing.
4. Collect samples; perform testing procedures according to SOP; operate, maintain, and troubleshoot instrumentation; and keep accurate records.
5. Interact with patients, staff and colleagues, using tact, courtesy, and respect.
6. Develop professionalism by adhering to institutional policies and practicing ethical standards as defined by accrediting boards.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-1020 Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
</tbody>
</table>

MA-1020 | Medical Terminology I | 3          |
MATH-1410 | Elementary Probability and Statistics I | 3          |
MLT-1000 | Introduction to Medical Laboratory Technology | 3          |

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MLT-1351</td>
<td>Problem Solving Techniques for the Medical Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MLT-1491</td>
<td>Urinalysis and Body Fluids</td>
<td>3</td>
</tr>
<tr>
<td>MLT-2461</td>
<td>Hematology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
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</table>

Credit Hours 16

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MLT-2471</td>
<td>Immunohematology &amp; Serology</td>
<td>5</td>
</tr>
<tr>
<td>MLT-2501</td>
<td>Clinical Chemistry</td>
<td>5</td>
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Credit Hours 14

Third Semester

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>MLT-2482</td>
<td>Clinical Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>MLT-2990</td>
<td>Advanced MLT Applications</td>
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</tbody>
</table>

Credit Hours 15

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MLT-2940</td>
<td>Medical Laboratory Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>MLT-2980</td>
<td>Professional Development and Life Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours 4

Total Credit Hours 64

1 Enrollment in CHEM-1020 Introduction to Organic Chemistry and Biochemistry requires students to have either achieved a sufficient score on Chemistry Placement Test or completed CHEM-1010 Introduction to Inorganic Chemistry with "C" or higher.

2 Students who do not place into MATH-1410 Elementary Probability and Statistics I on assessment test must take MATH-0965 Intermediate Algebra as a prerequisite for this program. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

3 Enrollment in BIO-2331 Anatomy and Physiology I requires either appropriate placement score on biology Placement test or a grade of "C" or higher in BIO-1100 Introduction to Biological Chemistry.
Medical Scribing for Allied Health Professionals

Program description
Corporate College, in partnership with ProTrain, is now offering a variety of quality online training programs in health care, digital marketing, accounting, leadership, finance, and social selling. Programs are industry-standard, affordable solutions for individuals seeking to prepare for an in-demand career that will help move them forward to achieve the goal of education to success in the workforce.

A Medical Scribe is a paraprofessional who assists the physician by documenting physician-patient encounters in electronic health records for delivery of efficient patient care. In our fast-paced environment, physician’s need assistance in the exam rooms and the presence of an effective medical scribe allows the physician to focus on providing exceptional customer service to the patients. Our partner, ProTrain, has designed this course to provide you with a simulated practice of recording verbal communication encountered during patient-doctor interaction and the recording of clinical events as they unfold. This course also includes a study of procedures related to the retrieval of diagnostic test results. Procedures used in scheduling diagnostic tests, follow-up appointments, etc., are discussed and practiced. An emphasis is placed on professional and ethical behavior in a clinical healthcare setting.

Highlights
- Eligible to sit for the AHDPG National Certification exam
- Self-Paced
- Flexibly Scheduled
- Access obtained upon registration

QUICK FACTS
- Median Pay: $41,460 per year
- Typical Entry-Level Education: Postsecondary nondegree award
- Work Experience in a Related Occupation: Experience in the allied health field
- On-the-job Training: None
- Number of Jobs: 200,140
- Job Outlook through 2024: 13% (Faster than average)

Other important information
- Prerequisite: Completion of the ProTrain Medical Scribe Readiness Assessment (MSRA) with a score of 80% or higher.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion
(Students who complete this comprehensive course will receive a Noncredit Certificate of Training Completion and are eligible to sit for the AHDPG National Certification exam.)

Related Programs/Training
- Health Care (Workforce Training Programs) (p. 124)

To Register for and Learn more about Medical Scribing for Allied Health Professionals.

Microsoft Administrative Professional (MAP) Academy

Program description
Learn to be an integral part of any professional office team, from small businesses to major corporations. This program will teach you the fundamental skills you need to work as an administrative professional. The Microsoft Administrative Professional (MAP) Academy is a full time, 5-week IT Fast Track Program. Get immersed in Microsoft Office 2016 and learn how to effectively utilize Word, Outlook, PowerPoint and Excel.

Other important information
Some key learning outcomes include:
- **Word**: Format text, paragraphs and sections, Create tables and lists, Create and manage references, Insert and format images
- **Outlook**: Customize settings, Search in Outlook, Mark as read/unread, Set reminders, Create and manage calendars, Create and manager contact and groups
- **PowerPoint**: Create and manage presentations, Insert and format text, shapes and images, Insert tables, charts SmartArt and video, Integrate slide transitions and animations
- **Excel**: Create and manage worksheets and workbooks, Manage data cells and ranges, Create tables, Execute operations with formulas and functions, Create and manipulate charts and objects
Types of jobs students can expect to get after completion include:

- Administrative support staff in any company using Microsoft Products
- Executive Assistant
- Legal Assistant
- Administrative Coordinator
- Secretary
- Concierge

**Program cost**
Visit the Corporate College website here for pricing.

**Financial aid eligibility**
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**
Certificate of Completion and preparation for FOUR Microsoft Office Specialist 2016 (MOS) Certifications.

**Related Programs/Training**
- Information Technology (Workforce Training Institute)
- Business Management (p. 95)
- CompTIA IT Fundamentals (p. 243)
- Keyboarding and Communication Intensive

To Register for and Learn more about the Microsoft Administrative Professional (MAP) Academy

**Microsoft Office Application Specialist, Short-Term Certificate**

This short-term certificate provides knowledge and skills in preparation for the Word, Excel, Access, PowerPoint, and Outlook MOS (Microsoft Office Specialist) exams. Students enrolled in this certificate program will acquire competencies in advanced word processing, spreadsheet design and use, presentation software, email application features including calendaring, and database maintenance.

**Program contact:** Learn more

Learn more (p. 98) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure**
Students must be able to touch type at a combined speed and accuracy rate of 25 wpm. Typing placement test available in Campus Assessment Centers. Students who do not achieve appropriate score on placement test must complete BT-1000 Keyboarding and Document Formatting course and pass with a minimum grade of C prior to entrance to this certificate program.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Determine and use various workplace application software to develop, document, and manage office projects, procedures and systems.
2. Build, edit and maintain spreadsheet solutions in Microsoft Excel to automate manual or outdated processes.
3. Build and maintain databases in Microsoft Access in order to track and manage data.
4. Design, create, maintain, and enhance presentations in Microsoft PowerPoint in order to deliver ideas and information.
5. Create, edit, enhance and review documents in Microsoft Word.
6. Utilize calendaring and task features in Outlook.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td>3</td>
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<tr>
<td>ACCT-1011 Business Math Applications</td>
<td></td>
</tr>
<tr>
<td>ACCT-1020 Applied Accounting</td>
<td></td>
</tr>
<tr>
<td>BT-1000 Keyboarding and Document Formatting</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090 Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
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</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-1201 Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2040 Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>BT-2210 Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>BT-2300 Business Database Systems (Access)</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>11</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-2200 Advanced Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BT-1700 Business Spreadsheets (Excel)</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>23</td>
</tr>
</tbody>
</table>

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
Millwrighting, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Millwrighting.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Admission Requirements

- Intent-to-hire agreement with participating contractor.

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.
9. Move and install machinery using forklifts, rigging hardware and tools in a safe, effective and efficient manner.
10. Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.
11. Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301</td>
<td>Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1320</td>
<td>Introduction to Millwrighting</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1330</td>
<td>Print Reading for Millwrights</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1350</td>
<td>Hydraulics/Centrifugal Pumps</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1450</td>
<td>Heavy Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1490</td>
<td>Millwright Pile Driver Weld I</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours: 12

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1720</td>
<td>Machinery Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2120</td>
<td>Shaft Alignment</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2230</td>
<td>Millwright Pile Driver Weld II</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2350</td>
<td>Floor Conveyor</td>
<td>2</td>
</tr>
<tr>
<td>ATXX-xxxx</td>
<td>ATxx Elective Apprenticeship course</td>
<td>2-3</td>
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</table>

Credit Hours: 12-13

Summer Completion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMW-2130</td>
<td>Shaft Alignment II</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2520</td>
<td>Millwright Pile Driver Weld III</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2700</td>
<td>Millwright-Pile Driver Weld IV</td>
<td>2</td>
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</tbody>
</table>

Credit Hours: 6

Total Credit Hours: 30-31
Mobile Application Development, Short-Term Certificate

Short-term certificate in Mobile App Development. Students will learn the competencies required to analyze, design, develop and test mobile applications. Students explore the latest mobile platforms and prepare to publish apps. Skills acquired will help students to prepare for jobs in mobile application development and entrepreneurial self-publishing opportunities.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 155) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on Math Placement Test.
- MATH-0965 Intermediate Algebra or MATH-1240 Contemporary Mathematics or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Engage in directed work as a member of a diverse software development and/or support team.
2. Analyze, design, develop and test mobile applications to address specified business problems using high-level languages, technologies and appropriate methodologies.
3. Test, package and prepare a mobile application for publishing for a given framework(s) following legal and ethical guidelines demonstrating an understanding of the publishing process.
4. Troubleshoot mobile application issues to determine the best solution to satisfy the customer.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
<td>3</td>
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</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>IT-2650</td>
<td>Java Programming</td>
<td>4</td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2100</td>
<td>iOS Application Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2110</td>
<td>Android Mobile Application Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 21

Nondestructive Testing (NDT) and Quality Assurance (QA)

Program description

The Nondestructive Testing and Quality Assurance program offers courses designed for business and industry professionals who want to quickly learn or enhance their skills in nondestructive testing or dimensional part inspection.

Other important information

NDT training is done in accordance with SNT-TC-1A and NAS410 standards.

Completion of NDT courses qualifies as formal training but does not alone certify a student as an inspector. Certification, governed by specific industry standards, also requires written testing and on-the-job training under the supervision of a Level 3 technician.

Program cost

$495-$775 per course

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075.

Upon completion students receive

Certificate for each course completed.

Related Programs/Training

- Integrated Systems Engineering Technology (p. 147)
- Manufacturing Industrial Engineering Technology (p. 147)
Nuclear Medicine, Associate of Applied Science

A Nuclear Medicine technologist is the health professional responsible for performing nuclear medicine examinations that assist the physician in the diagnosis and treatment of various diseases. The trained nuclear medicine technologist prepares and administers radiopharmaceuticals and performs patient imaging procedures using radiation detection devices. Technologists provide data analysis and patient information to the physician. The nuclear medicine technologist may be employed in hospitals, clinics, imaging centers, physician’s offices, education, research and manufacturing. Graduates of the program may be eligible for the American Registry of Radiologic Technologists (ARRT) examination for Nuclear Medicine and/or the Nuclear Medicine Technology Certification Board examination (NMTCB). The program is accredited by the Joint Review Committee on Educational programs in Nuclear Medicine Technology.

Program contact: Learn more

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center 216-987-4247, during the semester that all program admission requirements are expected to be met:

- High School Diploma/GED
- All math and science courses must have been completed within the past seven years at the time the Nuclear Medicine application is submitted. Math and science courses completed over seven years prior to the date of application may not be used to meet admission requirements.
- Complete the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td>Everyday Physics</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra (or higher)</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

1. Students with high school or previous chemistry coursework should take Chemistry Placement Test to qualify for CHEM-1300. Students with no chemistry coursework will need to take CHEM-1010 Introduction to Inorganic Chemistry before enrolling in CHEM-1300.
2. PHYS-1210 College Physics I will be accepted in place of PHYS-1050 for those students intending to transfer to a four year institution.

Other Information

- A 2.00 prerequisite GPA must be maintained while waiting for entry into the first program major course. After admission to the program, a 2.5 overall GPA or higher must be maintained.
- Two 4 hour clinical observations. Details of observation requirements can be found at http://www.tri-c.edu/programs/health-careers/nuclear-medicine/documents/observation-form.pdf. Once accepted for admission, complete the observations and email a copy of the observation form to the Nuclear Medicine Program Manager.
- Approximately 15-18 students admitted - varies depending on space available at clinical facilities.
- Evidence of current certification in the Basic Life Support (CPR) course for Health Care Providers (adult, child, and infant) according to the American Heart Association standards will be required prior to receiving clinical assignment the second year of the program. Details will be provided at the Orientation prior to start of curriculum.
- Candidates will be required to present evidence of good health verified by a physical examination prior to entering clinical training the second year of the program. Please refer to Health Requirements for Western Campus Health Career Students.
- Only one admission requirement course may be repeated only once to improve a grade below "C". A "W" is counted as an attempt.
- All students enrolled in Health Career and Nursing programs requiring off campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Log onto http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html for further information. Reports from the background checks will be sent to the Program Manager. Please be assured that this information will be kept confidential.
- After Program Acceptance: Students should wait until the start of fall program sequence courses to complete HAZMAT, CPR, vaccinations and physical exams. Details will be provided at Orientation prior to the start of the program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communication: Use effective verbal, non-verbal and written communication skills to provide comprehensive patient care in a healthcare team environment.
2. Safety: Prepare, record, administer and dispose of radioactive materials according to regulatory guidelines to ensure safety of patients, co-workers and the general public.
3. Patient Care: Demonstrate comprehensive patient care skills to provide safe, efficient and high quality nuclear medicine services.
4. Technical Skills: Apply general science knowledge to demonstrate the proper and safe use of equipment and instrumentation for diagnostic
and therapeutic applications within the scope of nuclear medicine practice.

5. Eligibility for Professional Certification: Sit for Nuclear Medicine Technology Certification Board (NMTCB) and/or American Registry of Radiologic Technology [N] (ARRT) and apply for state licensure.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331 Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341 Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>PHYS-1050 Everyday Physics</td>
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<tr>
<td>CHEM-1300 General Chemistry I</td>
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<tr>
<td>&amp; CHEM-130L General Chemistry Laboratory I</td>
<td></td>
</tr>
<tr>
<td>CHEM-130H Honors General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>MATH-1530 College Algebra</td>
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<tr>
<td>MATH-153H Honors College Algebra</td>
<td></td>
</tr>
</tbody>
</table>

**First Semester**

| MA-1010 Introduction to Medical Terminology | 2          |
| NMED-1010 Nuclear Medicine Math and Statistics | 1          |
| NMED-1100 Computers in Nuclear Medicine     | 1          |
| NMED-1301 Nuclear Medicine Procedures I     | 3          |
| NMED-130L Nuclear Medicine Laboratory I     | 1          |
| NMED-1501 Radiation Physics                 | 2          |
| NMED-1603 Nuclear Radiopharmacy and Pharmacology | 3          |
| NMED-1701 Nuclear Medicine Instrumentation  | 3          |

**Second Semester**

| NMED-1200 Radiation Safety & Biology       | 2          |
| NMED-1401 Patient Care for Nuclear Medicine| 1          |
| NMED-1770 Immunology and Pathophysiology for Sectional Imaging | 2          |
| NMED-1780 Sectional Anatomy for Advanced Molecular Imaging | 2          |
| NMED-2301 Nuclear Medicine Procedures II   | 3          |
| NMED-230L Nuclear Medicine Laboratory II   | 1          |
| NMED-2600 Molecular and Fusion Imaging     | 2          |
| NMED-2660 Nuclear Medicine Therapy         | 1          |

**Summer Session**

| NMED-2700 Nuclear Medicine Research Methods | 1          |
| NMED-2940 Nuclear Medicine Field Experience I | 3          |
| Select one of the following:               | 3          |
| PHIL-2050 Bioethics                        |            |
| PHIL-205H Honors Bioethics                 | 7          |

**Credit Hours**: 22

**Credit Hours**: 16

**Credit Hours**: 14

**Credit Hours**: 7

**Credit Hours**: 7

**Credit Hours**: 14

**Credit Hours**: 7

**Credit Hours**: 7

**Credit Hours**: 4

**Credit Hours**: 3

**Credit Hours**: 3

**Credit Hours**: 4

**Total Credit Hours**: 73

1. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

2. PHYS-1210 College Physics I will be accepted in place of PHYS-1050 Everyday Physics.

3. Students must earn a "C" or higher in all Nuclear Medicine courses to be awarded the AAS degree in Nuclear Medicine Technology.

### Nursing (Accelerated Track), Associate of Applied Science

Applicants with a bachelor's degree (or higher) from an accredited institution may qualify to enter in the Accelerated Track of the program and complete the program in four consecutive terms. These applicants must meet all nursing program admission requirements including the Entrance Examination and have completed prerequisite courses (see admission requirements).

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN) 3343 Peachtree Road NE, Suite 850 Atlanta, GA 30326 (404) 975-5000

**Note:** This program will no longer be admitting students after Fall 2019.

**Program contact:** Learn more

Learn more (p. 129) about how certificate credits apply to the related degree.
Related Degrees and Certificates
• Nursing, Associate of Applied Science (p. 363)
• Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)

Program Admission Requirements
• Bachelor's Degree or higher.
• Application may be submitted after meeting requirements listed below. Comprehensive admissions information is available at the Nursing website: http://www.tri-c.edu/programs/nursing/Pages/default.aspx.
• Submit all official college transcripts verifying bachelor's degree to:
  Tri-C
  Office of the Registrar
  P.O. Box 5966
  Cleveland, Ohio 44101
• Please see application procedures (p. 116) for more information.
• Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support courses from another accredited institution may use that institution's cumulative GPA if they have 9 credit hours from any courses that may be used to meet the general education requirements for the Associate of Applied Science Degree (no developmental courses), and a GPA of 3.0 or greater. (**Schools accepted by Tri-C).
• An official transcript must be submitted to Tri-C's Enrollment Office (Metropolitan, Eastern, or Westshore Campus).
• Accelerated Track admitted Fall, day section only. Space available basis.
• A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from any courses that may be used to meet the general education requirements for the Associate of Applied Science Degree (no developmental courses).
• Successful completion of Entrance Examination.
• Complete the following: ("C" grade or higher in each):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td></td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td>3-8</td>
</tr>
<tr>
<td></td>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM-1010 Introduction to Inorganic Chemistry &amp; CHEM-1020 Introduction to Organic Chemistry and Biochemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td></td>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
</tbody>
</table>

1 Schools accepted by Cuyahoga Community College.
2 Students who transfer credits for ENG-1020 College Composition II with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural Sciences must be earned.

Other Information
• Official transcript(s) should be received in the Registrar’s Office at least six to eight weeks prior to contacting the Nursing department.
• The Elsevier Admission Test (A2) is required for admission to the program. Students must achieve a grade of 75% or higher on the Math Skills and English Language portions of the exam. There is a limit of two attempts within a 12 month period. Students may attempt the exam one time a month. If a second attempt is needed to achieve a passing score, only the section(s) below 75% needs to be completed.
• The English portion of the exam is composed of three separate tests. The three tests are: Reading Comprehension, Vocabulary, and Grammar. All three sections must be taken for a score to be used for admission purposes.
• Once beginning the nursing course sequence, all nursing courses must be completed in 2.5 years.
• CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry replace BIO-1100 Introduction to Biological Chemistry for students planning to transfer to a baccalaureate nursing program.
• Transfer students must meet all admission and progression requirements.
• All students enrolled in Health Career and Nursing programs requiring off campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Log onto www.tri-c.edu/nursing for further information.

Program Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply the nursing process in managing care for groups of individuals and families in a variety of health care settings.
2. Utilize information from multiple sources for managing safe, effective and quality nursing care for groups of individuals and families in a variety of healthcare settings.
3. Utilize critical thinking to apply evidence based practice when managing care for groups of individuals and families in a variety of health care settings.
4. Apply effective communication skills to establish and maintain therapeutic and professional relationships in managing care for groups of individuals and families across the life span.
5. Integrate principles of human development when providing nursing care for groups of individuals and families across the life span.
6. Incorporate knowledge of cultural and socioeconomic factors in the management of nursing care for groups of individuals and families in a variety of health care settings.
7. Deliver safe, competent and quality patient centered nursing care within the role of the Associate Degree Nurse as a:
   a. Provider of care: Integrate biopsychosocial and scientific principles when providing technically competent care for groups of individuals and families in a variety of health care settings.
b. Manager of care:
   i. Collaborate as a member of the health care team to manage the care of groups of individuals and families in a variety of health care settings.
   ii. Delegate activities to manage the care of groups of individuals and families in a variety of health care settings.

c. Member of the discipline of nursing:
   i. Practice within the ethical and legal framework of the nursing profession.
   ii. Formulate a plan for continuing professional development.
   iii. Identify resources for continuing professional development.

### Suggested Semester Sequence

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<tr>
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<tr>
<td>BIO-2341 Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2500 Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following: 3-8</td>
<td></td>
</tr>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry</td>
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</tr>
<tr>
<td>CHEM-1010 Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM-1020 Introduction to Organic Chemistry and Biochemistry</td>
<td></td>
</tr>
<tr>
<td>Select one of the following: 3</td>
<td></td>
</tr>
<tr>
<td>ENG-1010 College Composition I 4</td>
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</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following: 3</td>
<td></td>
</tr>
<tr>
<td>PSY-1010 General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>24-29</td>
</tr>
</tbody>
</table>

**First Semester**

| NURS-1300 Health Assessment | 2 |
| NURS-1451 Self-Care Needs: Adult Life Span | 7 |
| Select one of the following: 4 |
| PSY-2020 Life Span Development |               |
| PSY-202H Honors Life Span Development |            |
| Credit Hours | 13 |

**Second Semester**

| NURS-1601 Health Deviations I | 7 |
| NURS-1701 Community/Home Nursing | 1 |
| Credit Hours | 8 |

**Summer Session**

| NURS-2301 Specialized Health Care Needs | 8 |
| Select one of the following: 3 |
| ENG-1020 College Composition II |               |
| ENG-102H Honors College Composition II |             |
| Credit Hours | 11 |

**Third Semester**

| NURS-2501 Health Deviations II | 8 |
| Credit Hours | 8 |

**Total Credit Hours** 64-69

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1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Recommended for students planning to transfer to a BSN program.

4. Students who transfer credits for ENG-1020 College Composition II with a grade of “C” or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

5. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

### Nursing (Access LPN to RN Track), Associate of Applied Science

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.

Note: This program admits students in the Spring Semester and it is a modified evening program.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

**Program contact:** Learn more

Learn more (p. 128) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- Practical Nursing, Certificate of Proficiency (p. 394)

### Program Admission Requirements

Applications may be submitted to the Department of Nursing after completing the requirements listed below:
Students who seek admission to the LPN to RN track must meet the following credentials for enrollment in NURS-160A Access to Registered Nursing and NURS-160D Health Deviations I for LPNs:

a. Licensed in Ohio without restriction
b. Graduated from an approved Practical Nursing Education Program
c. Achieved a grade of "C" or higher in each Practical Nursing course completed.
d. Credentialled to administer medication by the Ohio Board of Nursing (OBN)
e. Official LPN transcript

Applicants must be 18 years old and have a High School Diploma/GED. High school transcript must be sent to:

Tri-C
Office of the Registrar
P.O. Box 5966
Cleveland, OH 44101

A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from any courses that may be used to meet the general education requirements for the Associate of Applied Science Degree (no developmental courses).

Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support course from another accredited institution may use that institution’s cumulative GPA if they have 9 credit hours from any courses that may be used to meet the general education requirements (no developmental courses), and a GPA of 3.0 or greater. (Schools accepted by Tri-C)

For the student that has a degree from another institution, the degree GPA will take precedent over the Tri-C GPA, if that GPA is higher than the Tri-C GPA.

Applicants to the LPN to RN program may use their LPN official transcript for entrance if the overall GPA is a 3.0 or higher. (Schools accepted by Cuyahoga Community College.)

Applicants to the LPN to RN program may use their LPN official transcript for entrance if the overall GPA is a 3.0 or higher. (Schools accepted by Tri-C)

An official transcript must be submitted to Tri-C’s Enrollment Office (Metropolitan, Eastern, or Westshore Campus).

Complete the program admissions courses (listed below) with "C" or higher.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1010 &amp; CHEM-1020</td>
<td>Introduction to Inorganic Chemistry and Organic Chemistry and Biochemistry</td>
<td>3-8</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Other Information

- Number accepted per year: Space available basis. Modified evening classes admitted Spring.
- BIO-1100 Introduction to Biological Chemistry, or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry with a grade of "C" or higher in each.
- The Elsevier Admission Test (A2) is required for admission to the program. Students must achieve a grade of 75% or higher on the Math Skills and ***English Language portions of the exam. There is a limit of two attempts within a 12 month period. Students may attempt the exam one time a month. If a second attempt is needed to achieve a passing score, only the section(s) below 75% needs to be completed.
- ***The English portion of the exam is composed of three separate tests. The three tests are: Reading Comprehension, Vocabulary, and Grammar. All three sections must be taken for a score to be used for admission purposes.
- All students enrolled in Health Career and Nursing programs requiring off campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Log onto www.tri-c.edu/nursing for further information.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply the nursing process in managing care for groups of individuals and families in a variety of health care settings.
2. Utilize information from multiple sources for managing safe, effective and quality nursing care for groups of individuals and families in a variety of healthcare settings.
3. Utilize critical thinking to apply evidence based practice when managing care for groups of individuals and families in a variety of health care settings.
4. Apply effective communication skills to establish and maintain therapeutic and professional relationships in managing care for groups of individuals and families in a variety of health care settings.
5. Integrate principles of human development when providing nursing care for groups of individuals and families across the life span.
6. Incorporate knowledge of cultural and socioeconomic factors in the management of nursing care for groups of individuals and families in a variety of health care settings.
7. Deliver, safe, competent and quality patient centered nursing care within the role of the Associate Degree Nurse as a:
a. Provider of care: Integrate biopsychosocial and scientific principles when providing technically competent care for groups of individuals and families in a variety of health care settings.

b. Manager of care:
   i. Collaborate as a member of the health care team to manage the care of groups of individuals and families in a variety of health care settings.
   ii. Delegate activities to manage the care of groups of individuals and families in a variety of health care settings.

c. Member of the discipline of nursing:
   i. Practice within the ethical and legal framework of the nursing profession.
   ii. Formulate a plan for continuing professional development.
   iii. Identify resources for continuing professional development.

Note: The first semester of this program is Spring; the Second Semester is the Summer Session; the Third Semester is Fall, and the Fourth Semester is Spring.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
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</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>PSY-1010 General Psychology</td>
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<tr>
<td>PSY-101H Honors General Psychology</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

**First Semester**

| | Credit Hours |
| BIO-2331 Anatomy and Physiology I | 4 |
| NURS-160A Access to Registered Nursing | 3 |
| NURS-160D Health Deviations I for LPNs | 3 |
| Select one of the following: | 4 |
| PSY-2020 Life Span Development | 1 |
| PSY-202H Honors Life Span Development | 1 |
| **Total Credit Hours** | 14 |

**Second Semester**

| | Credit Hours |
| BIO-2341 Anatomy and Physiology II | 4 |
| BIO-2500 Microbiology | 4 |
| **Total Credit Hours** | 8 |

**Third Semester**

| | Credit Hours |
| NURS-1701 Community/Home Nursing | 1 |
| NURS-2301 Specialized Health Care Needs | 8 |
| ENG-1020 College Composition II | 3 |
| ENG-102H Honors College Composition II | 3 |
| **Total Credit Hours** | 15 |

**Fourth Semester**

| | Credit Hours |
| NURS-2501 Health Deviations II | 8 |
| **Total Credit Hours** | 57 |

1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Recommended for students planning to transfer to a BSN program.

2. Students who transfer credits for ENG-1020 College Composition II with a grade of "C" or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

3. MATH-1800 Special Topics in Mathematics - MATH-1820

Independent Study/Research in Mathematics may not be used to meet this requirement.

4. NURS-160A Access to Registered Nursing is a bridge course that replaces NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span, and NURS-1601 Health Deviations I.

5. After successful completion of NURS-160A Access to Registered Nursing & while enrolled in NURS-160D Health Deviations I for LPNs, students will be required to complete the Award of Comparable Credit Assessment of Prior Learning form requesting By-Pass credit for NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span & NURS-1601 Health Deviations I if eligible apply for transfer of credit for NURS-1300, NURS-1451 & NURS-1601 through the Career Technical Assurance Guide (CTAG) process. Awarded comparable or CTAG credit will not affect a student's GPA.

6. Students must maintain term enrollment in order to receive credit.

7. LPN's accepted into Cuyahoga Community College Nursing Program are required to take NURS-160D Health Deviations I for LPNs prior to progressing to NURS-2301 Specialized Health Care Needs. Credit Assessment of Prior Learning form requesting By-Pass credit for NURS-1300 Health Assessment, NURS-1451 Self-Care Needs: Adult Life Span & NURS-1601 Health Deviations I (16 Cr) or if eligible apply for transfer of credit for NURS-1300, NURS-1451 & NURS-1601 through the Career Technical Assurance Guide (CTAG) process. Awarded comparable or CTAG credit will not affect a student's GPA. Students must maintain term enrollment in order to receive credit.

**Nursing, Associate of Applied Science**

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.
Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/ programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

Note: Admissions Requirements for the Nursing Program are changing effective Fall 2020. Please see the Fall 2020 section on the Admissions requirement tab if you are applying to start the program in Fall 2020.

Program contact: Learn more

Learn more (p. 128) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Nursing (Accelerated Track), Associate of Applied Science (p. 359)
- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)
- Practical Nursing, Certificate of Proficiency (p. 394)

Related Training and Credentials
- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Fall 2019 Program Admission Requirements
Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- Please see application procedures (p. 116) for more information.
- Applicants must be 18 years old and have a High School Diploma/ GED. High school transcript must be sent to Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101.
- A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from any courses that may be used to meet the general education requirements for the Associate of Applied Science Degree (no developmental courses).
- Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support course from another accredited institution** may use that institution's cumulative GPA if they have 9 credit hours from any courses that may be used to meet the general education requirements for the Associate of Applied Science degree (no developmental courses), and a GPA of 3.0 or greater. (**Schools accepted by Tri-C)
- An official transcript must be submitted to Tri-C's Enrollment Office (Metropolitan, Eastern, or Westshore Campus).
- Complete the following ("C" grade or higher in each):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics ¹</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I ²</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM-1020</td>
<td>and Introduction to Organic Chemistry and Biochemistry</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

¹ Schools accepted by Tri-C
² Students who transfer credits for ENG-1020 College Composition II with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

Other Information
- The Elsevier Admission Test (A2) is required for admission to the program. Students must achieve a grade of 75% or higher on the Math Skills and ***English Language portions of the exam. There is a limit of two attempts within a 12 month period. Students may attempt the exam one time a month. If a second attempt is needed to achieve a passing score, only the section(s) below 75% needs to be completed.
- ***The English portion of the exam is composed of three separate tests. The three tests are: Reading Comprehension, Vocabulary, and Grammar. All three sections must be taken for a score to be used for admission purposes.
- Only one of the required science courses may be repeated once to improve a grade of less than "C". A grade of less than "C" received over 7 years ago will not count toward the "one science course" repeat rule.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry replace BIO-1100 Introduction to Biological Chemistry for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Background check and fingerprinting required. Log onto www.tri-c.edu/nursing for further information.
- Day and modified evening/weekend classes admitted Fall and Spring. Space available basis.

Fall 2020 Program Admission Requirements
Starting Fall 2020 the Division of Nursing will be transitioning to a one-plus-one curriculum. Effective Fall 2020, all Nursing students will need to apply to the Associate of Applied Science Degree program in Nursing.
Students who successfully complete the first year of the program will be awarded a certificate of proficiency in practical nursing and are eligible to sit for the NCLEX-PN.

The new nursing curriculum is presented as a career ladder concept based curriculum designed to improve nursing career mobility and provide seamless progression from nurse aide certification to practical nurse certification to the associate degree in applied science in nursing. Students who successfully complete the two prerequisite nursing courses (NURS-1000 and NURS-1010) are eligible to sit for the ODH STNA (Ohio Department of Health State Tested Nurse Aide) examination and progress to the nursing program after meeting all admission requirements. Students who successfully complete the first year of the program will be awarded a certificate of proficiency in practical nursing and are eligible to sit for the NCLEX-PN. Students who complete the second year of the nursing program will be awarded an associate degree in applied science and are eligible to sit for the NCLEX-RN. All students are admitted using a common admission criteria. The new admission criteria are as follows:

**Prerequisite Course Work**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>NURS-1000</td>
<td>Introduction to Health Care and Professional Nurse Concepts (5 week hybrid course)</td>
<td>1</td>
</tr>
<tr>
<td>NURS-1010</td>
<td>Introduction to Patient Care Concepts (10 week lab/clinical course)</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
</tbody>
</table>

1. BIO-2331 Anatomy and Physiology I must be completed with a grade of "B" or higher.
2. MATH-1240 Contemporary Mathematics or higher will be accepted to meet the math requirements for admission.
3. NURS-1000 is a prerequisite requirement for NURS-1010 along with completion of the HESI A2 examination. Courses will be flexibly scheduled so they can be completed in one semester.

- Applicants must be 18 years old and have a high school diploma transcript, GED equivalency or higher degree transcript on file in the Office of the Registrar
- A cumulative Grade Point Average (GPA) of 2.75 from Tri-C with a minimum of 9 credit hours from any course that maybe used to meet the general education requirements for the Associate of Applied Science Degree. If an applicant’s Tri-C GPA is less than 2.75, transfer GPA from an accredited institution as recognized by the college can be used for admission criteria only if the student has 9 credit hours of courses that maybe used to meet the general education requirements Associate of Applied Science Degree, and an overall GPA of 2.75 or higher. Note: Students who who have completed Health related courses may apply to use these courses to meet the 9 credit hour requirement. These courses are subject to division approval only.
- All applicants are required to take The Health Education Systems Inc Admission Assessment Exam-A2 (HESI A2) as part of the application process for entry into the Associate Degree Nursing Program. Students can complete the A2 at any time during the application process, but must complete it prior to beginning NURS 1010-Introduction to Patient Care Concepts and must achieve a minimum score of 75% on the Math and English** sections for consideration for the program. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 75% needs to be completed. There is a limit of 2 attempts in a 12-month period. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar. Please visit http://www.tri-c.edu/programs/nursing/hesi-a2-entrance-exam.html for detailed information on the HESI examination as well as how to register for the exam.
  - Complete and pass a background check that includes fingerprinting and BCI check.
  - Students will be required to have a "B" or higher in all required prerequisite and co-requisite sciences courses

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply the nursing process in managing care for groups of individuals and families in a variety of health care settings.
2. Utilize information from multiple sources for managing safe, effective and quality nursing care for groups of individuals and families in a variety of healthcare settings.
3. Utilize critical thinking to apply evidence based practice when managing care for groups of individuals and families in a variety of health care settings.
4. Apply effective communication skills to establish and maintain therapeutic and professional relationships in managing care for groups of individuals and families in a variety of health care settings.
5. Integrate principles of human development when providing nursing care for groups of individuals and families across the life span.
6. Incorporate knowledge of cultural and socioeconomic factors in the management of nursing care for groups of individuals and families in a variety of health care settings.
7. Deliver, safe, competent and quality patient centered nursing care within the role of the Associate Degree Nurse as a:
   a. Provider of care: Integrate biopsychosocial and scientific principles when providing technically competent care for groups of individuals and families in a variety of health care settings.
   b. Manager of care:
      i. Collaborate as a member of the health care team to manage the care of groups of individuals and families in a variety of health care settings.
      ii. Delegate activities to manage the care of groups of individuals and families in a variety of health care settings.
   c. Member of the discipline of nursing:
      i. Practice within the ethical and legal framework of the nursing profession.
      ii. Formulate a plan for continuing professional development.
      iii. Identify resources for continuing professional development.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
</tr>
</tbody>
</table>
Select one of the following:  
ENG-1010 College Composition I  
ENG-101H Honors College Composition I

Select one of the following:  
PSY-1010 General Psychology  
PSY-101H Honors General Psychology

Credit Hours 12

First Semester  
BIO-2331 Anatomy and Physiology I 4  
NURS-1300 Health Assessment * 2  
NURS-1451 Self-Care Needs: Adult Life Span 7  
Select one of the following:  
PSY-2020 Life Span Development 4  
PSY-202H Honors Life Span Development

Credit Hours 17

Second Semester  
BIO-2341 Anatomy and Physiology II 4  
BIO-2500 Microbiology 4  
NURS-1601 Health Deviations I 7  
NURS-1701 Community/Home Nursing 1

Credit Hours 16

Third Semester  
NURS-2301 Specialized Health Care Needs 8  
Select one of the following:  
ENG-1020 College Composition II 3  
ENG-102H Honors College Composition II

Credit Hours 11

Fourth Semester  
NURS-2501 Health Deviations II 8

Credit Hours 8  
Total Credit Hours 64

1 CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Recommended for students planning to transfer to a BSN program.

2 Students who transfer credits for ENG-1020 College Composition II with a grade of "C" or higher and do not have credit for ENG-1010 College Composition I will have ENG-1010 waived, but the required 6 credit hours in Communication/Mathematics/Natural & Physical Sciences must be earned.

3 MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

* For Students applying to start the Nursing program in Fall 2020, NURS-1000 and NURS-1010 will be accepted in place of NURS-1300 and NURS-1451.

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**Occupational Therapy Assistant Technology, Associate of Applied Science**

Occupational therapy practitioners help people of all ages gain skills needed to take part in meaningful work-related and daily activities, from dressing and feeding themselves, to work, school, play, leisure, and/or social participation.

This program prepares students to provide occupational therapy treatments and related tasks under the supervision of a Registered Occupational Therapist in a variety of settings, including, but not limited to: acute care, long term care, and rehabilitation facilities, school system, mental health agencies and institutions, home health care agencies, pediatric centers, and private practices. They may also be employed as activity coordinators.

The program requires five full-time semesters of study. All OTA students must complete Level II Fieldwork within 18 months following completion of academic preparation. All academic and fieldwork requirements must be completed before the student will be eligible to sit for the National Certification Examination.

The graduates of this program are eligible to sit for the National Certification Examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy, Inc. (NBCOT). Successful completion of this exam is required to apply for licensure by the Ohio Occupational Therapy, Physical Therapy and Athletic Trainers Board.

The conviction of a felony may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure. NBCOT offers an Early Determination Review to individuals who have been charged with or convicted of a felony. Further information regarding this issue can be obtained from:

NBCOT  
800 South Frederick Ave., Suite 200  
Gaithersburg, MD 20877-4150  
301-990-7979  
Website: www.nbcot.org

The OTAT program is fully accredited by The Accreditation Council for Occupational Therapy Education (ACOTE) of The American Occupational Therapy Association (AOTA) located at:

ACOTE  
c/o Accreditation Department  
4720 Montgomery Lane, Suite 200  
Bethesda, MD, 20814-3449  
Telephone: 301-652-2682
Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 3.0 admissions requirements, 2.50 overall
- 50 hours of documented volunteer experience under supervision of an occupational therapist or occupational therapist assistant. Prospective applicants have the option of taking the OTAT-1300 Occupational Therapy Principles (introductory course) in lieu of volunteer experience.
- Complete the following courses with grade of "C" or higher.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry (or sufficient score on Biology Placement Test)</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I (or BIO-2330)</td>
<td>4</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I 3
- ENG-101H Honors College Composition I

Other Information

- 30 students accepted per year.
- All science courses must have been completed within ten years of application submission, and may only be repeated once to improve a grade.
- Time limit on core courses is ten years.
- English and science courses may be repeated only one time to earn a grade of "C".
- Pass/No Pass grade options may not be used for prerequisite requirements.
- Paid work experience as a Rehab Aide/OT Aide will be considered in lieu of volunteer experience.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
- To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Criminal background check required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use knowledge of anatomy/physiology, human development and mental/physical conditions to the application of occupational therapy principles and safely administer effective treatment intervention to achieve expected outcomes as related to occupation.
2. Understand the distinct roles and responsibilities of the occupational therapist and occupational therapy assistant in the supervisory process.
3. Employ state licensure laws and regulations in all situations that include clinical & professional decision making.
4. Listen, speak, and contribute using interpersonal skills with clinical team members, clients, family and other relevant support persons within context of occupational therapy settings.
5. Use professional and appropriate medical terminology in all verbal, written, and electronic communication that is relevant to practitioners, family and clients in occupational therapy settings and follows guidelines and specific documentation formats required by state practice acts, practice settings, and other regulatory agencies.
6. Apply effective principles of time management, clinical reasoning, problem solving, safety awareness, and cultural sensitivity to clients and situations in occupational therapy settings.
7. Act professionally and ethically by upholding the ethical standards, values and attitudes of the occupational therapy profession.
8. Achieve entry-level competence by successfully completing academic and fieldwork education requirements and passing the certification examination.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td>BIO-2331 Anotomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MA-1020 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OTAT-1300 Occupational Therapy Principles</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>OTAT-1310 Task Analysis</td>
<td>2</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td>First Semester</td>
<td>MATH-1xxx 1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OTAT-1320 Fundamentals of Developmental Disabilities</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>OTAT-1330 Techniques in Developmental Disabilities</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OTAT-1850 Practicum I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PTAT-1300 Functional Anatomy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY-1010 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>Second Semester</td>
<td>BIO-2341 Anatomy and Physiology II</td>
<td>4</td>
</tr>
</tbody>
</table>
Program Admission Requirements
- High School Diploma/GED
- Aptitude test – contact Program Coordinator for information.
- Intent-to-hire agreement with participating contractor.

Other Information
- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.
2. Operate and maintain a variety of construction equipment in a safe and productive manner.
3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.
4. Plan and manage personal and professional life to accommodate all job requirements, including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.
5. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
6. Communicate verbally, nonverbally and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.
7. Be prepared to sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOE-1100</td>
<td>Operating Engineering Concepts</td>
<td>4</td>
</tr>
<tr>
<td>ATOE-1200</td>
<td>Basic Mechanical Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-1650</td>
<td>Graders and Plans</td>
<td>2</td>
</tr>
<tr>
<td>ATOE-1700</td>
<td>Paving, Tractor, Backhoe Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 12

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOE-2100</td>
<td>Mobile Crane</td>
<td>2</td>
</tr>
<tr>
<td>ATOE-2200</td>
<td>Mechanical Repair</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-2600</td>
<td>Bulldozer Practice</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-2620</td>
<td>Backhoe Practice</td>
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<tr>
<td>ATOE-xxxx</td>
<td>ATOE Elective course</td>
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Credit Hours 12-14

Summer Completion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATOE-2640</td>
<td>Advanced Grader Practice</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-2660</td>
<td>Grader Safety</td>
<td>2</td>
</tr>
</tbody>
</table>

Operating Engineers, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.
Operations Engineering Technology (Engineering Management), Associate of Applied Science

The Associate of Applied Science degree in Operations Engineering Technology with a concentration in Engineering Management is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/production setting on the engineering design side. Production, logistics, and the basics in engineering design is covered within the program. This program ties into the fundamentals of manufacturing with the fundamentals of engineering management. This program ties into 4-year bachelor degree programs aimed at industrial/manufacturing engineering.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 150) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science (p. 370)
- Operations Engineering Technology, Associate of Applied Science (p. 371)
- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 179)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 246)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 246)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)

Program Admission Requirements

- High School Diploma/GED
- Complete the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-0965</td>
<td>Intermediate Algebra</td>
<td>6</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>MET Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Read engineering drawings, with an understanding of Geometric Dimensioning & Tolerancing, and be able to measure parts against engineering drawings to determine conformity.
7. Create and execute a program management plan (Gantt Charts, etc.).
8. Interpret operations metrics (on-time delivery, defects parts per million, labor efficiency, equipment capacity utilization, material yield) in order to drive improvement.
9. Interpret calculation of cost of goods sold (overhead, direct/indirect labor, etc.).
10. Apply concepts of workplace ergonomics to determine proper and safe operations.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR</td>
<td>3</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>MET Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

**Second Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
</tbody>
</table>

Select one of the following:

- CHEM-1300 General Chemistry I
- CHEM-130L General Chemistry Laboratory I
- CHEM-130H Honors General Chemistry I
Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science

The Associate of Applied Science degree in Operations Engineering Technology with a concentration in Automated Manufacturing is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/production setting that uses automated manufacturing processes. Production, logistics, basic design principles, automated manufacturing processes, and the basics in managing manufacturing processes is covered within the program. The program is designed to tie the fundamentals of automated manufacturing with the fundamentals of managing production processes. This program ties into 4-year bachelor degree programs aimed at automated manufacturing.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar or RegistrarOffice@tri-c.edu. Learn more (p. 149) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**
- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 369)
- Operations Engineering Technology, Associate of Applied Science (p. 371)
- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 179)
- Machine Tools Operation, Certificate of Proficiency (p. 332)
- Quality Control, Certificate of Proficiency (p. 402)
- Digital Design & Product Innovation, Short-Term Certificate (p. 270)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)

**Program Admissions Requirements**
- High School Diploma/GED
- Complete the following courses with a grade of "C" or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-0965</td>
<td>Intermediate Algebra (or appropriate score on Math Placement Test)</td>
<td>6</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize basic computer skills including word processing, spreadsheet, and database, (i.e., MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Utilize a working understanding of statistical process controls (SPC) and pre-production approval process (PPAP) to validate both product and process compliance.
7. Explain and apply Computer Numerical Control (CNC) and Program Logic Controller (PLC) programming concepts.
8. Understand and follow preventative maintenance strategy.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>4</td>
</tr>
<tr>
<td>MET-1100</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1220</td>
<td>3</td>
</tr>
<tr>
<td>MET-1400</td>
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<tr>
<td>MET-2140</td>
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<tr>
<td>MET-2250</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>15</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1540</td>
<td>3</td>
</tr>
<tr>
<td>MET-2260</td>
<td>3</td>
</tr>
<tr>
<td>MET-XXX</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-2400</td>
<td>3</td>
</tr>
<tr>
<td>MET-2750</td>
<td>3</td>
</tr>
<tr>
<td>MET-XXX</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>Total Credit Hours</td>
<td>60</td>
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</table>

1. CNST-1750 Construction Safety may be used to meet this requirement.
2. MATH-1610 Calculus may be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.
• Digital Manufacturing and Product Launch, Short-Term Certificate (p. 271)

Program Admission Requirements

• High School Diploma/GED
• Complete the following courses with a grade of "C" or higher

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
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<td>Intermediate Algebra (or appropriate score on Math Placement Test)</td>
<td>6</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Read engineering drawings, with an understanding of Geometric Dimensioning & Tolerancing, and be able to measure parts against engineering drawings to determine conformity.
7. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.
8. Utilize a working understanding of statistical process controls (SPC) and pre-production approval process (PPAP) to validate both product and process compliance.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1351</td>
<td>Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR ¹</td>
<td>3</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD ²</td>
<td>3</td>
</tr>
<tr>
<td>MET-1631</td>
<td>Industrial Supply Logistics</td>
<td>2</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra ³</td>
<td>4</td>
</tr>
<tr>
<td>MET-2070</td>
<td>Introduction to Industrial Warehousing</td>
<td>2</td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>MET-XXXX</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics ⁶</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II ⁴</td>
<td>3</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-1310</td>
<td>Introduction to Environmental Law ⁵</td>
<td>4</td>
</tr>
<tr>
<td>MET-2400</td>
<td>Statistical Quality Control ⁶</td>
<td>3</td>
</tr>
<tr>
<td>MET-2750</td>
<td>Technical Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-130L</td>
<td>General Chemistry Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>Honors General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 60-61

¹ CNST-1750 Construction Safety may be used to meet this requirement.
² CNST-1731 Construction Print Reading may be used to meet this requirement.
³ MATH-1610 Calculus I can be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.
⁴ COMM-1010 Fundamentals of Speech Communication may be used to meet this requirement.
⁵ BADM-2151 Business Law may be used to meet this requirement.
⁶ MET-2430 Engineering Probability and Statistics or MATH-1410 Elementary Probability and Statistics I may be used to meet this requirement.
Ophthalmic Medical Assisting, Short-Term Certificate

Ophthalmic Assisting

Ophthalmic Assistants are ophthalmic allied health professionals who perform procedures under the supervision of an Ophthalmologist. An Ophthalmic Assistant may be responsible for taking patient histories, providing patient services, administering diagnostic tests and maintenance of ophthalmic equipment. The Ophthalmic Medical Assisting program combines academic instruction and clinical experience under professional supervision.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 130) about how certificate credits apply to the related degree.

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students or appropriate score on Math Placement Test
- GPA required: 2.00

Other Information

- 14 students accepted per year
- Criminal background check required.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.
2. Apply knowledge of office procedures within an Ophthalmic practice.
3. Maintain accurate electronic patient records in accordance with local, state, and federal guidelines.
4. Conduct pre-assessment screenings and ocular preparations using appropriate equipment and tools.
5. Work within safety standards that govern Ophthalmology.
6. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1230 Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>OPT-1400 Introduction to Fabrication Principles</td>
<td>1</td>
</tr>
<tr>
<td>OPT-1710 Introduction to Patient Care</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-1721 Advanced Patient Care</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1911 Ophthalmic Assisting Directed Practice</td>
<td>4</td>
</tr>
<tr>
<td>OPT-2702 Refractometry</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Optical Technology, Associate of Applied Science

Dispensing opticians are those professionals who fit eyeglasses or contact lenses as prescribed by an Ophthalmologist or Optometrist. These professionals analyze prescriptions along with the patient’s occupation and habits in order to make recommendations about lenses and spectacle frames. Licensed opticians may work in retail, laboratory, or private practice settings.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 130) about how certificate credits apply to the related degree.

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students or appropriate score on Math Placement Test
- GPA required: 2.00 overall
Other Information

- 14 students accepted per year
- Criminal background check required.
- Acceptance into a Tri-C Healthcare program with a BCI record does not guarantee a clinical site placement, acceptance by the profession’s licensure/registration board, or employment upon graduation.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html

To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally and in writing to clients, colleagues, and other professionals.
2. Design eyewear by combining accurate physiognomic measurements with knowledge of ocular anatomy, geometric optics and prescription analysis.
3. Demonstrate proficiency in the operation and function of equipment and tools used in the fabrication and verification of eyewear.
4. Perform all tasks associated with the fitting and dispensing of eyewear.
5. Apply knowledge of ocular physiology and of local, state and federal guidelines in order to maintain accurate medical records.
6. Demonstrate an understanding of the ophthalmic profession and optical manufacturing process.
7. Work within the safety standards that govern opticianry.
8. Discuss Ohio and national statutes that govern opticianry.
9. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1230 Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1310 Theoretical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1400 Introduction to Fabrication Principles</td>
<td>1</td>
</tr>
<tr>
<td>OPT-1411 Basic Spectacle Fabrication</td>
<td>1</td>
</tr>
<tr>
<td>OPT-1510 Optical Dispensing I</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1610 Contact Lens I</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Second Semester

| OPT-1320 Theoretical Optics II | 2 |
| OPT-1421 Advanced Spectacle Fabrication | 1 |
| OPT-1520 Optical Dispensing II | 3 |
| OPT-1621 Contact Lens II | 2 |
| PHYS-1300 Physics of Optical Materials | 4 |
| **Credit Hours** | **12** |

Summer Session

Select one of the following:

| ENG-1010 College Composition I | 3 |
| ENG-101H Honors College Composition I | |

Select one of the following:

| PSY-1010 General Psychology | |
| PSY-101H Honors General Psychology | |
| **Credit Hours** | **6** |

Third Semester

| OPT-1710 Introduction to Patient Care | 3 |
| OPT-2501 Optical Business | 3 |
| OPT-2550 Advanced Optical Dispensing Lab | 1 |
| OPT-2650 License Review Spectacle | 1 |
| OPT-2940 Optical Field Experience I | 2 |
| OPT-2971 Optical Field Experience Seminar I | 3 |
| **Credit Hours** | **13** |

Fourth Semester

| OPT-2660 License Review Contact Lens | 1 |
| OPT-2702 Refractometry | 2 |
| OPT-2950 Optical Field Experience II | 2 |
| OPT-2981 Optical Field Experience Seminar II | 3 |
| Communications requirement (p. 31) | 3 |
| Select one of the following: | 3 |
| PHIL-2050 Bioethics | |
| PHIL-205H Honors Bioethics | |
| **Credit Hours** | **14** |
| **Total Credit Hours** | **61** |

A student who receives a one-year certificate can work in a retail outlet, optical laboratory or a doctor’s office. Other career paths can lead to related work as a sales representative for optical products. Note: In order

Optical Technology, Certificate of Proficiency
to be eligible to take the State Board Exam for licensure, you must finish the Optical Technology degree program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 130) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students or appropriate score on Math Placement Test.
- 2.0 GPA

Other Information
- 14 students accepted per year

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally and in writing to clients, colleagues, and other professionals.
2. Design eyewear by combining accurate physiognomic measurements with knowledge of ocular anatomy, geometric optics and prescription analysis.
3. Demonstrate proficiency in the operation and function of equipment and tools used in the fabrication and verification of eyewear.
4. Perform all tasks associated with the fitting and dispensing of eyewear.
5. Apply knowledge of ocular physiology and of local, state and federal guidelines in order to maintain accurate medical records.
6. Demonstrate an understanding of the ophthalmic profession and optical manufacturing process.
7. Work within the safety standards that govern opticianry.
8. Discuss Ohio and national statutes that govern opticianry.
9. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
</tr>
<tr>
<td>OPT-1310</td>
<td>Theoretical Optics I</td>
</tr>
<tr>
<td>OPT-1400</td>
<td>Introduction to Fabrication Principles</td>
</tr>
<tr>
<td>OPT-1411</td>
<td>Basic Spectacle Fabrication</td>
</tr>
<tr>
<td>OPT-1510</td>
<td>Optical Dispensing I</td>
</tr>
<tr>
<td>OPT-1610</td>
<td>Contact Lens I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-1320</td>
<td>Theoretical Optics II</td>
</tr>
<tr>
<td>OPT-1421</td>
<td>Advanced Spectacle Fabrication</td>
</tr>
<tr>
<td>OPT-1520</td>
<td>Optical Dispensing II</td>
</tr>
<tr>
<td>OPT-1621</td>
<td>Contact Lens II</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>31</td>
</tr>
</tbody>
</table>

Painting, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
• Aptitude Test – contact program coordinator for information
• Intent-to-hire agreement with participating contractor

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customer’s standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.
7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-1300</td>
<td>Introduction to Painting, Drywall Finishing, and Glazing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1320</td>
<td>Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-1330</td>
<td>Filling Compounds and Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1340</td>
<td>Wall Preparation and Repair</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1620</td>
<td>Wood Finishing</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1650</td>
<td>Blueprints I: Construction Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-2400</td>
<td>Advanced Rigging &amp; Hoisting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1640</td>
<td>Rigging &amp; Hoisting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1660</td>
<td>Labor in American Society</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2320</td>
<td>Safe Work Practices</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-2330</td>
<td>Spray &amp; Industrial Painting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2370</td>
<td>Abrasives Blasting Techniques</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2380</td>
<td>Special Coating and Decorative Finishes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Summer Completion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-2340</td>
<td>Blueprints II: Advanced Reading and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2350</td>
<td>Advanced Spray and Industrial Painting</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-2360</td>
<td>Foreman Training</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Total Credit Hours: 34

Paralegal Studies, Post-Degree Professional Certificate

This certificate program is designed for students who already have an associate or bachelor’s degree. The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in law office technology, law office administration, and computer assisted legal research. Graduates are prepared for careers in business, industry or in non-profit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice, or represent a client in court. This is an American Bar Association approved program.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Gainful Employment Disclosure

Program Admission Requirements

• High School Diploma/GED
• Associate, Bachelor, or Master’s degree from an accredited institution
• Transcripts verifying degree must be submitted to the Registrar’s Office
• Complete the following:
  • PL-1001 Introduction to the Paralegal Profession with “B” or higher
  • Program application form (distributed during PL-1001)
  • Personal narrative

Learn more (p. 105) about how certificate credits apply to the related degree.
Paralegal Studies, Associate of Applied Business

The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in civil procedure, law office technology, basic legal research and writing, computer assisted legal research, and various legal specialty areas. Graduates are prepared for careers in business, industry or nonprofit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice or represent a client in court. This is an American Bar Association approved program.

Program contact: Learn more

Learn more (p. 105) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Legal Administrative Specialist, Certificate of Proficiency (p. 331)
- Paralegal Studies, Post-Degree Professional Certificate (p. 376)

Program Admission Requirements

- High School Diploma/GED
- ENG-1010 College Composition I or ENG-101H Honors College Composition I
- Complete the following:
  - PL-1001 Introduction to the Paralegal Profession with “B” or higher.
  - Program application form (distributed during PL-1001).
  - Personal narrative.
- GPA required: 2.50 overall and 2.75 in Paralegal courses to graduate

Other Information

- PL grades below a "C" will not be accepted and those courses will have to be re-taken.
- Submit all college/university transcripts to:
  Office of the Registrar

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL-1001 Introduction to the Paralegal Profession</td>
<td>3</td>
</tr>
<tr>
<td>PL-1300 Civil Procedure</td>
<td>3</td>
</tr>
<tr>
<td>PL-1401 Legal Research and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>PL-1502 Law Office Technology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL-2301 Torts and Evidence</td>
<td>4</td>
</tr>
<tr>
<td>PL-2401 Legal Research and Writing II</td>
<td>3</td>
</tr>
<tr>
<td>PL-2440 Business Transactions</td>
<td>3</td>
</tr>
<tr>
<td>PL-xxxx Any PL elective course</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL-2851 Paralegal Practicum</td>
<td>1</td>
</tr>
<tr>
<td>PL-2991 Paralegal Capstone</td>
<td>1</td>
</tr>
<tr>
<td>PL-xxxx Any PL elective course</td>
<td>2-3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>29-30</strong></td>
</tr>
</tbody>
</table>

1 May be waived with documentation of comparable or equivalent experience.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate appropriately and professionally, both verbally (including to prepare, conduct and summarize party, witness, and expert interviews to aid in case development) and in writing (including pleadings, contracts, discovery, briefs, motions, forms, etc.) to diverse audiences while maintaining confidentiality and data security.

2. Act in accordance with the rules of professional conduct, attorney and paralegal ethical codes, and organizational policies which includes the adaptability and flexibility to work as an effective member of a legal team in a variety of roles, as well as the ability to organize, prioritize, schedule and track assignments and appointments to meet deadlines.

3. Use the latest technology and software utilized by the legal community to ensure accurate billing and timekeeping, file and maintain case information, and prepare accurate legal documents and correspondence.

4. Demonstrate research and investigative skills to analyze fact patterns; identify legal issues; locate, apply, and properly cite law with proficiency in both printed and online resources.

5. Demonstrate effective legal knowledge and practical skills necessary to perform substantive legal work under the direction of an attorney, while maintaining a client service orientation.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting (or higher)</td>
</tr>
<tr>
<td>PL-1001</td>
<td>Introduction to the Paralegal Profession</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations (or higher)</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
</tr>
<tr>
<td>PL-1300</td>
<td>Civil Procedure</td>
</tr>
<tr>
<td>PL-1401</td>
<td>Legal Research and Writing I</td>
</tr>
<tr>
<td>PL-1502</td>
<td>Law Office Technology</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PL-2301</td>
<td>Torts and Evidence</td>
</tr>
<tr>
<td>PL-2401</td>
<td>Legal Research and Writing II</td>
</tr>
<tr>
<td>PL-2440</td>
<td>Business Transactions</td>
</tr>
<tr>
<td>PL-xxxx</td>
<td>Any PL elective course</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
</tr>
<tr>
<td>EHS-1310</td>
<td>Introduction to Environmental Law</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>15-16</td>
</tr>
</tbody>
</table>

Fourth Semester

| PL-2851        | Paralegal Practicum | 1 |
| PL-2991        | Paralegal Capstone | 1 |
| PL-xxxx        | Any PL elective course | 2-3 |
| PL-xxxx        | Any PL elective course | 3 |
| PL-xxxx        | Any 2000-level PL elective course | 3 |
| Select one of the following: | 3 |
| POL-1020       | State & Local Government | |
| POL-2100       | Constitutional Law | |
| **Credit Hours** | 13-14 |

| Total Credit Hours | 61-63 |

Can be waived with documentation of equivalent experience. Minimum of 60 credits for the degree still required.

PL grades below a “C” will not be accepted and those courses will have to be re-taken.

Paramedic, Certificate of Proficiency

This program is designed for Emergency Medical Technicians interested in pursuing Paramedic certification. It prepares students to advance their career with ambulance and Emergency Medical Services (EMS). As many EMS services are a component of fire departments, it is also important for those pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Paramedic examination. Successful completion of this examination is necessary for State of Ohio Paramedic certification. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Gainful Employment Disclosure
Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test.
- Candidates must have completed the EMT Basic Short-Term Certificate. Contact the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information and an application packet.
- GPA required: 2.00 certificate courses
- One year EMT Basic experience recommended for entry into EMT Paramedic
- EMT-Basic Ohio Certification prior to first day of EMT-2330 Paramedic Theory I.
- One year EMT-Basic experience recommended for entry into EMT Paramedic.
- Signed felon-misdemeanor statement.
- Certain clinical sites require drug screen.

Other Information

- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-P available at Eastern, Metropolitan, Western, Westshore Campuses and off-site locations.
- Students who completed EMT training at another institution must complete EMT-1401 Anatomy & Physiology for Paramedics or BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II prerequisite for Paramedic program.
- Criminal background check required.
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised/ Administrative Code 4765.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.
2. Exhibit professional, ethical and compassionate behavior, which follows department, city, state and federal regulations, when interacting with diverse groups of patients, their families, health care professionals, and the community to promote sound physical, psychological, spiritual health and safety at all times.
3. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient and formulate and initiate the treatment plan needed to optimize the patient’s outcome within Paramedic’s scope of practice.
4. Perform pre-hospital assessments and treatments using advanced medical techniques and equipment available within the Paramedic’s scope of practice.
5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.
6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.
7. Identify stress within myself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.
8. Prepared to sit for the National Registry of EMTs Paramedic Certification Exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1401 Anatomy &amp; Physiology for Paramedics</td>
<td>4</td>
</tr>
<tr>
<td>First Semester Credit Hours</td>
<td></td>
</tr>
<tr>
<td>EMT-2330 Paramedic Theory I</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2350 Paramedic Theory III</td>
<td>6</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>12</td>
</tr>
<tr>
<td>Second Semester Credit Hours</td>
<td></td>
</tr>
<tr>
<td>EMT-2340 Paramedic Theory II</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2360 Paramedic Theory IV</td>
<td>6</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>12</td>
</tr>
<tr>
<td>Summer Completion Credit Hours</td>
<td></td>
</tr>
<tr>
<td>EMT-2371 Paramedic Capstone Course</td>
<td>5</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>33</td>
</tr>
</tbody>
</table>

1 BIO-2331 Anatomy and Physiology I & BIO-2341 Anatomy and Physiology II together will be accepted in place of EMT-1401 Anatomy & Physiology for Paramedics.
2 Consecutive eight-week course.
3 All certificate courses must be completed with a "C" or higher in order to be awarded the Certificate of Proficiency in Paramedic.

Passenger Bus Training

Program description

40 hours of instruction for current Ohio CDL holders only. Includes classroom and hands-on training and observation time.
Other important information
Prerequisites:
• You must be 18 years of age
• You must possess a current Ohio CDL A or B license
• You must possess a current DOT physical/drug screen card
A separate Truck Driving application is required (available online or in person).
This CDL Training Program is licensed by the Ohio Department of Public Safety as a CDL driver training school.

Program cost
$900 plus $200 non-refundable administrative fee

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.
Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Tri-C Achievement Award

Related Programs/Training
• Truck Driving and Logistics (Workforce Training Programs) (p. 152)
Learn more about Passenger Bus Training

Patient Navigator, Short Term Certificate

Learn more about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Medical Assisting, Associate of Applied Science degree (p. 348)

Program Admission Requirements
• Graduate from a CAAHEP or ABHES accredited medical assisting program. Current credential in medical assisting (CMA, CCMA, or RMA accepted). Program approval.
• Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
• MATH-0955 Beginning Algebra or higher or appropriate score on Math Placement Test.
• Current CPR for Health Care Provider from American Heart Association.
• 2.5 GPA.
• 15 students accepted per year.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Patient Engagement. Determine patient’s understanding of their plan of care and identify barriers to following the plan of care.
2. Resource Coordination. Assist patient in navigating the healthcare system and outside resources in order to comply with their plan of care.
3. Communication. Use effective communication with diverse patient populations and healthcare team to support positive patient outcome
4. Teamwork. Work independently and as a member of a health care team within scope of practice to support patient outcomes.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-2600</td>
<td>Patient Navigator Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>MA-2610</td>
<td>Advanced Health Care Delivery</td>
<td>2</td>
</tr>
<tr>
<td>MA-2620</td>
<td>Patient-Centered Medical Home</td>
<td>2</td>
</tr>
<tr>
<td>MA-2840</td>
<td>Patient Navigator Practicum</td>
<td>3</td>
</tr>
</tbody>
</table>
Payroll, Certificate of Proficiency

The Payroll Certificate prepares students for entry-level employment as payroll clerks. Payroll clerks are responsible for handling payroll issues, tax preparation, and year-end reporting for organizations and companies. The one-year certificate program is designed to accommodate those who are employed full-time or are attending college on a part-time basis, seeking to upgrade their existing employment skills or begin a job in payroll. This program will also help prepare those students who want to pursue certification credentials through the American Payroll Association.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 95), here (p. 95), here (p. 97), and here (p. 97) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure

Program Admission Requirements

• High School Diploma/GED not required, but highly recommended.
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
• MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate payroll and related information both verbally and in writing, relative to their knowledge and skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to process payroll in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental accounting processes to properly record routine and nonroutine payroll transactions.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record and process payroll transactions.

5. Be prepared to sit for the Fundamental Payroll certification examination presented by the American Payroll Association.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</td>
<td>2</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-xxxx</td>
<td>Any ACCT elective course</td>
<td></td>
</tr>
<tr>
<td>FIN-xxxx</td>
<td>Finance Elective</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 16

Credit Hours 14-15

Total Credit Hours 30-31

1 ACCT-1020 Applied Accounting cannot be used to fulfill elective requirement.

Elective

Choose one elective from the following courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2041</td>
<td>Business Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2310</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2500</td>
<td>Governmental/Non-Profit Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2830</td>
<td>Cooperative Field Experience</td>
<td>2-3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
</tbody>
</table>
Find Your Major or Program - Cuyahoga Community College 2019-2020 Catalog

Payroll/PayTrain Certificate (FPC/CPP)

Program description
In cooperation with the American Payroll Association, Corporate College presents the PayTrain College and University® Program for payroll professionals. Comprised of two professional development courses, PayTrain Level 1 and PayTrain Level 2, this program is designed for all levels of payroll administration. Whether you are interested in preparing for the Fundamental Payroll Certification (FPC) or Certified Payroll Professional (CPP) certification exams, or are new to the industry and need to learn the basics of payroll, this program can help you meet your goals.

PayTrain Level 1
Learn the fundamental payroll calculations and applications necessary for individuals who are new to the payroll industry, those who support the payroll industry, and those who are preparing for the FPC or CPP certification examinations. This program will provide you with the basic knowledge and skills required to maintain payroll compliance and prevent costly penalties.

PayTrain Level 2
Students will be provided with an in-depth understanding of the advanced payroll topics necessary for payroll managers and supervisors. This program is ideal for experienced payroll professionals seeking compliance training, professional development, or CPP certification preparation.

Other important information
For information about the exam application, costs, test dates, testing locations, etc..., please visit the APA website links below. Please note the exam fee is not part of the Corporate College course fee.

- Fundamental Payroll Certification Exam Information
- Certified Payroll Professional Exam Information

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZFIN-1055</td>
<td>Payroll Level I: Fundamental Payroll Certification (FPC)</td>
<td>3</td>
</tr>
<tr>
<td>ZFIN-1056</td>
<td>Payroll Level II: Certified Payroll Professional (CPP)</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Accounting

To Register for and Learn more about Payroll/PayTrain Certificate (FPC/CPP).

Personal Chef, Certificate of Proficiency

The Personal Chef Certificate of Proficiency provides knowledge and skills needed to succeed in the personal chef industry. Career opportunities would be to own and operate your own personal chef business.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 100) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements
- High School Diploma/GED
- ENG-0990 Language Fundamentals II or appropriate English Placement Score.
- MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate Math Placement Score.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Effectively communicate verbally and in writing with customers and other professionals.
2. Plan, prepare, and properly store foods using personal chef style recipes, tools, equipment and safe and sanitary procedures that meet the customer needs/requirements.
3. Plan, determine and develop marketing, legal, financial, insurance, and sales strategies to establish and operate an effective Personal Chef business.
4. Successfully complete ServSafe Certification Exam.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1020 Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031 Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040 Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1180 Event Planning Essentials</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1552 Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1451 Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-1710 Doing Business as a a Personal Chef</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2330 Menus and Facilities Planning &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2500 Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700 Hospitality Purchasing</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours 15

Total Credit Hours 30

**Pharmacy Technician, Certificate of Proficiency**

A pharmacy technician assists the pharmacist activities and processes in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients' pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations.

Graduates will qualify for Ohio Board of Pharmacy registration as Pharmacy Technicians and will be prepared to take the national Pharmacy Technician Certification Examination.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu

Learn more (p. 130) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure**

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 2.00 admission requirements; 2.00 overall.
- Complete the following courses with grade of "C" or higher.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-0955</td>
<td>Beginning Algebra (or appropriate score on Math Placement Test to place into MATH-1190)</td>
<td>6</td>
</tr>
</tbody>
</table>

Select one of the following: 3-8

- BIO-1100 Introduction to Biological Chemistry
- CHEM-1010 & CHEM-1020 Introduction to Inorganic Chemistry and Introduction to Organic Chemistry and Biochemistry

Select one of the following: 3

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

**Other Information**

- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Interview with program manager encouraged.
- Criminal background check required.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.
2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.
3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.
4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one’s self, relationships and work.

5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.

6. Sit for Pharmacy Technician Certification exam.

### Suggested Semester Sequence

**Program Admissions Requirements Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry 1</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050</td>
<td>Human Biology 2</td>
<td>3</td>
</tr>
<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory 2</td>
<td>1</td>
</tr>
<tr>
<td>PHM-1300</td>
<td>Introduction to Pharmacy Practice</td>
<td>3</td>
</tr>
<tr>
<td>PHM-1350</td>
<td>Pharmacy Practice I</td>
<td>3</td>
</tr>
<tr>
<td>PHM-1450</td>
<td>Pharmacology and Therapeutic Principles I</td>
<td>3</td>
</tr>
<tr>
<td>PHM-1751</td>
<td>Medication Calculations for Sterile Preparations</td>
<td>1</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHM-1360</td>
<td>Pharmacy Practice II</td>
<td>3</td>
</tr>
<tr>
<td>PHM-1460</td>
<td>Pharmacology and Therapeutic Principles II</td>
<td>3</td>
</tr>
<tr>
<td>PHM-1760</td>
<td>Calculations for Compounding and Dispensing</td>
<td>1</td>
</tr>
<tr>
<td>PHM-1860</td>
<td>Pharmacy Technology Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>PHM-2080</td>
<td>Pharmacy Technician Examination Review</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

31

A pharmacy technician assists the pharmacist with the day-to-day activities in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients’ pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations. Graduates will be prepared to take the national Pharmacy Technician Certification Examination, recognized by the Ohio Board of Pharmacy for advanced registration and duties, and will hold a college degree that will contribute to professional advancement.

**Program contact:** Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 130) about how certificate credits apply to the related degree.

### Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 2.00 admissions requirements, 2.00 overall

Complete the following courses with a grade of "C" or higher:

**Code** | **Title** | **Credit Hours**
--- | --- | ---
MATH-0955 | Beginning Algebra (or appropriate score on Math Placement Test to place into MATH-1190) | 6

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
</tr>
<tr>
<td>&amp; CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
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</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
</tbody>
</table>

### Other Information

- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Criminal background check required.
Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.
2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.
3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.
4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one’s self, relationships and work.
5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.
6. Sit for Pharmacy Technician Certification exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry (^1)</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>6</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050 Human Biology (^2)</td>
</tr>
<tr>
<td>BIO-105L Human Biology Laboratory</td>
</tr>
<tr>
<td>PHM-1300 Introduction to Pharmacy Practice</td>
</tr>
<tr>
<td>PHM-1350 Pharmacy Practice I</td>
</tr>
<tr>
<td>PHM-1450 Pharmacology and Therapeutic Principles I</td>
</tr>
<tr>
<td>PHM-1751 Medication Calculations for Sterile Preparations</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHM-1360 Pharmacy Practice II</td>
</tr>
<tr>
<td>PHM-1460 Pharmacology and Therapeutic Principles II</td>
</tr>
<tr>
<td>PHM-1760 Calculations for Compounding and Dispensing</td>
</tr>
<tr>
<td>PHM-1860 Pharmacy Technology Practicum I</td>
</tr>
<tr>
<td>PHM-2080 Pharmacy Technician Examination Review</td>
</tr>
<tr>
<td>Select one of the following:</td>
</tr>
<tr>
<td>MATH-1190 Algebraic and Quantitative Reasoning</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics</td>
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Third Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MA-1020 Medical Terminology I</td>
</tr>
<tr>
<td>PHM-2701 Current Topics in Pharmacy Practice</td>
</tr>
<tr>
<td>PHM-2860 Pharmacy Technology Practicum II</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2500 Microbiology</td>
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<tr>
<td>CHEM-1080 Herbal Medicines and Natural Products</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>IT-1090 Computer Applications</td>
</tr>
<tr>
<td>IT-109H Honors Computer Applications</td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1100 Personal Health Education</td>
</tr>
<tr>
<td>PHM-2870 Pharmacy Technology Practicum III</td>
</tr>
<tr>
<td>Communications/Mathematics/Natural Sciences requirement (p. 31)</td>
</tr>
<tr>
<td>Select one of the following:</td>
</tr>
<tr>
<td>PHIL-2050 Bioethics</td>
</tr>
<tr>
<td>PHIL-205H Honors Bioethics</td>
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<table>
<thead>
<tr>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>12</td>
</tr>
</tbody>
</table>

Total Credit Hours

| 62-63 |

Physical Therapist Assisting Technology, Associate of Applied Science

Physical therapy provides services to patients and clients of all ages who have impairments, functional limitations, disabilities or changes in physical function and health status resulting from injury, disease, or other causes. The physical therapist assistant works under the supervision of the licensed physical therapist to provide treatments in a variety of health care settings such as hospitals, extended care centers, school systems, ambulatory care centers, private practice and other centers where physical therapists are employed. Upon successful completion of the program, the student is eligible to take an exam to qualify for licensure in the state in which the graduate chooses to practice.

Program contact: Learn more

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

1. CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry together will be accepted in place of BIO-1100 Introduction to Biological Chemistry.
2. BIO-2331 Anatomy and Physiology I will be accepted in place of BIO-1050/105L.
• High School Diploma/GED
• Completion of a total of 40 hours of work, volunteering and/or observation in at least two (2) different types of physical therapy settings under the supervision of a Physical Therapist or Physical Therapist Assistant. These hours must be documented on our Experience Verification Form. These hours must be completed within the 2 year period prior to the date of your application.
• An overall GPA of 2.7 must be achieved and be maintained. Only accredited college and university credits as listed http://www.tri-c.edu/transfer-center/transfer-of-credit-to-tri-c.html will be accepted. Overall GPA is calculated based on all previous college coursework completed through the semester prior to the date of application.
• Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html
To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
• Complete the following courses with "C" grade or higher:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I (or BIO-2330)</td>
<td>4</td>
</tr>
<tr>
<td>HTEC-1000</td>
<td>Introduction to Patient Care</td>
<td>1</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-0955</td>
<td>Beginning Algebra ( or appropriate score on Math Placement Test to place into MATH-1240)</td>
<td>6</td>
</tr>
</tbody>
</table>

Select one of the following: 3

| ENG-1010 | College Composition I                      | 3            |
| ENG-101H | Honors College Composition I               |              |

1 Total GPA for these 4 courses (ENG-1010, BIO-2331, HTEC-1000, and MA-1020) must be 3.0 or above.

Other Information
• 24 students accepted per year
• All science courses must have been completed within the past 10 years.
• Candidates must achieve a minimum of a 3.0 cumulative grade point average (GPA) based on a 4.0 scale for the following core courses (or transfer of comparable courses from another college or university). All admissions requirement courses must have a grade of "C" or better and eligibility for MATH-1240 (or higher level). Admissions requirement courses are ENG-1010, BIO-2331, HTEC-1000, and MA-1020. Students may only repeat an admission requirement course one time to improve their grade and a "W" counts as an attempt.
• For students applying for admission to the program for 2017 and beyond, we can choose not to consider grades from another institutions transcript that are older than 7 years and that negatively impact the overall GPA. In this case, we will not accept any coursework from that transcript, even if that coursework meets current prerequisite requirements.
• Criminal background check required.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Safely administer effective treatment interventions as defined by the Physical Therapist’s plan of care, adjusting to the patient’s physical, emotional, and cultural responses; instructs and educates the patient, family and/or caregivers in continued care and injury prevention.
2. Educate others regarding the role and scope of practice of the Physical Therapist Assistant in the implementation of the plan of care as established by the supervising Physical Therapist and communicate patient’s status to the physical therapist.
3. Obtain pertinent data; recognize changes and/or responses of patient conditions and environmental hazards that jeopardize safety; modify intervention within the plan of care and takes appropriate action.
4. Act professionally and ethically according to the APTA Code of Ethics and Standard of Conduct including social responsibility, commitment to patients and consumer needs, lifelong learning, and the physical therapy profession.
5. Identify and document operational performance improvements and provide accurate and timely information for billing and reimbursement purposes.
6. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.
7. Complete thorough, accurate, logical, concise, timely and legible manual and electronic documentation that follows guidelines and specific documentation formats required by state practice acts, the practice setting, and other regulatory agencies.
8. Sit for licensure examination.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
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<tr>
<td>HTEC-1000</td>
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<tr>
<td>MA-1020</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG-1010</td>
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<tr>
<td>ENG-101H</td>
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First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PTAT-1100</td>
<td>Introduction to Physical Therapist Assisting</td>
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<tr>
<td>PTAT-1300</td>
<td>Functional Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>PTAT-1312</td>
<td>Fundamentals of Physical Therapy</td>
<td>3</td>
</tr>
<tr>
<td>PTAT-1320</td>
<td>Introduction to Therapeutic Exercise</td>
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</table>

Credit Hours 18
Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PTAT-1401</td>
<td>Clinical Pathophysiology</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-1411</td>
<td>Physical Therapy Procedures</td>
<td>3</td>
</tr>
<tr>
<td>PTAT-1420</td>
<td>Therapeutic Exercise</td>
<td>3</td>
</tr>
<tr>
<td>PTAT-2341</td>
<td>Psychosocial issues in Physical Therapy</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
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<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
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<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
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</table>

**Credit Hours:** 16

Summer Session

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PTAT-2940</td>
<td>Field Experience I</td>
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**Credit Hours:** 1

Third Semester

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare</td>
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</tr>
<tr>
<td>HTEC-1610</td>
<td>Introduction to Pharmacology</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2200</td>
<td>Physical Therapy in Acute Care Setting</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2301</td>
<td>Long Term Physical Therapy Rehabilitation Procedures</td>
<td>4</td>
</tr>
<tr>
<td>PTAT-2310</td>
<td>Pediatric Physical Therapy</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2330</td>
<td>Geriatric Physical Therapy</td>
<td>2</td>
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</table>

**Credit Hours:** 13

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PTAT-2840</td>
<td>Clinical Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2850</td>
<td>Clinical Practicum II</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2970</td>
<td>Practicum Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Credit Hours:** 5

**Total Credit Hours:** 64

1. Full-time placement at an off-campus clinical site for five consecutive weeks.
2. Full-time placement at an off-campus clinical site for six consecutive weeks.

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### Pile Driving, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

**Program contact:** Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

### Program Admission Requirements

- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

### Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.
9. Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.
10. Setup and use crane(s) to support the equipment and drive various types of piling.
11. Be certified in rigging and welding.

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Cuyahoga Community College 2019-2020 Catalog 387
The systems that the pipefitter may work on are some of the highest power plants, manufacturing plants, and in the automotive industry. In planning, design, and installation of low- and high-pressure steam and gas in the residential, commercial and industrial sectors. They specialize in maintaining and repairing piping systems that transport fluids, slurries and pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency.

**Program Admission Requirements**
- High School Diploma/GED

**Other Information**
- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimize waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, and refrigeration systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the pipe fitting industry.

**Suggested Semester Sequence**

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCT-1301</td>
<td>Introduction to Carpentry</td>
<td>2</td>
</tr>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1340</td>
<td>Introduction to Pile Driving</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1450</td>
<td>Heavy Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-1490</td>
<td>Millwright Pile Driver Weld I</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-1330</td>
<td>Print Reading for Pile Driving</td>
<td>2</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMW-2230</td>
<td>Millwright Pile Driver Weld II</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-1310</td>
<td>Technical Measurements, Hand &amp; Power Tool Use in Pile Driving</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-1370</td>
<td>Pile Driving on Land and Water</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2020</td>
<td>Pile Driving Technologies</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2220</td>
<td>False Work and Heavy Timber</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2370</td>
<td>Advanced Pile Driving on Land</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2380</td>
<td>Advanced Pile Driving on Water</td>
<td>2</td>
</tr>
</tbody>
</table>

### Summer Completion

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMW-2520</td>
<td>Millwright Pile Driver Weld III</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2700</td>
<td>Millwright-Pile Driver Weld IV</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2710</td>
<td>Millwright-Pile Driver Weld V</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credit Hours 32

1 Consecutively scheduled courses.

### Pipefitting, Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency.

**Program Admission Requirements**
- High School Diploma/GED

**Other Information**
- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimize waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, and refrigeration systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the pipe fitting industry.

**Suggested Semester Sequence**

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1340</td>
<td>OSHA Standards for Construction</td>
<td>3</td>
</tr>
<tr>
<td>ATPF-1070</td>
<td>Soldering, Brazing, and Pipefitting Tools</td>
<td>2</td>
</tr>
</tbody>
</table>
Plant Science and Landscape Technology (Landscape Technician), Certificate of Proficiency

The one-year certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable employee. The Landscape Technician Certificate of Proficiency features course work in such horticulture basics as botany, plant identification, plant diseases and insect pests, soil technology and landscape practices.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 176) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements
- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information
- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project.
2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.
3. Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.
4. Demonstrate safe operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
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<tr>
<td>HLTH-1230</td>
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<tr>
<td>MATH-1xxx</td>
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<td>(p. )</td>
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<tr>
<td>PST-1300</td>
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<tr>
<td>PST-1311</td>
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<td>PST-1411</td>
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<td>Select one of the following:</td>
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<td>ENG-101H</td>
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<tr>
<td>ENG-101H</td>
<td>15</td>
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<tr>
<td>College Composition I</td>
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<tr>
<td>ENG-1010</td>
<td>3</td>
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<tr>
<td>Honors College Composition I</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>BADM-1301</td>
<td>3</td>
</tr>
<tr>
<td>PST-XXXX Plant Science Elective (see below list)</td>
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<tr>
<td>PST-1321</td>
<td>3</td>
</tr>
<tr>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
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</tr>
<tr>
<td>PST-1420</td>
<td>3</td>
</tr>
<tr>
<td>Landscape Practices</td>
<td></td>
</tr>
<tr>
<td>PST-1510</td>
<td>3</td>
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<tr>
<td>Landscape Contracting</td>
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<tr>
<td>PST-1600</td>
<td>2</td>
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<tr>
<td>Irrigation and Drainage</td>
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Total Credit Hours 31
Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PST-1441</td>
<td>Introduction to Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>PST-2380</td>
<td>Arboriculture</td>
<td>2</td>
</tr>
<tr>
<td>PST-2370</td>
<td>Introduction to Turfgrass</td>
<td>2</td>
</tr>
</tbody>
</table>

Plant Science and Landscape Technology, Associate of Applied Science

This ornamental horticulture program prepares students for entry level to middle management positions in the Green Industry. Many opportunities exist for graduates in landscape design and construction, landscape maintenance, wholesale nursery and greenhouse plant production, garden center management, inside sales, arboriculture and urban forestry, theme parks, public horticulture, arboreta, and much more. The curriculum of this two-year, full-time program includes a summer field experience between the first and second years and is composed of a balance of classroom, laboratory and practical educational experiences. This program is fully accredited by the National Association of Landscape Professionals, meeting the national standard for industry performance. Classes are available both day and evening, and students may enroll on either a full- or part-time basis.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 176) about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Other Information

- Submit all college transcripts to Office of the Registrar.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the team.
2. Provide positive motivation to crew members by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project/product.
3. Apply Green Industry Standards of quality, artisanship, and environmental responsibility to all aspects of work within the scope of the industry.
4. Identify and describe cultural conditions for over 500 different ornamental landscape plants commonly found in the industry including deciduous and evergreen trees and shrubs, herbaceous perennials, and annuals.
5. Use knowledge of plants, soils, chemicals, fertilizers, and Integrated Pest Management to identify, correct, or prevent plant disease, insect pest, and physiologic issues as part of an Integrated Plant Health Care Program and be prepared to pass the State of Ohio Pesticide Core exam.
6. Demonstrate ability to safely operate and perform preventative maintenance on hand tools as well as small and large power equipment found within the Green Industry as well as evaluate the best tool to safely accomplish each task with efficiency.
7. Demonstrate effective oral and written communication skills to develop professional interpersonal relationships with suppliers, co-workers, and clients from diverse cultural backgrounds.
8. Effectively use math and the most recent technologies to create estimates for production of a product including labor and materials needed.
9. Sit, when eligible, for relevant industry certification exams including but not limited to Ohio Nursery and Landscape Association: Ohio Certified Landscape Technician and PLANET Landscape Industry Certified Technician.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xx (p. 32)</td>
<td>3</td>
</tr>
<tr>
<td>PST-1300 Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>PST-1311 Deciduous Woody Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1411 Equipment Operations and Safety</td>
<td>2</td>
</tr>
<tr>
<td>PST-xxxx Plant Science Elective (select from below list)</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL-1000 Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1420 Landscape Practices</td>
<td>3</td>
</tr>
</tbody>
</table>
### Plant Science Elective (select from below list)

Select one lecture & lab from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1020</td>
<td>Everyday Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>PST-102L</td>
<td>Everyday Chemistry Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
<td>2</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Hours**: 3

### Summer Session

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-2950</td>
<td>Field Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

### Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>PST-2321</td>
<td>Plant Pest Diagnostics</td>
<td>3</td>
</tr>
<tr>
<td>PST-2370</td>
<td>Introduction to Turfgrass</td>
<td>2</td>
</tr>
<tr>
<td>PST-xxxx</td>
<td>Plant Science Elective (select from below list)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Hours**: 12

### Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1600</td>
<td>Irrigation and Drainage</td>
<td>2</td>
</tr>
<tr>
<td>PST-2310</td>
<td>Soil Technology</td>
<td>3</td>
</tr>
<tr>
<td>PST-2380</td>
<td>Arboriculture</td>
<td>2</td>
</tr>
<tr>
<td>PST-xxxx</td>
<td>Plant Science Elective (select from below list)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Hours**: 13

**Total Credit Hours**: 60

### Electives

#### Landscape Contracting Concentration

Recommended Electives for concentration in Landscape Contracting

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1441</td>
<td>Introduction to Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>PST-1450</td>
<td>Landscape Design - CAD</td>
<td>3</td>
</tr>
<tr>
<td>PST-1510</td>
<td>Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>PST-2431</td>
<td>Planting Design</td>
<td>3</td>
</tr>
</tbody>
</table>

### Garden Center/Nursery Management Concentration

Recommended electives for concentration in Garden Center/Nursery Management.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1301</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>PST-1331</td>
<td>Plant Propagation</td>
<td>3</td>
</tr>
</tbody>
</table>

### Plexus AS9100D Understanding and Internal Auditing (Aerospace)

**Program description**

This three-day course is designed for both new auditors and those looking to sharpen their auditing skills. It will provide the tools to effectively audit your organization’s AS9100 quality management system. Participants will acquire the skills to become a leader in preparing and conducting first- and second-party audits through interactive teaching methods while avoiding lecture-based learning.

### Other important information

This course includes all Revision D updates.

### Program cost

Visit the Corporate College website here for pricing.

### Financial aid eligibility

This program is **not** Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

### Upon completion students receive

Certificate of Completion

### Related Programs/Training

- ISO Standards and Certified Training (Professional Development Programs) (p. 147)
- Lean/Lean Six Sigma (p. 105)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Plexus AS9100D Understanding and Internal Auditing (Aerospace)
Plexus Understanding and Internal Auditing for ISO 14001:2015

Program description
An environmental management system (EMS) based on the ISO 14001 standard is recognized worldwide as a superb methodology for reducing environmental hazards, maintaining regulatory compliance and as a cost-saving vehicle. Environmental management system internal auditors assist an organization in maintaining an effective EMS and in meeting environmentally sensitive targets and objectives. Using environmental methodology and tools, this ISO 14001:2015 EMS internal auditor class helps your organization drive continuous improvement.

Other important information
A written exam covering the content of ISO 14001 and the application of audit principles and practices based on ISO 14001 will be administered during class. Those who pass receive a certificate of successful completion, which satisfies the training requirement for individual quality management system internal auditor certification through Exemplar Global. Those who do not pass receive a certificate of attendance from Corporate College®.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- ISO Standards and Certified Training (Professional Development Programs) (p. 147)
- Lean/Lean Six Sigma (p. 105)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Plexus Understanding and Internal Auditing for ISO 14001

Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditor

Program description
ISO 13485 specifies the requirements for an ISO certified quality management system for manufacturers of medical devices and related services that consistently meet both customer and regulatory requirements applicable to medical devices and related services. Designed for new and current internal auditors, this course will provide an understanding of ISO 13485 and the skills needed to evaluate the effectiveness of the quality management system at your organization. You will be guided through the internal audit process, from planning an audit to reporting on audit results and following up on corrective actions.

Other important information
A written exam that covers the content of ISO 13485 and the application of audit principles and practices based on ISO 13485 will be administered during class.

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion

Related Programs/Training
- ISO Standards and Certified Training (Professional Development Programs) (p. 147)
- Lean/Lean Six Sigma (p. 105)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)
- Manufacturing Industrial Engineering Technology (p. 147)

To Register for and Learn more about Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditing
Plumbing, Certificate of Proficiency

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

The apprenticeship program prepares the student to earn a journey-level status in Plumbing. A five-year apprenticeship emphasizes the skill set required to be a journey-level Plumber. The Certificate of Proficiency provides academic recognition of the accomplishment of the journey-level worker. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

• High School Diploma/GED

Other Information

• Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor’s standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the plumbing industry.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-1000 Care and Use of Tools ¹</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1010 Soldering and Brazing ¹</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1030 State of Ohio Plumbing Code I</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1070 Pipe Fittings, Valves, and Supports</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-1220 Gas Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1230 Water Supply</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2320 State of Ohio Plumbing Code III</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350 Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-xxxx ATPT elective course</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summer Completion</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-2410 City &amp; State Backflow Cert</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

¹ Apprentice may be awarded credit from JATC for life experience.
Polysomnography (Sleep Disorders), Certificate of Proficiency

This program has been deleted effective Fall 2018 and replaced with the Associate of Applied Science degree in Electroneurodiagnostic Technology with a concentration in Polysomnography (p. 279). Students currently in the program have two years to complete this certificate, until Summer 2020. After Summer 2020, certificates will no longer be granted for this program. Students currently in the program with questions regarding completing this certificate or transitioning into another program should make an appointment to see a counselor.

Related Degrees and Certificates
- Electroneurodiagnostic Technology, Associate of Applied Science (p. 281)
- Electroneurodiagnostic Technology with a concentration in Polysomnography, Associate of Applied Science (p. 279)

Program cost
$200

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Powered Industrial Truck (PIT)/Forklift Operator Training Advanced

This eight-hour Powered Industrial Truck (PIT)/Forklift Operator Training Advanced class provides continued education training opportunities for the operation of powered industrial trucks in line with industry standards. The course, based on OSHA 1910.78 objectives, is safety and basic knowledge focused, and also includes hands-on experience operating a multitude of power industrial equipment. Classroom and hands-on training are provided in a simulated warehouse condition, which includes operating an order picking high level truck, and a Turret narrow isle truck.

Other important information
Prerequisites:
- You must be 18 years of age
- ZLDA 1012 or demonstrated industry experience

Program cost
$200

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Tri-C Achievement Award and wallet card

Related Programs/Training
- Truck Driving and Logistics (Workforce Training Programs) (p. 152)

Learn more about Powered Industrial Truck/Forklift Operator Training

Practical Nursing, Certificate of Proficiency

Other important information
Prerequisites:
- You must be 18 years of age
Starting Fall 2020 the Division of Nursing will be transitioning to a one-plus-one curriculum. Effective Fall 2020, all Nursing students will need to apply to the Associate of Applied Science Degree program in Nursing. Students who successfully complete the first year of the program will be awarded a certificate of proficiency in practical nursing and are eligible to sit for the NCLEX-PN.

The Practical Nurse (at the direction of a licensed physician, dentist, podiatrist, optometrist, chiropractor, or registered nurse) works in a variety of settings including: clinics, home care, hospitals, long term care facilities and physicians’ offices. The curriculum consists of 34 semester credit hours, divided among nursing and non-nursing courses. The nursing courses consist of classroom activities, clinical labs, hospital and long-term care facilities caring for patients of all ages with a variety of health deviations. Upon successful completion of the program requirements, graduates are eligible to take the National Council Licensure Examination for Practical Nurses. ACCESS in Nursing is available for graduates.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 128), here (p. 128) and here (p. 131) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Related Degrees and Certificates

- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 361)

Related Training and Credentials

- State-Tested Nursing Assistant Training (p. 412)
- State-Tested Nursing Assistant (Accelerated) (p. 411)
- Community Health Worker (p. 241)
- Comprehensive Patient Access Specialist (p. 241)

Fall 2019 Program Admission Requirements

- Applications may be requested after meeting requirements listed below http://www.tri-c.edu/programs/nursing/Pages/default.aspx
- Please see application procedures (p. 116) for more information.
- All applicants must be 18 years old and have a High School Diploma/ GED, or a higher degree transcript must be on file in the Office of the Registrar.
- Cumulative college grade point average (GPA) of 2.5.
- Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Practical Nursing Certificate Program with transfer credit for support courses from another accredited institution may use that institution’s cumulative GPA if the GPA is 2.5 or greater. (**Schools accepted by Tri-C)
- For the student that has a degree from another institution, the degree GPA will take precedence over the Tri-C GPA, if that GPA is higher than the Tri-C GPA.
- An official transcript must be submitted to Tri-C’s Enrollment Office (Metropolitan, Eastern, Westshore, or Western Campus).
- Complete the program admission courses listed below with grade of “C” or higher or achieve the appropriate score on English and Math placement tests.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-0955</td>
<td>Beginning Algebra (or appropriate score on Math Placement Test)</td>
<td>6</td>
</tr>
<tr>
<td>ENG-0990</td>
<td>Language Fundamentals II (or appropriate score on English Placement Test)</td>
<td>6</td>
</tr>
</tbody>
</table>

Other Information

- Day and modified evening classes admitted Fall only. Space available basis. Clinical experiences may be held during the day and/or evenings.
- BIO-1050 Human Biology and BIO-105L Human Biology Laboratory may be repeated once to improve a grade of “C” or less. A grade of less than “C” received over 7 years ago will not count toward the “one science course” repeat rule.
- The Elsevier Admission Test (A2) is required for admission to the program. Students must achieve a grade of 75% or higher on the Math Skills and ***English Language portions of the exam. There is a limit of two attempts within a 12 month period. Students may attempt the exam one time a month. If a second attempt is needed to achieve a passing score, only the section(s) below 75% needs to be completed.
- ***The English portion of the exam is composed of three separate tests. The three tests are: Reading Comprehension, Vocabulary, and Grammar. All three sections must be taken for a score to be used for admission purposes.
- A grade of “C” or higher is required for core courses: ENG-1010, BIO-1050/BIO-105L, PSY-1010 General Psychology and PSY-2020 Life Span Development.
- BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1050 and BIO-105L effective Fall 2011 (may be taken after admission to the program).
- Once Practical Nursing courses have begun, all other classes must be taken in program sequence.
- Graduates of this certificate program may be eligible for the LPN to RN Track of the ADN Program.
- All students enrolled in Health Career and Nursing programs requiring off campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Log onto http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html for further information.

Fall 2020 Program Admission Requirements

Starting Fall 2020 the Division of Nursing will be transitioning to a one-plus-one curriculum. Effective Fall 2020, all Nursing students will need to apply to the Associate of Applied Science Degree program in Nursing. Students who successfully complete the first year of the program will be awarded a certificate of proficiency in practical nursing and are eligible to sit for the NCLEX-PN.

The new nursing curriculum is presented as a career ladder concept based curriculum designed to improve nursing career mobility and provide seamless progression from nurse aide certification to practical
nurse certification to the associate degree in applied science in nursing. Students who successfully complete the two prerequisite nursing courses are eligible to sit for the ODH STNA (Ohio Department of Health State Tested Nurse Aide) examination and progress to the nursing program after meeting all admission requirements. Students who successfully complete the first year of the program will be awarded a certificate of proficiency in practical nursing and are eligible to sit for the NCLEX-PN. Students who complete the second year of the nursing program will be awarded an associate degree in applied science and are eligible to sit for the NCLEX-RN. All students are admitted using a common admission criteria. The new admission criteria are as follows:

**Prerequisite Course Work**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>NURS-1000</td>
<td>Introduction to Health Care and Professional Nurse Concepts (5 week hybrid course)</td>
<td>1</td>
</tr>
<tr>
<td>NURS-1010</td>
<td>Introduction to Patient Care Concepts (10 week lab/clinical course)</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following: 3

- PSY-1010 General Psychology
- PSY-101H Honors General Psychology

1. BIO-2331 Anatomy and Physiology I must be completed with a grade of “B” or higher.
2. MATH-1240 Contemporary Mathematics or higher will be accepted to meet the math requirements for admission.
3. NURS-1000 is a prerequisite requirement for NURS-1010 along with completion of the HESI A2 examination. Courses will be flexibly scheduled so they can be completed in one semester.

- All applicants must be 18 years old and have a High School Diploma/ GED, or a higher degree transcript must be on file in the Office of the Registrar.
- A cumulative Grade Point Average (GPA) of 2.75 from Tri-C with a minimum of 9 credit hours from any course that maybe used to meet the general education requirements for the Associate of Applied Science Degree. If an applicant’s Tri-C GPA is less than 2.75, transfer GPA from an accredited institution as recognized by the college can be used for admission criteria only if the student has 9 credit hours of courses that maybe used to meet the general education requirements Associate of Applied Science Degree, and an overall GPA of 2.75 or higher. Note: Students who who have completed Health related courses may apply to use these courses to meet the 9 credit hour requirement. These courses are subject to division approval only.
- All applicants are required to take The Health Education Systems Inc Admission Assessment Exam-A2 (HESI A2) as part of the application process for entry into the Associate Degree Nursing Program. Students can complete the A2 at any time during the application process, but must complete it prior to beginning NURS 1010-Introduction to Patient Care Concepts and must achieve a minimum score of 75% on the Math and English** sections for consideration for the program. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 75% needs to be completed. There is a limit of 2 attempts in a 12-month period. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar. Please visit http://www.tri-c.edu/programs/nursing/hesi-a2-entrance-exam.html for detailed information on the HESI examination as well as how to register for the exam.
- Complete and pass a background check that includes finger printing and BCI check.
- Students will be required to have a “B” or higher in all required prerequisite and co-requisite sciences courses

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Collects, prioritizes, organizes and records patient information in an accurate and appropriate manner for continuity of patient care.
2. Integrate interpersonal skill concepts and professional behavior standards into the practice of Practical Nursing. The ability to utilize therapeutic communication skills effectively with members of the health care team, patients and families.
3. Apply the principles of medication administration, utilizing the nursing process to affect a positive and safe outcome. Also, utilize the nursing process while implementing scientific principles of nursing, consistently, to safely provide technical care.
4. Delegate and supervise within LPN scope of practice, unlicensed personnel in the performance of appropriate skills while adhering to facility policies and procedures.
5. Demonstrate a theory based practice when planning, implementing and evaluating the nursing care of individuals and groups across the lifespan, including end of life care.

A practical nurse should be able to use critical thinking skills to:
- Assist RN with patient assessment
- Prioritize patient care among patients
- Recognize when a patient is in trouble and seek assistance
- Delegate tasks within scope of practice

7. Effectively teach patients and families self-care to attain, maintain optimal level of wellness or to a dignified death in accordance with patient’s wishes.

**Suggested Semester Sequence**

### First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050</td>
<td>Human Biology 1</td>
<td>3</td>
</tr>
<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PNUR-1200</td>
<td>Physical Assessment for the Practical Nurse</td>
<td>2</td>
</tr>
<tr>
<td>PNUR-1210</td>
<td>Fundamentals of Practical Nursing</td>
<td>3</td>
</tr>
<tr>
<td>PNUR-1322</td>
<td>Nursing Management of the Adult I</td>
<td>3</td>
</tr>
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</table>

### Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PNUR-1330</td>
<td>Nursing Management of Adults II</td>
<td>8</td>
</tr>
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<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>
PSY-1010  General Psychology
PSY-101H  Honors General Psychology

Credit Hours  14

Summer Completion
PNUR-1341  Lifespan Nursing for the Practical Nurse  4
Select one of the following:  4
PSY-2020  Life Span Development
PSY-202H  Honors Life Span Development

Credit Hours  8
Total Credit Hours  34

1  BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1050 Human Biology and BIO-105L Human Biology Laboratory.
2  For students applying to start the Nursing program in Fall 2020, NURS-1000 and NURS-1010 will be accepted in place of PNUR-1200 & PNUR-1210.

Precision Machining Technology 3 (PMT 3)

Program description
One-semester course to develop more advanced skill in CNC and CAD/CAM master-cam CNC programming software

Other important information
Evening classes. Program offered in fall and spring semester

Program cost
12 Credit Hours

Financial aid eligibility
Eligible for PELL grant

Upon completion students receive
Precision Machining Technology 3 certificate

Related Programs/Training
• Manufacturing Industrial Engineering Technology (p. 147)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Precision Machining Technology 3 (PMT 3)

Private Security Academy

Program description
Our Ohio Peace Officer Training Commission (OPOTC) certified program is designed for individuals either currently employed or seeking employment in commercial/retail loss prevention, assets protection, private security or other private security functions. This paramilitary structured academy includes Homeland Security Certifications, Taser Operation Certification and First Aid/CPR Certifications. Firearms training is optional.

Other important information
Metro Campus (ATTC)
Evening: 6 - 10 p.m.
Day: 8 a.m. - 5 p.m.

Western Campus (WPSTC)
Weekend: 8 a.m. - 5 p.m.

Program cost
County Resident with Firearms Training: $2,550
County Resident without Firearms Training: $2,400
Out-of-County Residents: $2,900

Financial aid eligibility
This program is Federal Financial Aid/PELL eligible for those that qualify.
Scholarships, payment plans, and other financial aid options may be available. Please call 216-987-3064 for more information.

Upon completion students receive
Opportunity to receive Ohio Peace Officer Training Commission (OPOTC) Certification

Related Programs/Training
• Criminal Justice (Security Administration) (p. 162)
• Public Safety (Workforce Training Programs)

Learn more about Private Security Academy
Production Assistant Certificate

Program description
This certificate program provides hands-on training for the skills needed on film and media production sets. Trainees will learn:

- Standard film-industry organizational structure, job descriptions and key duties in major film craft areas.
- How film departments operate with one-another on a professional working set.
- Program courses are instructed by working industry professionals who will teach:
  - On-set procedures & etiquette
  - On-set safety
  - Production paperwork for distribution
  - Set building, set dressing and prop handling
  - Grip and lighting equipment
- In addition to the use of lectures, presentations, videos and handouts, the courses include I.A.T.S.E. recognized OSHA 10 General Entertainment Safety (GES) certification on:  
  - Walkie-talkie etiquette
  - Proper handling of G & E equipment

Trainees will also learn skills related to networking and self-marketing. After completion of the certificate program trainees will have an opportunity to apply for the Tri-C Short Film Intensive.

Other important information

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZFLM-1030</td>
<td>Production Assistant Basics</td>
<td>6</td>
</tr>
<tr>
<td>ZFLM-1029</td>
<td>Art Department</td>
<td>4.8</td>
</tr>
<tr>
<td>ZFLM-1028</td>
<td>Grip and Electric</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here for pricing.

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
Certificate of Completion for each course as well as a Program Certificate

Related Programs/Training
- Media Arts and Filmmaking (Motion Graphics), Short-Term Certificate
- Media Arts and Filmmaking (Digital Video Editing), Short-Term Certificate
- Media Arts and Filmmaking, Associate of Applied Business (p. 346)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ZFLM-1025</td>
<td>Movie Magic Scheduling</td>
<td>3.6</td>
</tr>
<tr>
<td>ZFLM-1026</td>
<td>Movie Magic Budgeting</td>
<td>3.6</td>
</tr>
<tr>
<td>ZFLM-1027</td>
<td>Location Sound Mixing and Boom Operation</td>
<td>3</td>
</tr>
<tr>
<td>ZFLM-1031</td>
<td>Camera Department</td>
<td>3</td>
</tr>
</tbody>
</table>

To Register for and Learn more about the Production Assistant Certificate.

Professional Baking, Certificate of Proficiency

This program provides all of the basic, advanced skills and practice needed to start on a career as a professional pastry Culinarian. It includes all of the educational requirements for certification through the executive pastry chef level of certification by the American Culinary Federation. Students complete a field experience that provides the work experience needed to advance and the work experience needed for certificates.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 100), here (p. 137), and here (p. 136) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate appropriate use of interpersonal communication skills, cooperation, teambuilding, and conflict management in daily foodservice operations.
2. Develop and apply principles of self and team awareness, time awareness, and personal responsibility.
3. Demonstrate proficient baking skills in quality production of breads, cakes, cookies, pies, sauces, custards, and ice cream while applying sanitation and safety principles, and correctly using appropriate equipment.

4. Demonstrate knowledge and principles of ingredients, inventory, organization, receiving, measuring, and recipe manipulation.

5. Plan, execute, control, and consistently produce bakery and pastry products for sale in a diverse foodservice environment.

6. Apply critical thinking skills to manage people, efficiently produce product, and control quality of production in a wide range of foodservice outlets.

7. Develop and apply professional business and human interactive skills in the production and sale of baked goods.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1010</td>
<td>Introduction to the Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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**Second Semester**

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<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2550</td>
<td>Baking Production and Sales II</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
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</table>

**Summer Completion**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx (p. 28)</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours** 15

**Suggested Semester Sequence**

**First Semester**

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<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
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<tr>
<td>Select one of the following:</td>
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<td>Contemporary Cuisine</td>
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<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
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<tr>
<td>HOSP-2550</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
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**Summer Completion**

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<th>Credit Hours</th>
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<tbody>
<tr>
<td>HOSP-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>2</td>
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</tbody>
</table>

**Professional Culinarian/Cook, Certificate of Proficiency**

This program provides all the basic, advanced skills and practice needed to start a career as professional cook/chef. It includes all of the educational requirements for certification through the executive chef level of certification by the American Culinary Federation. Students complete a field experience that provides the work experience needed to advance and the work experience needed for certification.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 100), here (p. 137), and here (p. 136) about how certificate credits apply to the related degrees.

**Gainful Employment Disclosure**

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Successfully complete ServSafe Certification Exam.
2. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.
3. Communicate appropriately to colleagues, staff, and management.
4. Convert and/or modify basic recipes using culinary math and measurements.
5. Apply and demonstrate culinary knowledge and skills with consistency using established standards within the industry and facility.
6. Use a computer to prepare correspondence, menus, daily logs, order sheets, and prep lists.

**Suggested Semester Sequence**

**First Semester**

<table>
<thead>
<tr>
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<td>Sanitation and Safety</td>
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<tr>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
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<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
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<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
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<tr>
<td>HOSP-2550</td>
<td>Hospitality Cost Control</td>
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<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
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</table>

**Summer Completion**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>2</td>
</tr>
</tbody>
</table>
Purchasing and Supply Management, Associate of Applied Business

Purchases of materials, supplies and equipment represent a large part of a business or industrial firm's total cost of operation. Purchasing, because of its importance, is often designated as a separate responsibility to be handled by one or more individuals. Purchasing agents and their assistants are responsible for obtaining raw materials, goods and services at the lowest cost consistent with required quality. The majority of the nation’s purchasing personnel are employed in service and manufacturing firms. Many also work in government agencies, public utilities, schools and hospitals.

Program contact: Learn more

Learn more (p. 106) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Business Management, Associate of Applied Business (p. 219)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 216)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 218)
- Bookkeeping, Certificate of Proficiency (p. 214)
- Payroll, Certificate of Proficiency (p. 381)
- Tax Preparation, Certificate of Proficiency (p. 416)

Related Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 230)
- Lean Six Sigma Green Belt for Health Care (p. 329)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 330)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 330)

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communication. Demonstrate competency in communicating effectively both independently and in teams, using oral, written, or non-verbal techniques, to include the use of technology, in the gathering and presentation of information.


3. Business Fundamentals. Demonstrate the ability to identify and understand basic theories, principles & practices, and terminology related to each functional area of business.

4. Critical Thinking. Apply knowledge in the decision-making and problem-solving process.

5. Diversity. Interpret and explain the importance of diversity in the global workplace.

6. Ethics. Identify the foundations and importance of ethics and social responsibility, and how business integrates this into their ongoing operations.

7. Purchasing & Supply Chain. Gain a basic knowledge of the concepts, processes and practices within the purchasing & supply chain function.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>BADM-2161</td>
<td>Introduction to Purchasing and Supply Management</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>IT-1090</td>
<td>Computer Applications</td>
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<tr>
<td>IT-109H</td>
<td>Honors Computer Applications</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
</tr>
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<td>Select one of the following:</td>
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</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1020</td>
<td>College Composition II</td>
</tr>
<tr>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
</tr>
<tr>
<td>ECON-2010</td>
<td>Principles of Macroeconomics</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>Social and Behavioral Sciences Requirements (p. 33)</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
</tr>
<tr>
<td>BADM-2180</td>
<td>Purchasing Management</td>
</tr>
<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
</tr>
</tbody>
</table>
MARK-2261  Salesmanship and Promotional Strategies  3
Credit Hours  15
Total Credit Hours  60

1. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent
   Study/Research in Mathematics may not be used to meet this
   requirement.
2. PHIL-2020 Ethics will be accepted in place of PHIL-2060 Business
   Ethics. MATH-1410 Elementary Probability and Statistics I or higher
   recommended for students planning to transfer.

Purchasing and Supply Management,
Post-Degree Professional Certificate

This certificate program is designed for students who already have an
associate or bachelor’s degree. The program presents students with the
theoretical background needed to function in today’s dynamic supply
environment. Students receive a general supply chain management
education with course work in purchasing, logistics, production/
operations management, negotiating, freight management, accounting
and business law. Graduates are better prepared for careers in business
and industry that deal with the issues of supply chain management.
Courses included in this program serve as the foundation of study for
the four modules leading to the A.P.P. and C.P.M. designation. Typical
students considering this course of study are employed in or seeking
employment in areas of business in manufacturing or service that deal
with the supply management process.

Program contact: Learn more

This certificate will be automatically awarded when the certificate
requirements are completed. If you do not want to receive the certificate,
please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 106) about how certificate credits apply to the related
degree.

Gainful Employment Disclosure

Program Learning Outcomes

This program is designed to prepare students to demonstrate the
following learning outcomes:

1. Communication. Demonstrate competency in communicating
effectively both independently and in teams, using oral, written,
or non-verbal techniques, to include the use of technology, in the
gathering and presentation of information.
2. Math/Financial. Apply general math skills to analyze general
business operations.

3. Business Fundamentals. Demonstrate the ability to identify and
understand basic theories, principles & practices, and terminology
related to each functional area of business.
4. Critical Thinking. Apply knowledge in the decision-making and
problem-solving process.
5. Diversity. Interpret and explain the importance of diversity in the
   global workplace.
6. Ethics. Identify the foundations and importance of ethics and social
   responsibility, and how business integrates this into their ongoing
   operations.
7. Purchasing & Supply Chain. Gain a basic knowledge of the concepts,
   processes and practices within the purchasing & supply chain
   function.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
</tr>
<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
</tr>
<tr>
<td>BADM-2161</td>
<td>Introduction to Purchasing and Supply Management</td>
</tr>
<tr>
<td>ECON-2000</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
</tr>
<tr>
<td>BADM-2180</td>
<td>Purchasing Management</td>
</tr>
<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>Global Commerce and Communication</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-xxxx</td>
<td>ACCT Program Elective (See below list)</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>BADM Program Elective (See below list)</td>
</tr>
<tr>
<td>MARK-xxxx</td>
<td>MARK Program Elective (See below list)</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
</tr>
</tbody>
</table>

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1341</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2760</td>
<td>Global Trade and Finance</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2780</td>
<td>Global Marketing and Distribution</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2020</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Quality Control, Certificate of Proficiency

This certificate is geared to those seeking an entry position in the area of quality control in industry. Students are introduced to the quality control of mechanical parts and systems. Inspection of parts is done using the skills of blueprint reading of Geometric Dimensioning & Tolerancing and inspection tools and equipment. Application of math and communication principles.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 147) and here (p. 148) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure

Program Admissions Requirements

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher
- Complete MET-1100 Technology Orientation

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement, data collection and statistical tools and technology to improve processes and product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Interpret drawings using proper dimensioning, tolerancing for size and geometry, and proper industry standards and conventions.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1530</td>
<td>College Algebra (or higher)</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
</tr>
<tr>
<td>MET-2400</td>
<td>Statistical Quality Control</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
</tr>
<tr>
<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
</tr>
<tr>
<td>MET-2730</td>
<td>Lean Manufacturing</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>31</td>
</tr>
</tbody>
</table>

Radiography, Associate of Applied Science

The Associate of Applied Science Degree in Radiography prepares the student for an entry-level position as a radiographer, or radiologic technologist, in hospitals and other health care agencies. The radiographer administers radiation in the form of x-rays to create diagnostic images that aid the physician in the diagnosis and treatment of injury and disease. Responsibilities of the radiographer include adjusting equipment to the correct settings for each radiographic procedure, positioning the patient, manipulating equipment for proper imaging and ensuring radiation protection. The radiographer understands radiation and knows how to conduct high quality diagnostic examinations safely. The radiographer must apply knowledge of physics, anatomy and physiology, patient care and other related radiographic principles. Individuals interested in a career as a radiographer need a strong science and math background and possess a genuine interest in providing direct patient care with professionalism, compassion and a high degree of accuracy. The curriculum consists of on-campus didactic and lab instruction as well as off-campus clinical rotations at affiliated institutions.
healthcare institutions. The program admits twice yearly (fall and spring semesters) for the daytime track and once yearly (fall semester) for the evening/weekend track. While credit hours vary each semester, the time commitment required for student success demands the equivalent of a full-time commitment. Graduates of the program are eligible for the American Registry of Radiologic Technologists Certification Examination.

The Radiography Program is accredited by:

The Joint Review Committee on Education in Radiologic Technology
20 N. Wacker Dr., Suite 2850
Chicago, IL 60606-3182
312-704-5300
www.jrcert.org

Program contact: Learn more

Related Degrees and Certificates
• Mammography, Short-Term Certificate (p. 333)

Program Admission Requirements
An application may be submitted to the Health Careers Enrollment Center
after meeting the following admission requirements:

• High School Diploma/GED
• 2.50 GPA in program admission requirement courses and a 2.00 cumulative college GPA. These GPA's reflect minimum admission requirements. Students are strongly advised to strive for higher GPA's. Students achieving higher grades in admission requirement courses are better prepared academically for the rigors of the program and are more likely to successfully complete the program.
• GPA of 2.50 or above in the following program admission required courses with a grade of "C" or above earned in each course:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Medical Imaging</td>
<td></td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>DMS-1351</td>
<td>Patient Care Skills</td>
<td>1</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>PSY-1010 General Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

1 Note: BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1221.
2 MATH-1200 and MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet Tri-C’s math requirements for graduation only through Summer 2021. Students applying to the program at this time will graduate after Summer 2021 so they must complete MATH-1240 or a higher level math course (e.g. MATH-1410, MATH-1530, etc.) which will meet the math requirement for graduation after Summer 2021.

Program Application Packet available here.

Other Information
• 45-55 students accepted per year.
• Admission requirement courses may be repeated only once to improve a grade below "C."
• There is no time limit on admission requirement courses. However, applicants are advised that they will be held accountable for the content of those courses when they begin the Radiography Program. Students are strongly advised to review math and skeletal anatomy prior to beginning the program.
• Students are expected to enter the program with college-level reading, math, critical thinking, study, note-taking and test-taking skills. Students needing to improve these skills should meet with a counselor to learn about the many resources available through the college. GEN-1022 Strategies for Success (3 credits), is highly recommended.
• Students eligible for accommodations through Student Accessibility Services are strongly advised to have their accommodations in place prior to beginning the radiography program. It is also recommended that they meet with the Radiography Program Director to learn how accommodations apply in the various program components (lectures, labs and clinicals).
• A background check which includes fingerprinting and a court search will be required prior to final program admission. The results of the background check may prevent a student from being admitted into a healthcare program. The college's determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
• Applicants are encouraged, but are not required, to obtain exposure to the healthcare environment prior to application to the program. This can be accomplished through volunteering or working at a healthcare facility. Radiography requires extensive, direct patient care and radiography students must be able to handle the physical, emotional and psychological demands of this type of work.
• The radiography program admits biannually (fall and spring semesters) for the daytime track and annually (fall semester) for the evening/weekend track. Refer to the application packet on www.tri-c.edu/radiography for detailed information about the program and for daytime and evening/weekend track schedules.
• Mandatory Radiography Program Information Session. Students are required to attend a Radiography Program Information Session prior to entering the program. Attendance at an information session does NOT need to be completed prior to applying but must be completed prior to program entry. Sessions are held once each semester and are posted on the program's webpage: www.tri-c.edu/radiography. Students are encouraged to bring a support person. Students must sign in to document their attendance and attend the entire session.
• Courses used as prerequisites, program admission requirements and all radiography specialty courses must have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, admission requirements and specialty courses will not be accepted to meet program graduation requirements.
• BIO-2200 Radiobiology and PHYS-2250 Radiographic Physics and Quality Control are considered radiography program courses and must be taken after program acceptance and along with the RADT courses listed in the Program Sequence. They cannot be completed while a student is waiting to start the program.
• Documentation of good health, immunizations, CPR certification and health insurance is required prior to clinical assignment. Students accepted into the program will be notified by the program when they should begin collecting and submitting this documentation. Students will be dismissed from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a radiography student and/or constitute a hazard to the health or safety of patients.

• Students in the radiography program must achieve a grade of "C" or better in all RADT courses as well as BIO-2200 and PHYS-2250 in order to remain in good academic standing and progress through the program.

• All applicants must complete DMS-1351 Patient Care Skills. Direct patient care work experience and/or healthcare certification (e.g. nursing assistant, medical assistant, etc.) cannot substitute for this course. The program must document students' completion of specific patient care competencies required for credentialing and this is accomplished through DMS-1351.

Program Outcomes
In accordance with accreditation standards and terminology established by the Joint Review Committee on Education in Radiologic Technology, the radiography program has two types of outcomes:

• Student Learning Outcomes
• Program Outcomes (expressed as Program Effectiveness Data)

Student Learning Outcomes
This program is designed to prepare students to demonstrate the following student learning outcomes:

1. Operates radiographic equipment to produce quality images.
3. Performs diagnostic imaging procedures on diverse patient populations.
4. Makes sound decisions and using independent judgement.
5. Demonstrates critical thinking and problem solving in applied laboratory and/or clinical scenarios.
6. Displays effective oral and written communication skills.
7. Educates patients and the public about radiographic procedures and radiation safety.
8. Accepts personal responsibility for ethical, technical and professional performance.
9. Demonstrates understanding of and commitment to the medical imaging profession.

Program Outcomes (Program Effectiveness Data)
1. Program Completion Rate
2. Credentialing Examination Pass Rate
3. Job Placement Rate

Current program effectiveness data can be viewed at http://www.tric.edu/programs/health-careers/radiography/program-effectiveness-data.html or https://www.jrcert.org/resources/program-effectiveness-data

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>DMS-1351 Patient Care Skills</td>
<td>1</td>
</tr>
<tr>
<td>MA-1020 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010 General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

| Credit Hours | 17 |

First Semester
BIO-2200 Radiobiology | 2 |
RADT-1300 Fundamentals of Radiography | 4 |
RADT-1400 Radiographic Positioning | 3 |
| Credit Hours | 9 |

Second Semester
Select one of the following:
| RADT-1911 Clinical Radiography I (Option A (7 credit hours)) | 3 |
| RADT-191S Clinical Radiography I (Option B (5 credit hours)) | 4 |
| RADT-191A & RADT-191B Clinical Radiography I-A and Clinical Radiography I-B (Option C (7 credit hours)) | |

| Credit Hours | 0 |

Summer Session
RADT-1351 Image Acquisition and Evaluation | 3 |
RADT-1410 Intermediate Radiographic Positioning | 3 |
RADT-2401 Imaging Systems | 2 |
Select one of the following:
| ENG-1020 College Composition II | |
| ENG-102H Honors College Composition II | |
| Credit Hours | 11 |

Third Semester
Select one of the following:
| RADT-2911 Clinical Radiography II (Option A (7 credit hours)) | |
| RADT-291S Clinical Radiography II (Option B (7 credit hours)) | |
| RADT-291A & RADT-291B Clinical Radiography II-A and Clinical Radiography II-B (Option C (7 credit hours)) | |

| Credit Hours | 0 |

Fourth Semester
PHYS-2250 Radiographic Physics and Quality Control | 4 |
RADT-2350 Radiographic Pathology | 3 |
Students beginning the program in a fall semester (daytime track) will complete the following clinical courses:

- **RADT-2362** Interventional Radiography and Pharmacology
- **RADT-2921** Clinical Radiography III (Option A (5 credit hours))
- **RADT-292S** Clinical Radiography III (Option B (7 credit hours))
- **RADT-2921** Clinical Radiography III (Option C (5 credit hours))

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Total Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45</td>
</tr>
</tbody>
</table>

**Summer Completion**

Select one of the following:

- **RADT-2921** Clinical Radiography III (Option A (5 credit hours))
- **RADT-292S** Clinical Radiography III (Option B (7 credit hours))
- **RADT-2921** Clinical Radiography III (Option C (5 credit hours))

**Total Credit Hours:** 45

---

1. BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging.

2. MATH-1200 and MATH-1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet Tri-C’s math requirements for graduation only through Summer 2021. Students applying to the program at this time will graduate after Summer 2021 so they must complete MATH-1240 or a higher level math course (e.g., MATH-1410, MATH-1530, etc.) which will meet the math requirement for graduation after Summer 2021.

3. Students beginning program in fall semester (daytime track) must take RADT-1911 Clinical Radiography I, RADT-2911 Clinical Radiography II and RADT-2921 Clinical Radiography III. Students beginning in spring semester (daytime track) must take RADT-191S Clinical Radiography I, RADT-291S Clinical Radiography II and RADT-292S Clinical Radiography III. Students beginning in the fall semester (evening/weekend track) may take modular courses RADT-191A and RADT-191B in place of RADT-1911 and must take RADT-291A, RADT-291B, and RADT-2921. RADT-191A & RADT-191B are accepted in place of RADT-1911; RADT-291A & RADT-291B are accepted in place of RADT-2911.


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**Options**

**(A) Fall Start - Daytime Track**

Students beginning the program in a fall semester (daytime track) will complete the following clinical courses: RADT-1911 Clinical Radiography I, RADT-2911 Clinical Radiography II and RADT-2921 Clinical Radiography III.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-1911</td>
<td>Clinical Radiography I</td>
<td>7</td>
</tr>
<tr>
<td>RADT-2911</td>
<td>Clinical Radiography II</td>
<td>7</td>
</tr>
<tr>
<td>RADT-2921</td>
<td>Clinical Radiography III</td>
<td>5</td>
</tr>
</tbody>
</table>

---

**(B) Spring Start - Daytime Track**

Students beginning the program in a spring semester (daytime track) will complete the following clinical courses: RADT-191S Clinical Radiography I, RADT-291S Clinical Radiography II and RADT-292S Clinical Radiography III.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-191S</td>
<td>Clinical Radiography I</td>
<td>5</td>
</tr>
<tr>
<td>RADT-291S</td>
<td>Clinical Radiography II</td>
<td>7</td>
</tr>
<tr>
<td>RADT-292S</td>
<td>Clinical Radiography III</td>
<td>7</td>
</tr>
</tbody>
</table>

---

**(C) Fall Start - Evening/Weekend Track**

Students beginning the program in a fall semester (evening/weekend track) will complete the following clinical courses: RADT-1911 Clinical Radiography I or RADT-191A Clinical Radiography I-A and RADT-191B Clinical Radiography I-B; RADT-291A Clinical Radiography II-A and RADT-291B Clinical Radiography II-B; and RADT-2921 Clinical Radiography III.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RADT-191A &amp; RADT-191B</td>
<td>Clinical Radiography I-A and Clinical Radiography I-B</td>
<td>7</td>
</tr>
<tr>
<td>RADT-291A &amp; RADT-291B</td>
<td>Clinical Radiography II-A and Clinical Radiography II-B</td>
<td>7</td>
</tr>
<tr>
<td>RADT-2921</td>
<td>Clinical Radiography III</td>
<td>5</td>
</tr>
</tbody>
</table>

---

**Recording Arts and Technology, Associate of Applied Science**

The recording arts and technology program trains students for entry-level positions within the audio industry. Students receive broad-based training in music recording and mixing, location sound, commercial production, audio for video and television, internet audio, record production, live sound reinforcement, audio electronics and music business. A field experience/internship component provides on-the-job training with local and national facilities. Graduates are employed in a wide variety of positions within the entertainment industry.

**Program contact:** Learn more
Program Admission Requirements

• High School Diploma/GED
• Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
• Complete MATH-1xxx or higher
• Complete one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1010</td>
<td>Survey of European Classical Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1020</td>
<td>Survey of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1040</td>
<td>Survey of African-American Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1050</td>
<td>Survey of World Music</td>
<td>3</td>
</tr>
</tbody>
</table>

• Complete degree requirements for Social Behavioral Sciences

Other Information

• GPA: 2.0

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally and in writing with clients, colleagues, vendors, and other professionals both technically and creatively to successfully complete projects.
2. Work independently and as a member of a team.
3. Demonstrate high technical and ethical standards.
4. Manage self in order to complete a project on time and within budget.
5. Apply computer and problem solving skills to overcome obstacles and complete projects.
6. Design, install, and operate Live Sound reinforcement systems.
7. Demonstrate proficiency in audio recording and productions techniques.
8. Manage and present a project that meets professional standards.

Suggested Semester Sequence

Program Admissions Requirements Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xxx</td>
<td>3</td>
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</tbody>
</table>

Social & Behavioral Sciences requirement (p. 33)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1010</td>
<td>Survey of European Classical Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1020</td>
<td>Survey of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1040</td>
<td>Survey of African-American Music</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1050</td>
<td>Survey of World Music</td>
<td>3</td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-1130 Basic Audio Electronics</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-2140 Studio Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>RAT-1320 Audio Transducers</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1500 Recording Theory I</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1511 Recording Lab I</td>
<td>2</td>
</tr>
<tr>
<td>RAT-1530 Digital Audio Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAT-1520 Audio Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2300 Recording Theory II</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2311 Recording Lab II</td>
<td>2</td>
</tr>
<tr>
<td>RAT-2330 Digital Audio Mixing</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2341 Location Recording</td>
<td>2</td>
</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAT-2540 Live Sound Reinforcement</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2940 Audio Recording Field Experience</td>
<td>1-2</td>
</tr>
<tr>
<td>RAT-2990 Recording Arts &amp; Tech Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Communications requirement (p. 31)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 63-64

Respiratory Care, Associate of Applied Science

Assess the cardiopulmonary system, assist in the treatment of cardiopulmonary impairment, evaluate treatment effectiveness and actively care for patients of all ages with deficiencies or abnormalities associated with the cardiopulmonary system. Opportunities exist for specialization within the profession in the areas of critical care, homecare, neonatal/pediatrics, education, pulmonary function testing and management as a licensed professional in respiratory care. The individual will, under the supervision of a physician, actively participate in the development of patient care plans, diagnostic testing and in the decision making process regarding the care and treatment of patients. Employment is primarily in hospitals but extends to home care, skilled nursing facilities, education and management. The respiratory care program, associate of applied science degree at the Western campus is accredited by the:
Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 2.8 admissions requirements/core courses; 2.8 overall.
- Observation visit required (see details in application packet).
- Complete the following ("C" grade or higher in each):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I (or BIO-2330)</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-8</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM-1020</td>
<td>Introduction to Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>and Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

**Other Information**

- 25 students accepted per year.
- Admissions/core courses may be repeated only once to improve a grade below "C".
- Accepted applicants must attend a group information session prior to Fall Semester.
- Criminal background check required prior to admission to the program. Contact the program manager for specific dates.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate ethical and professional behavior.
2. Assess, evaluate, interpret and prioritize clinical, therapeutic and mechanical patient data to ensure appropriate outcomes.
3. Teach, document and communicate therapy with patients, families and all medical personnel, following medical protocols.
5. Perform procedures used to diagnose and treat cardiopulmonary patients for all age groups.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2331 Anatomy and Physiology I 2</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>13</td>
</tr>
</tbody>
</table>

**First Semester**

| RESP-1300 Respiratory Care Equipment      | 4            |
| RESP-1310 Cardiopulmonary Physiology      | 3            |
| Select one of the following:              | 3            |
| ENG-1020 College Composition II           |              |
| ENG-102H Honors College Composition II    |              |
| Select one of the following:              | 3            |
| PSY-1010 General Psychology               |              |
| PSY-101H Honors General Psychology        |              |
| Credit Hours                            | 13           |

**Second Semester**

| RESP-2210 Introduction to Mechanical Ventilation | 1            |
| RESP-2300 Basic Therapeutic Procedures          | 3            |
| RESP-2940 Respiratory Care Field Experience I   | 1            |
| Credit Hours                            | 5            |

**Third Semester**

| RESP-2330 Respiratory Home Care/Rehabilitation | 1            |
| RESP-2341 Patient Management Problems          | 1            |
| RESP-2950 Respiratory Care Field Experience II  | 2            |
| Credit Hours                            | 12           |

**Fourth Semester**

| RESP-2330 Respiratory Home Care/Rehabilitation | 1            |
| RESP-2341 Patient Management Problems          | 1            |
| RESP-2960 Respiratory Care Field Experience III | 2            |
| Credit Hours                            | 4            |
| Total Credit Hours | 63           |

1 CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry.
Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100 Introduction to Biological Chemistry.

Right Skills Now CNC Operations Program

Program description
Cuyahoga Community College collaborated with Swagelok Company to create this fast-track training program. Right Skills Now combines 180 hours of training at Tri-C with a 320-hour paid internship at Swagelok. Students who successfully complete the program and internship will be offered a full-time CNC operator position at Swagelok.

Other important information
Program Entry Requirements:
- High school diploma or GED
- Score level 4 or higher on WorkKeys, math, reading and locating-information tests
- Swagelok interview
- Background check

Program cost
$4,295

Financial aid eligibility
This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive
- Tri-C certificate of completion
- Opportunity to earn NIMS Level 1 CNC operator certificate
- Opportunity to be hired as a full-time CNC operator position at Swagelok

Related Programs/Training
- Manufacturing Industrial Engineering Technology (p. 147)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Right Skills Now CNC Operations Program

Sheet Metal Working, Certificate of Proficiency

Students must be working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The 5 year apprenticeship program provides training toward journey level certification. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Sheet Metal Working.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements
- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.
2. Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.
5. Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, computerized equipment and apply basic
math to meet job specifications in accordance with Sheet Metal Air
Condition Contractors National Association (SMACNA).

6. Install sheet metal items safely using hand and power tools, ladders,
scaffolds and lifting devices, and apply basic math to meet job
specifications in accordance with SMACNA standards.

7. Read and interpret blueprints, specifications and shop drawing in
order to fabricate and install various sheet metal components.

8. Startup HVAC equipment and service accordingly to meet project
specification.

9. Safely test and balance an installed system to ensure that it is
operating to design specifications.

    Be prepared for the following certifications:
    a. EPA Section 608 Certification
    b. AWSD1.1 and AWSD1.9 Welding Certifications
    c. HVAC Firelife Safety Level 1 Technician Certification

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-1630 Basic Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1010 Benefits Management</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1020 Trade History</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1030 Layout and Fabrication I</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1040 OSHA 16 Hour Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1230 Refrigeration I</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2310 Field Installation</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-xxxx Sheetmetal Working Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-1340 OSHA Standards for Construction</td>
<td>3</td>
</tr>
<tr>
<td>ATGL-2340 Advanced Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350 Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1220 Layout and Fabrication II 1</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-2330 Layout and Fabrication III 1</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2340 Advanced Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2420 Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

1 Consecutively scheduled courses.

Develop career ready social media marketing skills and digital strategies
to design, manage and optimize marketing efforts utilizing the top
online platforms. Students will also be exposed to SEO, and the
top trends for businesses in the digital environment. In the final
capstone class, students will work directly with local businesses and
plan or evaluate the social media and content strategy. Students
in this certificate will develop a comprehensive understanding of
the foundations of social media and gain actionable tools that can
immediately be applied on the job.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.
Request for eligibility to utilize Financial Assistance funds for this
program is currently pending.

This certificate will be automatically awarded when the certificate
requirements are completed. If you do not want to receive the certificate,
please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 105) about how certificate credits apply to the related
degree.

Related Degrees and Certificates

Associate of Applied Business in Marketing (p. 337)

1. Create compelling, platform-relevant imagery using basic photo and
   video editing, graphic design software and Apps (Adobe).
2. Identify appropriate analytics platform, gather data, and perform
   basic assessments to inform content development.
3. Recognize SEO key words and reinforce using social media content.
4. Write effective, grammatically correct copy using brand voice and
   style guidelines, tailored to the platform, informed by a robust (and
   judicious) understanding of search trends and hashtags.
5. Adapt technical skills to changing social media trends and develop
   strategy to stay informed and trained.
6. Differentiate between social media platforms and determine how and
   when to use them including Facebook, Twitter, Instagram, YouTube,
   and Linkedin.
7. Apply knowledge of audience management including customer
   service, publishing, engagement, content development, and crisis
   management to respond to and manage social interactions on behalf
   of the organization.
8. Use of appropriate tools to manage social media content: calendars,
   posting platforms, google analytics, social media advertising, search
   engine optimization, keywords, and reporting.
9. Create a social media plan that targets appropriate audiences and
   overall marketing and branding goals for the organization, and
   measure, evaluate, and report on outcomes of a social media
   campaign.
10. Develop creative content that is ethical, compliant, and engaging.
11. Utilize effective interpersonal skills including listening, problem
   solving, story telling, researching, time management, organization,
   collaboration and networking to perform duties successfully.

Social Media Marketing, Short-Term Certificate
## Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1080</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2040</td>
<td>Emerging Workplace Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1090</td>
<td>Social Media Content Strategies</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2080</td>
<td>Social Media Analytics</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2270</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
</tbody>
</table>

**Summer Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2090</td>
<td>Digital Marketing Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

18

---

## Sport and Exercise Studies, Associate of Applied Science

The Sport and Exercise Studies program is designed to prepare students for entry-level roles in Sport and Exercise Studies profession including: Fitness Specialist, Personal Trainer, Fitness Coordinator, Group Fitness Instructor, Specialty Instructor, and Sport Coach. The core curriculum includes Teaching Exercise Techniques, Advanced Training Concepts, Sport Injury Care, First Aid, CPR/AED, Fitness Management, Exercise Physiology, Kinesiology, Fitness and Wellness Coaching, Exercise Testing, Exercise Prescription and Program Design, technical electives, and practicum field experience. The program prepares students to take a variety of nationally recognized and accredited Personal Training and Group Fitness Instructor certifications.

**Program contact:** Learn more

Learn more (p. 133) about how certificate credits apply to the related degree.

## Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED equivalency/approved CCP student
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- Eligibility for MATH-1000 or higher (MATH-1410 Elementary Probability and Statistics I or MATH-1530 College Algebra are highly recommended for students transferring to a four year college/university.)
- PE-1000 Personal Fitness or PE-1010 Personal Strength Development or verification of personal training certificate or previous exercise training experience.
- Verification of having completed a 4-8 hour observation where the candidate "shadows" a Fitness Professional in their work environment. See details in application packet.
- GPA required: 2.0 Admissions Requirement, 2.0 overall

## Other Information

- Criminal background check required.
- Students with a BCI record are not guaranteed acceptance into the program, a practicum site, or employment in a health career field.
- Students may need to complete additional requirements depending on their chosen practicum site.
- The following courses are recommended for students transferring to a four-year college/university:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td></td>
</tr>
</tbody>
</table>

- The following courses are recommended for students not transferring to a four-year college/university:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>SES-2010</td>
<td>Exercise and Movement Anatomy</td>
<td>3</td>
</tr>
</tbody>
</table>

## Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate proficiency interpreting exercise pre-participation health screenings and performing industry-standard health and fitness assessments.
2. Effectively demonstrate and safely teach a variety of exercise modalities.
3. Effectively design, implement, supervise, and evaluate exercise prescriptions and programs based on client's assessment results, needs, goals, and interests.
4. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.
5. Perform safe and ethical practices in a variety of health and fitness-related settings within industry standards.
6. Demonstrate an understanding of planning and administering effective fitness, recreational, sport, and wellness activities and programs.
7. Demonstrate knowledge of anatomy, exercise physiology, kinesiology and biomechanics as they relate to human movement, exercise and sport.
# Suggested Semester Sequence

## First Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
</tr>
<tr>
<td>2</td>
<td>SES-1001</td>
<td>Introduction to Sport and Exercise Studies</td>
</tr>
<tr>
<td>3</td>
<td>SES-1040</td>
<td>Teaching Exercise Training Techniques</td>
</tr>
<tr>
<td>4</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>BIO-1050, BIO-105L</td>
<td>Human Biology and Human Biology Laboratory</td>
</tr>
<tr>
<td>3</td>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
</tr>
<tr>
<td>3</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>3</td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
</tbody>
</table>

## Second Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
</tr>
<tr>
<td>3</td>
<td>SES-1201</td>
<td>Fitness and Wellness Coaching</td>
</tr>
<tr>
<td>3</td>
<td>SES-2000</td>
<td>Essentials of Sports Injury Care</td>
</tr>
<tr>
<td>3</td>
<td>SES-2310</td>
<td>Advanced Training Concepts and Techniques</td>
</tr>
<tr>
<td>3-4</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</td>
</tr>
<tr>
<td>3</td>
<td>SES-2010</td>
<td>Exercise and Movement Anatomy</td>
</tr>
</tbody>
</table>

## Third Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SES-2100</td>
<td>Sport and Exercise Physiology</td>
</tr>
<tr>
<td>3</td>
<td>SES-2410</td>
<td>Exercise Testing and Prescription</td>
</tr>
<tr>
<td>3-4</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
</tr>
<tr>
<td>3</td>
<td>SES-xxxx</td>
<td>Fitness and Exercise Studies Elective</td>
</tr>
<tr>
<td>3</td>
<td>ENG-1020</td>
<td>College Composition II</td>
</tr>
<tr>
<td>3</td>
<td>ENG-102H</td>
<td>Honors College Composition II</td>
</tr>
<tr>
<td>3</td>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
</tr>
<tr>
<td>3</td>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
</tr>
<tr>
<td>3</td>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
</tr>
<tr>
<td>3</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td>3</td>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
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</table>

## Fourth Semester

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
</tr>
<tr>
<td>3</td>
<td>SES-2130</td>
<td>Kinesiology: Fundamentals of Human Movement</td>
</tr>
<tr>
<td>3</td>
<td>SES-2420</td>
<td>Advanced Exercise Testing and Prescription</td>
</tr>
<tr>
<td>2</td>
<td>SES-2840</td>
<td>Practicum: Sport and Exercise Studies</td>
</tr>
<tr>
<td>3</td>
<td>SES-xxxx</td>
<td>Fitness and Exercise Studies Elective</td>
</tr>
<tr>
<td>1</td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>HLTH-1310</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
<tr>
<td>1</td>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
</tbody>
</table>

## Technical Electives

Select from the following courses to fulfill Sport and Exercise Studies elective:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES-1100</td>
<td>Fundamentals of Fitness and Sport Management</td>
<td>3</td>
</tr>
<tr>
<td>SES-2300</td>
<td>Personal Training Certification Preparation</td>
<td>3</td>
</tr>
<tr>
<td>SES-2320</td>
<td>Group Fitness Instructor Certification Preperation</td>
<td>3</td>
</tr>
<tr>
<td>SES-2330</td>
<td>Motor Learning and Development</td>
<td>3</td>
</tr>
<tr>
<td>SES-2340</td>
<td>Analysis of Motor Skills</td>
<td>3</td>
</tr>
<tr>
<td>SES-2350</td>
<td>Exercise for Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>SES-2400</td>
<td>Concepts of Sports Coaching</td>
<td>3</td>
</tr>
</tbody>
</table>

## State Tested Nursing Assistant (Accelerated)

### Program Description

State Tested Nursing Assistants play a critical role within the health care industry. As a member of the health care team, STNA's are the frontline staff because they have the most direct contact with patients. STNA’s work in a variety of settings like in a patient’s home, rehabilitation centers, hospitals, residential care facilities, clinics, day care centers, assisted living facilities and etc. State Tested Nursing Assistants improve their patients’ well-being by assisting them with personal care and monitoring progress with their recovery goals. They work as Care Partners, Patient Care Assistants, Caregivers, Clinical Assistants, Home Health Aides, Resident Assistants and more.

### Other Important Information

- Eligible to take the Ohio Department of Health Nurse Aide Competency Exam for certification.
• High School Diploma/GED preferred or in progress. Current high school students welcomed!
• Successfully pass fingerprint and background check – Required prior to clinicals.
• Completion of immunization requirements: 2 Step TB testing and Influenza (seasonal only) prior to clinicals.
• Mandatory Skills Review Session just prior to State Test.
• Integrated Career & Job Readiness
  • CPR
  • Clinical Hours
  • State Exam Preparation
  • Onsite State Testing. The 1st attempt is included in the cost.
  • Career Day & Graduation Ceremony
  • Contact the office at 216-987-2925 for further details and schedule an orientation and STNA packet pick up.

**Program cost**
Visit the Corporate College website here for pricing.

*Cost includes all text materials, state competency exam fees, and background check.*

**Financial aid eligibility**
This program is *not* Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

**Upon completion students receive**
- Eligibility to take the Ohio Department of Health Nurse Aide Competency Exam for certification
- American Heart Association BLS CPR for Health Care Providers
- Job Readiness/Professionalism
- Clinical experience (16 hours)
- Tri-C Certification of Completion
- Certificate from the State of Ohio

**Related Programs/Training**
- Nursing (p. 128)
- Practical Nursing (p. 131)
- Health Care (Workforce Training Programs)
- Health Careers (p. 115)

To Register for and Learn more about State-Tested Nurse Aide – Accelerated Program

**State Tested Nursing Assistant Training**

**Program Description**
State Tested Nursing Assistants play a critical role within the health care industry. As a member of the health care team, STNA’s are the frontline staff because they have the most direct contact with patients. STNA’s work in a variety of settings like in a patient’s home, rehabilitation centers, hospitals, residential care facilities, clinics, day care centers, assisted living facilities and etc. State Tested Nursing Assistants improve their patients’ well-being by assisting them with personal care and monitoring progress with their recovery goals. They work as Care Partners, Patient Care Assistants, Caregivers, Clinical Assistants, Home Health Aides, Resident Assistants and more.

**Other Important Information**
- Eligible to take the Ohio Department of Health Nurse Aide Competency Exam for certification.
- High School Diploma/GED preferred or in progress. Current high school students welcomed!
- Successfully pass fingerprint and background check – Required prior to clinicals.
- Completion of immunization requirements: 2 Step TB testing and Influenza (seasonal only) prior to clinicals.
- Mandatory Skills Review Session just prior to State Test.
- Integrated Career & Job Readiness
  • CPR
  • Clinical Hours
  • State Exam Preparation
  • Onsite State Testing. The 1st attempt is included in the cost.
  • Career Day & Graduation Ceremony.
  • Contact the office at 216-987-2925 for further details and schedule an orientation and STNA packet pick up.

**Program cost**
Visit the Corporate College website here for pricing.

*Cost includes all text materials, state competency exam fees, and background check.*

**Financial aid eligibility**
This program is *not* Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075
Upon completion students receive

- Eligibility to take the Ohio Department of Health Nurse Aide Competency Exam for certification
- American Heart Association BLS CPR for Health Care Providers
- Job Readiness/Professionalism
- Clinical experience (16 hours)
- Tri-C Certification of Completion
- Certificate from the State of Ohio

Related Programs/Training

- Nursing (p. 128)
- Practical Nursing (p. 131)
- Health Care (Workforce Training Programs)

To Register for and Learn more about State-Tested Nurses Aide

Steelworkers for the Future

Program description

The Steelworkers for the Future program, developed in partnership with Arcelor Mittal, the world's leading steel and mining company, is targeted toward high tech, well-paying jobs in electrical and mechanical technology.

Program cost

60/65 credit hours cost

Financial aid eligibility

This program is Federal Financial Aid/PELL eligible for those that qualify. Scholarships, payment plans, and other financial aid options may be available. Please call 216-987-3064 for more information.

Upon completion students receive

Associate degree

Related Programs/Training

- Integrated Systems Engineering Technology (p. 321)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (p. 141)

Learn more about Steelworkers for the Future, Associate of Technical Studies with Electrical Technology and Mechanical Technology options

Sterile Processing and Distribution Technology, Certificate of Proficiency

The Sterile Processing and Distribution Technician decontaminates, inspects, assembles, and sterilizes instruments and surgical trays. The technician also manages inventory control, orders supplies, inspects, maintains, delivers and retrieves equipment and instruments for the surgery suite, emergency room and intensive care units. A hands-on clinical practicum experience in an area hospital is included in the course of study. This program prepares graduates for eligibility for the Sterile Processing and Distribution Technician Certification by the CBSPD, Certification Board for Sterile Processing and Distribution.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 134) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Related Degrees and Certificates

- Surgical Technology, Associate of Applied Science (p. 414)

Program Admission Requirements

Applications may be submitted while meeting requirements listed below. Deadline for application is June 30th.

- High School Diploma/GED
- ENG-1010 College Composition I with "C" or higher.
- Complete MATH-0955 Beginning Algebra with "C" or higher or appropriate score on Math Placement Test.
- Complete MA-1020 Medical Terminology I with "C" or higher.
- Time limit on admissions requirements prior to application is seven years.
- GPA required: 2.0 admission requirements; 2.0 overall.

Other Information

- 16 students accepted per year.
- MA-1020 Medical Terminology I must have been completed within the past seven years and may only be repeated once to improve a grade.
- Criminal background check required.
- Non-native English speaking applicants are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing, 23, and Speaking 24.
• Students wishing to apply coursework to the Surgical Technology Degree – to be eligible to enroll in BIO-2331 Anatomy and Physiology I students must either achieve the appropriate placement score on the Biology placement test or complete BIO-1100 Introduction to Biological Chemistry with “C” or higher or complete CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry with “C” or higher.

• Students wishing to apply coursework to the degree program should take MATH-1240 Contemporary Mathematics

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply principles and techniques of decontamination to render medical devices safe to handle without protective attire.
2. Inspect, assemble, pack, and wrap medical devices in preparation for appropriate sterilization process and/or distribution.
3. Safely selects and performs proper sterilization techniques, validates sterility assurance level monitoring, and maintains sterilization integrity during storage.
4. Inventory, stock, and/or distribute medical/surgical supplies to meet patient care areas needs in a cost efficient manner.
5. Communicate verbally and in writing to co-workers, customers, and suppliers to ensure that pertinent departmental information is shared in a timely manner to meet organizational needs.
6. Demonstrate professional conduct and work practices according to appropriate federal regulations, industry standards, and facility policies.
7. Prepared to sit for Sterile Processing & Distribution Technician Certification given by the Certification Board for Sterile Processing and Distribution (CBSPD).

Suggested Semester Sequence
Program Admissions Requirements Semester  Credit Hours
MA-1020  Medical Terminology I  3
Select one of the following:  
ENG-1010  College Composition I  3
ENG-101H  Honors College Composition I  6
Credit Hours
First Semester
MATH-1100  Mathematical Explorations (or higher)  2  3
SURT-1700  Sterile Processing Tech I  4
SURT-1720  Introduction to Hospital Administration  1
Select one of the following:  
BIO-1050  Human Biology  1  3
BIO-1100  Introduction to Biological Chemistry  
Credit Hours  11
Second Semester
IT-1090  Computer Applications  3
SURT-1710  Sterile Processing Tech II  4
SURT-1861  Clinical Experience: Sterile Processing  2
Select one of the following:  
HTEC-1110  Ethics for Health Care Professionals  1-3
PHIL-2050  Bioethics  

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>
| COMM-1000| Fundamentals of Interpersonal
Communication                  | 3            |
| COMM-1010| Fundamentals of Speech Communication            |              |
| COMM-101H| Honors Speech Communication                | 13-15        |

Total Credit Hours  30-32

1 BIO-1050 Human Biology is a lecture course only, and may be selected in place of BIO-1100 Introduction to Biological Chemistry if working for the Certificate only. Students wishing to apply coursework to the Surgical Technology degree program must take BIO-1100 Introduction to Biological Chemistry.

2 Students wishing to apply coursework to the degree program should take MATH-1240 Contemporary Mathematics.

Surgical Technology, Associate of Applied Science

A surgical technologist assists the surgeon and assistants by passing instrumentation and supplies during surgical procedures. Surgical technologists work with other surgical personnel to prepare the operating room for a variety of surgical cases. A surgical technologist may be employed in the surgical department of hospitals and outpatient surgery centers. The program provides a hands-on lab surgery and four semesters of clinical experience to enable students to gain essential surgical skills. Students will be prepared to take the Certified Surgical Technologist (CST) Examination. The program is fully accredited by the:

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 U.S. Highway 19 North, Suite 158
Clearwater, FL 33763
Phone: 727-210-2350
Fax: 727-210-2354
www.caahep.org

Program contact: Learn more

Learn more (p. 134) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Sterile Processing and Distribution Technology, Certificate of Proficiency (p. 413)
### Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the below requirements. Deadline to apply is May 31st.

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test to enroll in MATH-1240 Contemporary Mathematics.
- Complete the following:
  - High School Diploma/GED
  - Complete the following courses, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
  - Criminal background check required.

### Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply principles of aseptic technique in the O.R. setting according to AST guidelines.
2. Demonstrate competence in skills required during the peri-operative event to insure the clients and staff's safety and optimal surgical outcome.
3. Demonstrate professional conduct according to the AST Code of Ethics and departmental policies.
4. Apply knowledge of Anatomy and Physiology, Microbiology, Pharmacology, and Medical Terminology within the surgical environment.
5. Effectively communicate with the O.R. team members during the peri-operative event according to the facility's policies and procedures and surgeons' preferences.
6. Prepare graduates for the Certified Surgical Technologist (CST) Examination.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Program Admission Requirements Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331 Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>MA-1020 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>SURT-1000 Survey of Surgical Technology</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours 11</strong></td>
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#### First Semester

<table>
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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HTEC-1610</td>
<td>Introduction to Pharmacology</td>
<td>2</td>
</tr>
<tr>
<td>SURT-1300</td>
<td>Introduction to Surgery</td>
<td>5</td>
</tr>
<tr>
<td>SURT-130L</td>
<td>Surgery Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours 13</strong></td>
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</tr>
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</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>SURT-1330</td>
<td>General Surgery</td>
<td>5</td>
</tr>
<tr>
<td>SURT-1911</td>
<td>Clinical Experience I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours 12</strong></td>
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#### Summer Session

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<tr>
<td>SURT-1921</td>
<td>Clinical Experience II</td>
<td>2</td>
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<tr>
<td></td>
<td><strong>Credit Hours 2</strong></td>
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#### Third Semester

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MA-2010</td>
<td>Medical Terminology II</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>SURT-2300</td>
<td>Surgical Specialties</td>
<td>5</td>
</tr>
<tr>
<td>SURT-2851</td>
<td>Clinical Experience III</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours 13</strong></td>
<td></td>
</tr>
</tbody>
</table>

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### Other Information

- Fourteen students accepted per year (contingent upon available clinical sites)
- All admission requirements (except ENG-1010 College Composition I and MATH-1240 Contemporary Mathematics) must have been completed within the past seven years, and may only be repeated once to improve a grade.
- Upon acceptance to the program and prior to a clinical assignment, students must submit evidence of good health, personal healthcare insurance coverage, and certification in CPR.
- Accepted candidates will be required to attend a student orientation session after acceptance into the program.
- Program only starts in the Fall Semester. Students are strongly encouraged to take BIO-2341 Anatomy and Physiology II and BIO-2500 Microbiology and may take any of the GERS and Program Requirements (other than the "SURT" courses) while waiting.
- Non-native English speaking applicants: Admission into Cuyahoga Community College is premised on a complete and accurate initial application to the College, including, if applicable, proof of English Language Proficiency Requirements for admission as indicated on the English Language Proficiency Requirements for Admissions to the College, and available on the web at: [http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html](http://www.tri-c.edu/get-started/international-students/english-language-proficiency-requirements-for-admission.html)
- To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Criminal background check required.

To be accepted into any selective admission programs, students must successfully complete English as a Second Language (ESL) course/s, as referenced above, if deemed necessary by the College at the time of enrollment. Admission is conditioned upon achieving the necessary grade point average (GPA), English language proficiency requirements and any specific pre-requisite courses, and by meeting program accreditation or licensing requirements as evidenced in the Program Handbook for the specific program.
- Criminal background check required.
Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
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</tr>
<tr>
<td>SURT-2862</td>
<td>Clinical Experience IV</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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<td>3</td>
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<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>COMM-101H</td>
<td>Honors Speech Communication</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>Total Credit Hours</td>
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</tr>
</tbody>
</table>

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1311</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>Total Credit Hours</td>
<td>16</td>
</tr>
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</table>

Second Semester

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1030</td>
<td>Payroll</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-2041</td>
<td>Business Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-2050</td>
<td>Volunteer Income Tax Assistance</td>
<td>2</td>
</tr>
<tr>
<td>BADM-2151</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communications</td>
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</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
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</tr>
<tr>
<td>Credit Hours</td>
<td>Total Credit Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credit Hours: 31

The Experienced Manager Certificate

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate tax preparation information both verbally and in writing, relative to their knowledge and skill level with internal and external constituents, both inside and outside the field.

2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to prepare taxes in a manner that is within the appropriate professional code of conduct.

3. Accurately record and apply fundamental tax preparation processes to properly prepare small business income-tax returns, individual income tax returns, and payroll tax returns.

4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary tax preparation software to record and prepare small business income tax returns, individual income tax returns, and payroll tax returns.

Gainful Employment Disclosure

Program description

The Experienced Manager Certificate is a 6 ½ day program designed to provide a tailored development experience for seasoned supervisors to mid-managers. The program focuses on elevating skills and behaviors critical to supporting senior leadership in connecting and communicating business strategy back to the day to day. Fine tuning leadership skills and
behaviors will help to further engage, inspire, and drive teams and results forward.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLDR-0189</td>
<td>The Experienced Manager Certificate (Cohort)</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Complete all 11 courses to receive the certificate:

Take the cohort, which includes all 11 courses, for one low fee:

Or register for the classes individually:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLDR-0180</td>
<td>Create a Shared Vision and Strategy</td>
<td>0.4</td>
</tr>
<tr>
<td>ZLDR-0181</td>
<td>Execute Your Team's Strategy and Goals</td>
<td>0.4</td>
</tr>
<tr>
<td>ZLDR-0182</td>
<td>Leading at the Speed of Trust</td>
<td>0.8</td>
</tr>
<tr>
<td>ZLDR-0183</td>
<td>Team Excellence</td>
<td>0.4</td>
</tr>
<tr>
<td>ZLDR-0184</td>
<td>Leaders@Change</td>
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<tr>
<td>ZLDR-0185</td>
<td>Ongoing Performance Management</td>
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<tr>
<td>ZLDR-0186</td>
<td>Coaching for Accelerated Performance</td>
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</tr>
<tr>
<td>ZLDR-1288</td>
<td>Emotional Intelligence (EQ) 2.0</td>
<td>0.4</td>
</tr>
<tr>
<td>ZLSS-1109</td>
<td>Building Process Excellence</td>
<td>0.4</td>
</tr>
<tr>
<td>ZLSS-1113</td>
<td>Practical Problem-Solving</td>
<td>0.4</td>
</tr>
<tr>
<td>ZPDI-1187</td>
<td>Dynamic Presentation Skills</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Program cost

Visit the Corporate College website here for pricing.

Financial aid eligibility

This program is not Federal Financial Aid/Pell Eligible.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-3075

Upon completion students receive

Certificate of Completion for each course as well as a Program Certificate

Related Programs/Training

- Organizational Effectiveness (Professional Development Programs)
- Business Management (p. 95)
- Business Management (Human Resources Management) (p. 96)
- Business Management (International Business) (p. 97)
- Business Management (Small Business Management) (p. 97)

To Register for and Learn more about The Experienced Manager Certificate.

Veterinary Technology, Associate of Applied Science

Veterinary technicians work under the supervision of a licensed veterinarian to provide health care for animals in various settings. Career options for graduate technicians include private practices, emergency clinics, specialty clinics, educational institutions, research facilities, government agencies and zoological parks. Students work with companion animals, food animals, horses, laboratory animals and exotic species throughout this program.

Program contact: Learn more

Program Admissions Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- GPA required: 2.75 in program admission required courses, 2.25 in other college courses.
- Written verification of 10 hours of recent (within one calendar year prior to Program application) observation/shadowing or employment in a veterinary facility.
- Complete the following admissions requirement courses with a grade of "C" or higher. Admission requirement courses may be repeated only once to improve a grade below "C". Only two withdrawals total from any of these courses for academic reasons will be accepted.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-1120</td>
<td>Introduction to Veterinary Technology</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-4</td>
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<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

Other Information

- 25 students per year are accepted into the program.
- Upon acceptance to the program and prior to matriculation, the applicant will be required to complete the health requirements and criminal background check for the veterinary technology program.
- Accepted candidates will be required to attend a group information session prior to their first fall semester in the program.
- Criminal background check required.
Applicants must establish and use an account with a recordkeeping service designated by the College for Health Careers for the background check and health information.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize knowledge and interpersonal skills to educate clients and communicate with colleagues.
2. Obtain, process, analyze, and record accurate multi-modal diagnostic information.
3. Ensure compliance with state and federal regulations and act in a professional and ethical manner in accordance with AVMA and NAVTA Guidelines.
4. Identify and understand the pharmacology and effects of drugs and therapeutic substances in various animal species.
5. Operate and maintain veterinary equipment and facilities.
6. Provide proficient animal husbandry, medical, and surgical care.
7. Apply organizational principles and practices that permit a facility to provide quality patient care and client service.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Program Admissions Requirements Semester</th>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100 Introduction to Biological Chemistry</td>
<td>1st</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240 Contemporary Mathematics</td>
<td>1st</td>
<td>3</td>
</tr>
<tr>
<td>VT-1120 Introduction to Veterinary Technology</td>
<td>1st</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>1st</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>1st</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>1st</td>
<td>3</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>First Semester</strong></td>
<td><strong>First Semester</strong></td>
</tr>
<tr>
<td>BIO-1410 Anatomy &amp; Physiology of Domestic Animals</td>
<td>1st</td>
<td>4</td>
</tr>
<tr>
<td>VT-1325 Veterinary Office Applications</td>
<td>1st</td>
<td>2</td>
</tr>
<tr>
<td>VT-1401 Veterinary Science I</td>
<td>1st</td>
<td>4</td>
</tr>
<tr>
<td>VT-1521 Veterinary Pathology I</td>
<td>1st</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td><strong>Second Semester</strong></td>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>BIO-1420 Anatomy &amp; Physiology of Domestic Animals II</td>
<td>2nd</td>
<td>3</td>
</tr>
<tr>
<td>VT-1410 Veterinary Science II</td>
<td>2nd</td>
<td>3</td>
</tr>
<tr>
<td>VT-1530 Veterinary Pathology II</td>
<td>2nd</td>
<td>2</td>
</tr>
<tr>
<td>VT-1600 Veterinary Surgical Nursing and Assisting</td>
<td>2nd</td>
<td>3</td>
</tr>
<tr>
<td>VT-1700 Veterinary Diagnostic Imaging</td>
<td>2nd</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td><strong>Summer Session</strong></td>
<td><strong>Summer Session</strong></td>
</tr>
<tr>
<td>VT-2200 Dentistry for Veterinary Technicians</td>
<td>3rd</td>
<td>1</td>
</tr>
<tr>
<td>VT-2300 Pharmacology for Veterinary Technicians</td>
<td>3rd</td>
<td>2</td>
</tr>
<tr>
<td>VT-2402 Veterinary Pathology III</td>
<td>3rd</td>
<td>2</td>
</tr>
<tr>
<td>VT-2851 Veterinary Practicum and Seminar I</td>
<td>3rd</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
<td><strong>Credit Hours</strong></td>
</tr>
</tbody>
</table>

**Third Semester**

| VT-2412 Veterinary Pathology IV | 3rd | 2 |
| VT-2520 Animal Health and Disease | 3rd | 3 |
| VT-2610 Veterinary Anesthesia, Anelgesia, & Dental Techniques | 3rd | 3 |
| VT-2860 Veterinary Practicum and Seminar II | 3rd | 2 |

Select one of the following:

| COMM-1000 Fundamentals of Interpersonal Communication | 3rd | 3 |
| COMM-1010 Fundamentals of Speech Communication | 3rd | 3 |
| COMM-101H Honors Speech Communication | 3rd | 3 |
| **Credit Hours** | **Credit Hours** | **Credit Hours** |

**Fourth Semester**

| VT-2650 Veterinary Emergency and Critical Care | 4th | 1 |
| VT-2700 Avian and Exotic Animal Medicine | 4th | 2 |
| VT-2940 Veterinary Field Experience | 4th | 2 |
| Arts and Humanities/Social and Behavioral Science requirement (p. 33) | 4th | 3 |
| **Credit Hours** | **Credit Hours** | **Credit Hours** |
| **Total Credit Hours** | **Total Credit Hours** | **Total Credit Hours** |

1. Must complete ENG-1010 College Composition I with a grade of "C" or higher for Veterinary Technology program admission.
2. Must complete MATH-1240 Contemporary Mathematics with a grade of "C" or higher for Veterinary Technology program admission, MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240, MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.
3. CHEM-1010 Introduction to Inorganic Chemistry will be accepted in place of BIO-1100 Introduction to Biological Chemistry. Must complete BIO-1100 Introduction to Biological Chemistry (or CHEM-1010 Introduction to Inorganic Chemistry) with a grade of "C" or higher for admission to the Veterinary Technology program.

**Visual Communication & Design (Graphic Design), Certificate of Proficiency**

This one-year certificate program is designed to accommodate individuals who want to upgrade their design, drawing and computer
graphics skills. The courses are designed to improve the graduate’s design, drawing, research, and problem solving techniques.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here (p. 113), here (p. 113), and here (p. 114) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure

Program Admission Requirements
• High School Diploma/GED highly recommended, but not required.
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test highly recommended.

Other Information
• Contact Program Coordinator, Program Manager, or Counselor for additional information.
• Non-degree students may enroll in individual courses with departmental approval.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.
2. Conduct yourself professionally and ethically according to professional standards.
3. Develop team skills including taking and giving constructive criticism, leading and/or following directions.
4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production – print and/or web.
5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th></th>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1061</td>
<td>History of Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>3</td>
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<tr>
<td></td>
<td>Credit Hours</td>
<td>18</td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2301</td>
<td>Graphic Design and Illustration</td>
<td>3</td>
</tr>
<tr>
<td>VCGD-1500</td>
<td>Advertising and Design</td>
<td>3</td>
</tr>
<tr>
<td>VCGD-2232</td>
<td>Typography II</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCGD-2331</td>
<td>Brand Identity Design</td>
<td></td>
</tr>
<tr>
<td>VCGD-2431</td>
<td>Package Design</td>
<td></td>
</tr>
<tr>
<td>VCGD-2400</td>
<td>Information Graphic Design</td>
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</tr>
<tr>
<td></td>
<td>Credit Hours</td>
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<tr>
<td></td>
<td>Total Credit Hours</td>
<td>33</td>
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</tbody>
</table>

Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business

The Graphic Design degree program prepares students for positions with graphic design firms, in-house design departments, exhibit and package design firms, publishers, broadcast media, printers and media design companies. The Graphic Design curriculum is based on professional standards in creating a designer portfolio, preparing the graduates for a variety of full-time or freelance employment in the graphic design industry. Students have an opportunity to develop or upgrade drawing and computer graphics skills for communicating visually. Emphasis is on design for print and media, studio skills and critical thinking applications. Problem solving and research concept development projects are explored and applied as they relate to the graphic design professional.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 113) about how certificate credits apply to the related degree.

Program Admission Requirements
• High School Diploma/GED highly recommended, but not required
• ENG-0990 Language Fundamentals II or appropriate score on English Placement Test highly recommended
• MATH-0955 Beginning Algebra or appropriate score on math placement test highly recommended
• Complete VC&D-1000 Visual Communication Foundation

Other Information
• Non-degree students may enroll in individual courses with departmental approval.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.
2. Conduct yourself professionally and ethically according to professional standards.
3. Develop team skills including taking and giving constructive criticism, leading and/or following directions.
4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production print and/or web.
5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.
6. Use design principles (color, composition, and type) to execute project objectives.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1050</td>
<td>Drawing I</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
</tr>
<tr>
<td>VC&amp;D-1061</td>
<td>History of Graphic Design</td>
</tr>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
</tr>
<tr>
<td>Arts and Humanities (p. 28)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
</tr>
</tbody>
</table>

Credit Hours: 18

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
</tr>
<tr>
<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
</tr>
<tr>
<td>VCGD-1500</td>
<td>Advertising and Design</td>
</tr>
<tr>
<td>Communications requirement (p. 27)</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 28)</td>
</tr>
</tbody>
</table>

Credit Hours: 15

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2301</td>
<td>Graphic Design and Illustration</td>
</tr>
<tr>
<td>VCGD-2331</td>
<td>Brand Identity Design</td>
</tr>
<tr>
<td>VCGD-2232</td>
<td>Typography II</td>
</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCGD-2400</td>
<td>Information Graphic Design</td>
</tr>
<tr>
<td>Social and Behavioral Sciences requirement (p. 29)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 15

Total Credit Hours: 60

Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business

The Illustration degree program prepares students for positions as 2D or 3D illustrators in design and visualization studios, ad agencies, publishing houses, media studios or freelance contractors. The Illustration curriculum is based on professional standards in building a marketable portfolio, preparing graduates for a variety of full-time or freelance employment in Visualization, Illustration and Visual Communication industries. Students have an opportunity to develop or upgrade drawing, rendering, modeling and digital illustration skills. Emphasis is on the creation of illustration for print and digital media, studio skills, conceptual and critical thinking, problem solving and editorial research projects as they relate to the illustration professional.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 113) about how certificate credits apply to the related degree.

Program Admission Requirements

• High School Diploma/GED highly recommended, but not required.
• MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students or appropriate score on Math Placement Test highly recommended.
Other Information

• Non-degree students may enroll in individual courses with departmental approval.
• Contact Program Coordinator, Program Manager or Counselor for additional information.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply effective verbal, written and visual communication skills to present a concept, idea, or portfolio to co-workers, clients and other professionals.
2. Follow directions, give and receive criticism and work effectively in a team environment to solve visual communication problems.
3. Research and assess technical and creative aspects of multiple projects to satisfy client needs and to continually evaluate and improve professional skills and practices.
4. Apply knowledge of art history, theories and principles to traditional and digital drawing and design skills for visual communication applications relevant to contemporary applied art markets.
5. Develop career goals, applying basic business and financial skills, self-discipline and motivation, versatility and adaptability, self-promotion and communication skills to create a sustainable art business.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1050 Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000 Visual Comm</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1142 Illustration I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450 Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
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</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1431 Vector Graphics</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640 3D Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2142 Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>Communication Requirements (p. 27)</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2301 Graphic Design and Illustration</td>
<td>3</td>
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<tr>
<td>VCIL-2040 3D Motion</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2271 2D Animation</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2341 Illustration for Story</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities Requirements (p. 28)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2991 Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td>Social and Behavioral Science/Natural Science Requirement (p. 29)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:
- ART-2000 Life Drawing I
- VCIM-1200 Game Design I: Introduction to Game Design
- Select one of the following: 3
  - VCIL-2540 3D Studio
  - VCIL-2641 Illustration Studio
- ART-xxxx Art Elective
- VCXX-xxxx Visual Communications elective

Credit Hours 15
Total Credit Hours 60

Visual Communication & Design with a Concentration in Photography, Associate of Applied Business

This concentration prepares students to enter a broad range of photographic careers in editorial, advertising, corporate communications, wedding and portrait photography, digital retouching and post production, styling and production assisting. The curriculum is based on professional imaging standards and practices in a rapidly changing field. Emphasis on development of the visual, technical and business skills required in today's market enables our graduates to respond effectively to the changing demands of our multimedia communications environment.

Departmental approval may be granted for enrollment in individual courses for students who are not degree majors.

Some photography courses may be available at Metropolitan Campus; completion of degree requires attendance at Western Campus.

Program contact: Learn more

Learn more (p. 114) about how certificate credits apply to the related degree.

Program Admission Requirements

• Complete VCPH-1261 Photography I with grade of “C” or higher.

Other Information

• Submission of a portfolio.
• Portfolio reviews conducted twice per year at the end of Fall and Spring Semesters.
Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. **Imaging Aesthetic.** Determine and develop the possibilities of digital and graphic designs to produce compelling images that are believable and convey a message through lighting, color, special techniques and subject knowledge.

2. **Imaging Technical.** Apply knowledge of and skills in Photoshop, Lightroom, color management, color calibration and proofing, color printing, and scanning, to perform digital asset management and use photographs in multi-media applications including websites, power point, programs, FTP sites and print media.

3. **Professionalism.** Demonstrate strong work ethic and standards; apply listening, learning, and communication skills; employ interpersonal skills using a high degree of emotional intelligence and demonstrate familiarity with legal and business issues.

4. **Photo and Imaging Technical.** Apply basic knowledge of camera operation, Mac OS X, and Photoshop to perform onset diligence including verifying exposure histogram, checking lights and being visually alert for malfunctions.

5. **Studio.** Apply basic knowledge of grip, lighting and light modification tools, have a flexible attitude, be adaptable when working in a studio and/or location environment.

6. **Location.** Check, pack and troubleshoot equipment, be visually alert, and watch for mechanical, people and environmental problems.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1000 Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1150 History of Photography</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1201 Typography I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1261 Photography I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>ENG-1010 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101H Honors College Composition I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (p. 28)</td>
<td>3</td>
</tr>
<tr>
<td>VCGD-2232 Typography II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450 Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2260 Photography II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2050 Commercial Studio Techniques I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCPH-2160 Digital Video for Photographers</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2450 Digital Imaging II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2550 Commercial Studio Techniques II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2660 Photography III</td>
<td>3</td>
</tr>
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<td>Select one of the following:</td>
<td>3</td>
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<tr>
<td>COMM-1010 Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM-101H Honors Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MJS-1310 Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2530 Professional Practices in Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2541 Individual Projects - Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2760 Editorial Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2990 Photographic Portfolio Preparation</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

1 MARS-1180 Introduction to Media Arts and Filmmaking taken prior to Fall 2017 will be accepted in place of VCPH-2160.

Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business

The goal of the Web & Interactive Media degree program is to prepare our graduates for a rewarding career in the growing fields of Web, Interactive Media and Game Design. The curriculum is based on the professional standards and best practices of web, media and game development companies, in-house or corporate media departments, design studios, and advertising agencies. Students are assisted in the development of studio, technical and professional skills while building a strong, marketable portfolio. The program offers coursework in a variety of media, with two distinct areas of specialization: Web Design and Construction and Game Design.

Program contact: Learn more

Learn more (p. 114) about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED highly recommended, but not required
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test highly recommended
- Complete VC&D-1000 Visual Communication Foundation
Other Information

- Contact Program Coordinator for additional information.
- Non-degree students may enroll in individual courses if they meet prerequisites or with departmental approval.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Apply good interpersonal skills including collaboration, flexibility, adaptability, cultural diversity, stress management, coping with frustration, work ethic, willingness to learn new skills to work as an effective team member to meet the client's needs.
2. Use good listening, written, and verbal communication skills to present oneself professionally, follow directions, and interact with clients, stakeholders, and project team members.
3. Use good time management, organizational, flowcharting, business, and technical skills to manage multiple responsibilities and meet project deadlines.
4. Apply knowledge of copyright law and ethics to ensure the integrity of project for the client.
5. Tell a story using appropriate digital media, principles of design, color, typography, motion, sound and timing to create an emotional response that supports the client's message.
6. Gather and assess information relevant to the project/design challenge; research and legally acquire necessary source content.
7. Evaluate situations, challenges, and processes for business and create a plan for appropriate solutions.
8. Present ideas and strategies to clients and co-workers that clarify the proposed visual story, plan of execution and measureable outcome.
9. Develop a fundamental knowledge of industry standard tools and best practices for visual and analytical media development.
10. Measure and analyze outcomes of projects and campaigns.

Suggested Semester Sequence

First Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
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</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML (Option A)</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design (Option B)</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<tr>
<td>Communications requirement (p. 27)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1970</td>
<td>Midpoint Portfolio Review</td>
<td>1</td>
</tr>
<tr>
<td>VC&amp;D-2830</td>
<td>Cooperative Field Experience</td>
<td></td>
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</table>

Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>VCIM-2271</td>
<td>2D Animation</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2371</td>
<td>Interactive Media I</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2700</td>
<td>User Experience Design</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities (p. 28)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- VCIM-2281 Web Publishing III: JavaScript (Web Publishing III: JavaScript)
- VCIM-2200 Game Design III: Game Design Studio (Option B)

Credit Hours 15

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2072</td>
<td>Service Learning: Real World Experience in Web, Game Design, and Interactive Media</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2380</td>
<td>Interactive Media II: App Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2291</td>
<td>Web Publishing IV: Data-Driven Sites</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2401</td>
<td>Game Design IV-Game Publishing</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 15

Total Credit Hours 61

Options

(A) Technical Electives for Web Design & Construction Specialist
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2281</td>
<td>Web Publishing III: JavaScript (Web Publishing III: JavaScript)</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional program courses 52

Total Credit Hours 61

(B) Technical Electives for Game Designer
Game Designer: Helps students learn the fundamentals of 2D and 3D Game Design for various platforms including console, computer, and mobile devices.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1400</td>
<td>Game Design II: Game Engines</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 61
Voicewriting, Short-Term Certificate

Entry-level court reporter in the captioning and/or CART avenues of the profession. Entry-level employment as a transcriptionist using voice recognition technology. Upon completion of this certificate, students can sit for the NVRA and/or NCRA Written Knowledge Test. This is a 100-question testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NVRA Skills Test using voice writing technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent – 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 99) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admissions Requirements

- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Write 225 wpm with 95% accuracy and apply real-time technology skills.
5. Write 140 wpm of literary material with 96% real-time accuracy.
6. Effectively apply the use of specialized vocabulary (business, sports, meteorology, politics) as found in current events to capture the spoken word in real time writing.
7. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th></th>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1100</td>
<td>Introduction to Voice Captioning</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1200</td>
<td>Voicewriting I</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1210</td>
<td>Voicewriting II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1470</td>
<td>Transcript Production for Court Reporting and Captioning</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-2351</td>
<td>Editing Legal Documents</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Second Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1220</td>
<td>Voicewriting III</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-2200</td>
<td>Medical Terminology for Captioning and Court Reporting</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2401</td>
<td>Speedbuilding and Transcription at 180 WPM</td>
<td>3</td>
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<td>Credit Hours</td>
<td>10</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Third Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-2451</td>
<td>Speedbuilding and Transcription at 225 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2841</td>
<td>Internship</td>
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<tr>
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<td>Credit Hours</td>
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</tr>
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<td>Total Credit Hours</td>
<td>28</td>
</tr>
</tbody>
</table>

Web Application Development, Short-Term Certificate

Short-term certificate in Web Application Development. Students will explore current technologies to analyze, design, develop, implement and test database driven Web applications. Skills acquired will prepare students for jobs as Web, Application, PHP, ASP.NET and Web 2.0 developers.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.
Learn more (p. 155) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

**Program Admission Requirements**
- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0965 Intermediate Algebra or MATH-1240 Contemporary Mathematics or appropriate score on Math Placement Test.

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Engage in directed work as a member of diverse software development and/or support team.
2. Analyze, design, develop and test web applications to address specified business problems using high-level languages, technologies and appropriate methodologies.
3. Prepare, test and deploy a web application within a given platform(s) and framework(s) following legal and ethical guidelines.
4. Troubleshoot web application issues to determine the best solution to satisfy the customer.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Summer Start</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>IT-1025 Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td>IT-1050 Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1150 Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT-2351 Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>IT-2650 Java Programming</td>
<td>4</td>
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<tr>
<td></td>
<td>11</td>
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<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>IT-2320 Interactive Internet Programming</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>IT-2030 ASP.NET Web Programming</td>
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</tr>
<tr>
<td>IT-2600 E-Business Programming Technologies</td>
<td></td>
</tr>
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<td></td>
<td>7-8</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>24-25</td>
</tr>
</tbody>
</table>

The goal of the Certificate of Proficiency in Web Design Development is to prepare candidates for a rewarding career in this expanding field. The curriculum is based on web standards and best practices of web design development companies, as well as in-house or corporate web teams. Learners are assisted in the development of technical, design and professional skills while building a strong, marketable portfolio. The certificate offers in-depth coursework in a broad range of web related skills, from coding to user experience. This sequence is especially beneficial for those who already hold a degree in a related field but wish to update or add web design development to their skillset. Learners who wish to apply these courses to obtain an Associate of Applied Business degree in Visual Communication and Design with a concentration in Web and Interactive Media may do so seamlessly.

**Program contact:** Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 114) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

**Program Admission Requirements**
- High School Diploma/GED not required, but highly recommended.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test recommended.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test is highly recommended.
- Complete VC&D-1000 Visual Communication Foundation

**Program Learning Outcomes**
This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize interviews, surveys, questionnaires and general research to assess client and end users needs. Identify possible technical and organizational solutions to meet desired outcomes.
2. Build wireframes, flowcharts, lists, navigational structure and visual designs per research and client consensus.
3. Construct websites per specifications, conduct usability and technical testing, make corrections and adjustments as needed and deploy. Measure and analyze post-execution outcomes.
4. Develop essential interpersonal skills including collaboration, adaptability, presenting ideas and understanding cultural diversity. Practice maintaining a good attitude, balancing multiple deadlines, work ethic, listening, written, and verbal communication skills. Utilize knowledge of copyright law and ethics to ensure the integrity of project. Plan for ongoing professional development.

Suggested Semester Sequence

**Summer Start**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
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**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1201</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
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<tr>
<td>VCIM-2271</td>
<td>2D Animation</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1431</td>
<td>Vector Graphics</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
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<td></td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-2131</td>
<td>Oxyfuel Processes/Plasma Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>COMM-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td></td>
</tr>
<tr>
<td>VCIM-2072</td>
<td>Service Learning: Real World Experience in Web, Game Design, and Interactive Media</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours**

**30**

Welding Technology, Short-Term Certificate

This program provides additional workplace skills to students who have already been trained in the fundamentals of welding. Students will gain familiarity with additional workplace safety, programing of welding robots, metallurgy, fabrication, and some nondestructive testing techniques.

**THIS PROGRAM IS CURRENTLY ON HOLD AND NOT ACCEPTING NEW STUDENTS.**

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more (p. 145) about how certificate credits apply to the related degree.

Gainful Employment Disclosure

Program Admission Requirements

- High School Diploma/GED
- Completion of Introductory Welding certificate or equivalent industry certifications.
- “C” or better in ISET-1101 Welding Blue Print Reading, ISET-2100 Gas Metal Arc Welding (MIG), ISET-2110 Gas Tungsten Arc Welding (TIG), ISET-2120 Shielded Metal Arc Welding (STICK) or equivalent experience.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Train operators, troubleshoot equipment, and analyze root causes and identify corrective actions of weld issues.
4. Work with production and engineering teams to develop equipment and processes for production needs, and customer expectations.
5. Use practical knowledge/experience of fabricating, blue print reading, and welding skills to complete most welding projects.

Suggested Semester Sequence

**First Semester**

<table>
<thead>
<tr>
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### 10K Small Businesses (ZSBI)

**Application Information:** Learn More

**ZSBI-1000 10,000 Small Businesses**

**10 CEU's**

Goldman Sachs 10,000 Small Businesses is a program for small businesses that links learning to action. Through the program, participants will gain practical skills in topics such as negotiation, marketing, and employee management that can immediately be put into action. In addition, they will receive the tools and professional support to develop a strategic and customized growth plan that will take their business to the next level. Across the U.S., 10,000 Small Businesses graduates are increasing their revenues and creating new jobs in their communities: 45% reported creating new jobs, 64% of participants reported an increase in revenues, and 80% are doing business with each other. The program also has a 99% completion rate. Selected applicants will gain access to a world-class business education and connections to a professional support network at no cost.

**Contact hours:** 100

**Not financial aid eligible.**

### A+ Computer Maintenance (ZACM)

**ZACM-1013 Computer Support Specialist**

**13.2 CEU's**

If you have an interest in computers and technology, enjoy working with your hands, and already have job skills like customer service, attention to detail, and communication; we have training that can transition you into a rewarding career in information technology (IT). Tri-C offers a bundle of foundation-level courses will help you gain the knowledge, skills and abilities to become a CompTIA Certified Computer Support Specialist. No prior experience? No worries! Your path to success starts now. The Computer Support Specialist bundle incorporates IT Fundamentals, CompTIA Part 1 & 2 and CompTIA A+ Certification Exam Prep.

**Contact hours:** 132

**Not financial aid eligible.**

### Accounting (ACCT)

**ACCT-1011 Business Math Applications**

**3 Credits**

Application of applied quantitative procedures to typical accounting, financial, and business situations. Includes percents in business, simple and compound interest, financing, property and sales taxes, applied statistics, present and future values, and other accounting/business topics. Requires use of financial (business analyst) calculator and available internet resources in problem-solving.

**Lecture:** 3 hours

**Prerequisite(s):** MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test.

**ACCT-1020 Applied Accounting**

**3 Credits**

Fundamentals of accounting procedures as used in a double-entry bookkeeping system. Emphasis on application of techniques and procedures to record financial information in an accounting system and to generate financial statements. Introduction to use of commercial general ledger software in recording business transactions.

**Lecture:** 3 hours

**Prerequisite(s):** None.

**ACCT-1030 Payroll**

**3 Credits**

Detailed study of payroll, record-keeping regulations, reporting requirements, accounting procedures and federal labor laws. Computations of gross wages, salaries, mandatory deductions of federal, state and local taxes, and optional deductions. Covers employers’ related taxes and preparation of various payroll tax forms.

**Lecture:** 3 hours

**Prerequisite(s):** ACCT-1311 Financial Accounting; or ACCT-1020 Applied Accounting and ACCT-2830 Cooperative Field Experience; or departmental approval: equivalent coursework or experience.

**ACCT-1041 Individual Taxation**

**4 Credits**

Individual income taxes with concentration at federal level. History, assumptions and objectives of federal income tax law. Determination of filing status, exemptions, inclusions, exclusions, adjustments, deductions, credits, tax liability, and reporting requirements. Completion of tax returns, tax planning, and introduction to federal tax research. Use of commercial tax-preparation software. Determination of sole proprietorship income and taxes thereon.

**Lecture:** 4 hours

**Prerequisite(s):** None.

**ACCT-1311 Financial Accounting**

**3 Credits**

Introduction to methodology and logic of accounting procedures, principles, and standards used in preparing financial information for external users. Emphasis on measuring, describing, recording, interpreting, and analyzing economic activities within for-profit business entities.

**Lecture:** 3 hours

**Prerequisite(s):** MATH-0955 Beginning Algebra or appropriate Math placement score to enroll in MATH-1000 level Mathematics.

**ACCT-1341 Managerial Accounting**

**3 Credits**

Theory and practice of accounting procedures used by management to plan operations, control activities, and make sound business decisions. Create and interpret budgets, standard cost systems, breakeven analysis, activity based costing (ABC) and job costing systems. Discuss other tools necessary to effectively manage companies.

**Lecture:** 3 hours

**Prerequisite(s):** ACCT-1311 Financial Accounting, or departmental approval.
ACCT-1520 QuickBooks Immersion
2 Credits
Fundamentals of accounting procedures as used in a double-entry bookkeeping system. Emphasis is on application of techniques and procedures to record financial information in an accounting system and to customize and generate financial statements for a small business. Introduction to commonly used commercial general ledger software in recording business transactions and preparing business documents and reports.
Lecture: 2 hours
Prerequisite(s): ACCT-1020 Applied Accounting, or ACCT-1311 Financial Accounting, or departmental approval.

ACCT-1550 Excel for Accountants
3 Credits
Application of Spreadsheet Tools to the Accounting Process and Analysis. This course applies spreadsheet technology and data analysis techniques to the accounting curriculum to provide students a course dedicated to learning and utilizing spreadsheet technology and tools to solve typical accounting, finance and business problems.
Lecture: 3 hours
Prerequisite(s): ACCT-1311 Financial Accounting, or ACCT-1020 Applied Accounting.

ACCT-1820 Independent Study/Research in Accounting
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. (See Credit Schedule of classes for current offerings.)
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ACCT-2041 Business Taxation
4 Credits
Concentration on corporate Federal income taxes and taxation of partnership income. Preparation of various tax forms including 1120, 1120S, and 1065 and related schedules. Overview of payroll taxes, sales and use tax, Ohio’s CAT (commercial activity tax) and other taxes related to business.
Lecture: 4 hours
Prerequisite(s): ACCT-1041 Individual Taxation, or departmental approval: equivalent coursework or experience.

ACCT-2050 Volunteer Income Tax Assistance
2 Credits
Train in the basics of individual taxation for federal and Ohio tax compliance as well as in the use of professional level tax preparation software. Students must successfully pass Ethics, Intake & Interview, Basic, and Advanced of the Volunteer Income Tax Assistance (VITA) certification exam provided by the Internal Revenue Service.
Lecture: 2 hours
Prerequisite(s): Recommend completing ACCT-1041 Individual Taxation prior to enrolling in this course.

ACCT-2310 Intermediate Accounting I
4 Credits
Capstone course. Focuses on increasing understanding and application of accounting theory and the underlying financial accounting principles, procedures and reporting requirements used primarily in the for-profit sector. Topics include: financial reporting, accounting cycle, financial statement analyses, business segment and interim reports, income statement, receivables, cash cycle, asset valuation, liabilities, and earnings management.
Lecture: 4 hours
Prerequisite(s): ACCT-1311 Financial Accounting, and MATH-1240 Contemporary Mathematics or higher; or departmental approval: equivalent coursework or experience. Recommend IT-1090 Computer Applications for students who are not already proficient in Microsoft Excel, Word, and PowerPoint.

ACCT-2320 Intermediate Accounting II
4 Credits
Continuation of Intermediate Accounting I. Emphasis on analysis, methods of valuation and statement presentation of current and long-term liabilities, including leases and pensions, corporate equity in both simple and complex structures, including earnings per share computations; income tax accounting; error correction and financial statement analysis.
Lecture: 4 hours
Prerequisite(s): ACCT-2310 Intermediate Accounting I. Recommend IT-1090 Introduction to Computer Applications for students who are not already proficient in Microsoft Excel, Word and PowerPoint.

ACCT-2340 Cost Accounting
4 Credits
Theory and practice of cost accounting as applied to management of manufacturing, retail, and service industries. Emphasis on advanced terminology, job and process costing schedules, budgeting and variances, joint costing, pricing decisions, and capital budgeting. Application of Cost-Volume-Profit (CVP) models, the Equivalent Units (EOQ) model, Just-in-time (JIT) and other analytical tools used by management in the decision-making process.
Lecture: 4 hours
Prerequisite(s): ACCT-1341 Managerial Accounting, or departmental approval: equivalent coursework or experience.

ACCT-2500 Governmental/Non-Profit Accounting
4 Credits
Accounting principles, standards and procedures for government entities and non-profit service entities, including school systems, colleges and universities, hospitals, charitable and religious organizations, and fraternal organizations. Application of current Financial Accounting Standards Board (FASB) and Government Accounting Standards Board (GASB) standards.
Lecture: 4 hours
Prerequisite(s): ACCT-1020 Applied Accounting, or ACCT-1311 Financial Accounting, or departmental approval: equivalent coursework or experience.
ACCT-2510 Auditing
4 Credits
Audit regulatory environment, approach, planning, and procedures; compliance and substantive testing; treatment of audit adjustments, subsequent events, and discovered irregularities; preparing various audit worksheets and final product, the auditor’s report.
Lecture: 4 hours
Prerequisite(s): ACCT-1341 Managerial Accounting and FIN-2100 Financial Management.

ACCT-2812 Special Topics: Introduction to Investments
2 Credits
An introduction to investment vehicles and methods. Investment vehicles introduced will include the time value of money, stocks, bonds, mutual funds, options, exchange traded funds and commodity futures. Current events in these areas will be discussed.
Lecture: 2 hours
Prerequisite(s): None.

ACCT-2820 Independent Advanced Study/Research in Accounting
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. (See Credit Schedule of courses for current offerings.)
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ACCT-2830 Cooperative Field Experience
1-3 Credits
Limited to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour
Prerequisite(s): Formal application into the Cooperative Education Program.

Advanced Law Enforcement (ZLAW)

ZLAW-1156 Crisis Intervention
1.2 CEU's
This course fulfills the 6-hour crisis intervention block of instruction required for peace officer basic training certification update. Human Relations Topic 4 of the Ohio Peace Officer Basic Training Program is presented by an OPOTC-certified instructor.
Contact hours: 12
Not financial aid eligible.

ZLAW-1167 Private Security O.C. Spray Training
0.8 CEU's
This eight-hour basic user training course teaches a security officer how to use OC in a safe and reliable manner. This training provides a valuable tool that uses a "non-injurious" level of force.
Contact hours: 8
Not financial aid eligible.

ZLAW-1175 Advanced Report Writing
2.4 CEU's
This course uses a mix of lectures and hands-on training exercises to address report writing basics as well as more advanced techniques.
Contact hours: 24
Not financial aid eligible.

ZLAW-1179 Community Diversity
0.8 CEU's
This 8-hour course is an abbreviated version of the Peace Officer Basic Training curriculum approved by the Ohio Peace Officer Training Commission. Upon successful completion of this course, the participant will understand diverse cultures within the community they serve.
Contact hours: 8
Not financial aid eligible.

ZLAW-1187 APCO Public Safety Communicator (PST) I
4 CEU's
This 40-hour APCO-certified course covers the basic skills, knowledge and abilities every successful public safety telecommunicator (PST) needs to meet the demands of this critical work. The basic PST training course meets the American National Standards as contained in the ANSI approved Minimum Training Standard for Public Safety Telecommunicators (APCO ANSI 3.103.2:2015). Building on topics such as communication skills, call-taking and radio techniques, this course incorporates the most up-to-date information on technology and work-related issues in public safety communications centers.
Contact hours: 40
Not financial aid eligible.

ZLAW-1188 Introduction to Drone Operations
4 CEU’s
This 1-week drone operator course will introduce first responders to drone technology, including its capabilities and uses in law enforcement and other emergency response situations. The course will provide hands-on experience via simulation. First responders will have an understanding of how and when to utilize drones for emergency and homeland security situations.
Contact hours: 40
Prerequisite(s): Must be law enforcement, fire, or other first responder.
Not financial aid eligible.

ZLAW-1195 Blue Courage
1.6 CEU's
Training that utilizes an all-inclusive approach to target subject matter related to: (1) diversity and inclusion, (2) leadership, (3) resilience, (4) nobility of policing and (5) practical wisdom. Blue Courage is a transformational 2-day leadership development workshop designed for all levels of the organization. This revolutionary, educational process is a holistic approach to developing our people. It will touch hearts, awaken minds, and ignite spirits through dynamic presentations and learning processes. If your interest is self-improvement, increased engagement, stress-management, developing resilience, igniting culture change, and/or combating cynicism, while improving overall health and well-being, then Blue Courage is waiting for you to answer the call.
Contact hours: 16
Not financial aid eligible.
ASL-1010 Beginning American Sign Language I
4 Credits
First in two-course sequence. Introduction to American Sign Language (ASL) and its history with emphasis on basic communication skills, focusing on principles of ASL grammar, body language, and facial expressions. Practice in expressive and receptive skills.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OFL025, and OFL029 (1 of 2 courses, both must be taken).

ASL-1020 Beginning American Sign Language II
4 Credits
Second part of two-course sequence. Focus on enhancement of student interaction, understanding, and production of American Sign Language with daily practice in expression, reception, conversational skills, and verb and adjective inflection. Includes aspects of Deaf Culture and daily living.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ASL-1010 Beginning American Sign Language I, or departmental approval.
OAN Approved: OFL026, and OFL029 (2 of 2 courses, both must be taken).

ASL-1030 Classifiers/Depicting Verbs
2 Credits
Study the role of classifiers, specifically when, why, and how they are to be signed within various types of narratives. Practice identifying classifiers and any accompanying non-manual markers and communicating/voicing what they represent upon seeing a signed narrative. Detecting when and deciding which classifiers and non-manual markers should be expressed when signing various types of narratives.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ASL-1010 Beginning American Sign Language I.

ASL-1100 Deaf Culture
3 Credits
Cultural differences and similarities between the hearing and Deaf communities. History of ASL, deafness and its causes. Deaf education, ADA laws, and special devices utilized by people who are Deaf. Examine selected vocabulary and facial expressions and learn their relevance to Deaf culture. One visit outside classroom may be required.
Lecture: 3 hours
Prerequisite(s): None.

ASL-1820 Independent Study/Research in American Sign Language
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
ASL-182H Honors Independent Study/Research in American Sign Language  
1-3 Credits  
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ASL-2010 Intermediate American Sign Language I  
4 Credits  
First in two-course sequence. Focuses on signs, body language, and facial expressions with emphasis on more complex conversational situations. Practice at intermediate level. Visitation outside the classroom is required.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): ASL-1020 Beginning American Sign Language II, or departmental approval.  
OAN Approved: OFL027 and OLF030 (1 of 2 courses, both must be taken).

ASL-2020 Intermediate American Sign Language II  
4 Credits  
Second in two-course sequence. Integrates facial expressions, body language, and ASL vocabulary at an increasingly complex level. Practice receptive skills in dialogue mode. Keep current in the field of deafness and interpreting by reading articles from various sources. Students participate in activities outside the classroom with persons who are deaf.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): ASL-2010 Intermediate American Sign Language I, or departmental approval.  
OAN Approved: OFL028 and OLF030 (2 of 2 courses, both must be taken).

ASL-2412 Advanced American Sign Language I  
4 Credits  
Study of particular dialogues and drills, both from text and original work. Practice at advanced level, receptively and expressively. Visitation outside the classroom may be required.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): ASL-2020 Intermediate American Sign Language II or appropriate assessment score on ASL placement/skill assessment.

ASL-2420 Advanced American Sign Language II  
4 Credits  
Study of particular dialogues and drills, from text, video and original work, with emphasis on engaging in impromptu conversational and presentational activities. Practice at an increasingly complex advanced level, both receptively and expressively. Community engagement and lab projects may be required outside the classroom.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): ASL-2412 Advanced American Sign Language I.

ASL-2820 Advanced Independent Study/Research in American Sign Language  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ASL-282H Advanced Honors Independent Study/Research in American Sign Language  
1-3 Credits  
Honors-level directed individual advanced study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Anthropology (ANTH)  
ANTH-1010 Cultural Anthropology  
3 Credits  
Introduction to the study of human societies. The purpose of anthropological research is to study and interpret human culture and behavior through scientific and humanistic means. This course explores human societies through the language, social and political systems, marriage, kinship, gender and sexuality, race and ethnicity, religion, and economic systems of humans across the globe.  
Lecture: 3 hours  
Prerequisite(s): None.  
OAN Approved: TMSBS and OSS001.

ANTH-1210 Human Evolution  
4 Credits  
Survey of the human evolutionary past. Biological Anthropology courses that focus upon evolutionary theory and principles, archaeology, living primates, the fossil record, human ancestors, and modern human variation.  
Lecture: 3 hours. Laboratory: 3 hours  
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; or departmental approval.  
OAN Approved: TMNS and OSS002.
ANTH-179H Honors Contract in Anthropology
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

ANTH-1820 Independent Study/Research in Anthropology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ANTH-182H Honors Independent Study/Research in Anthropology
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ANTH-2010 Peoples and Cultures of the World
3 Credits
Cross cultural understanding of universal human concerns and issues affecting particular regions and cultures, using a variety of anthropological perspectives and theories. Emphasis on concerns of non-Western peoples and cultures.
Lecture: 3 hours
Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or departmental approval. OAN Approved: TMSBS.

ANTH-2030 Archaeological Field Methods
4 Credits
Overview of methods used in field archaeology as applied to actual archaeological sites. Students receive training and experience in surveying, mapping, excavation, artifact processing and data analysis. Requires on-site student participation in the field (see Credit Schedule of classes for specific requirements).
Lecture: 1-3 hours. Laboratory: 3 hours
Other Required Hours: 75 hrs of supervised field work.
Prerequisite(s): Departmental approval. approval of instructor.

ANTH-2110 Archaeology
3 Credits
Investigation of the human past using archaeological methods and perspectives. Provides a survey of significant archaeological findings and interpretations from across the globe.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.
OAN Approved: TMSBS and OSS003.

ANTH-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Anthropology complements and exceeds requirements and expected outcomes for an existing Anthropology 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in Anthropology, whose instructor agrees to mentor the student in the Sophomore Honors Contract. Departmental approval required.

ANTH-2820 Independent Advanced Study/Research in Anthropology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ANTH-282H Advanced Honors Independent Study/Research in Anthropology
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
Applied Industrial Technology (AIT)

AIT-1010 Construction Measurements and Calculations
4 Credits
Covers fundamental measuring and calculation skills essential to the skilled craftsperson working in the construction industry. Provides a basic level of knowledge and understanding of practical measurements used to establish building, wall and equipment locations as well as material sizes and quantities. Field application and measurement conversions are stressed. Basic mathematical concepts are explained and applied in job situations.
Lecture: 4 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate Math placement score, and concurrent enrollment in the following courses: AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1020 Comprehension and Communication for Construction
2 Credits
Covers basic skills necessary for reading factual information used in construction with concentration on supporting details, clarifying information, and end results needed for success in the construction industry. 
Lecture: 2 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1030 Basic Construction Language
2 Credits
Study of construction drawings to determine specifications, lines and line weights, measurements related to laying out, dimensioning, estimating and planning.
Lecture: 2 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1040 Spatial and Mechanical Reasoning
1 Credit
Introduces the student to spatial development skills and mechanical reasoning. Included are practical applications of orthographic projections, figure conceptualization and cubic translation. Also covers mechanical analysis of pulley and gear systems and simple machines, including basic properties of physics.
Lecture: 1 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1050 Construction Industry Orientation
3 Credits
An introduction to the construction industry and to respective construction apprenticeship programs and respective entry requirements. Included are soft skills for industry success, introduction to green building techniques and apprenticeship training center visits. Instruction site exploration will be included whenever possible.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate Math placement score, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1060 Construction Tools
2 Credits
Covers the hand tools and materials of the respective building trades. Introduces the student to basic operations of respective crafts using hand tools of the trade. In addition, construction safety will be covered in depth, and a certificate for an Occupational Safety and Health Administration (OSHA-10) card will be granted upon successful completion.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, and AIT-1120 Building Construction Trades Lab.
AIT-1120 Building Construction Laboratory
3 Credits
An introduction to work in building construction trades through discussion and hands-on training, providing an understanding of the history, practices, technologies, and factors of influences upon the industry. Extensive project work will include completion of masonry, carpentry, roofing, interior finishing, residential electrical, plumbing, and construction measurement. Construction site visits may be included.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT 1030-Building Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, and AIT-1060 Construction Tools.

AFT-2990 Contracting in a Diverse World
3 Credits
Capstone course in Applied Industrial Technology. Study of construction contracting principles, procedures and practices including estimating and subcontracting practices. Includes working with diverse workforce groups in union and non-union settings utilizing teamwork.
Lecture: 3 hours
Prerequisite(s): Departmental approval: completion of more than fifty percent of the respective trade apprenticeship.

Applied Industrial Technology (Bricklaying) (ATBL)

ATBL-1300 Basic Bricklaying Trade Skills
2 Credits
Basic study of bricklaying trade skills involving positioning, laying up, mixing and applying mortar and joint formation.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATBL-1310 Bricklaying, Materials, Tools and Equipment
2 Credits
Study of materials, tools and equipment used in brick and block construction.
Lecture: 2 hours
Prerequisite(s): Departmental approval.

ATBL-1320 Basic Construction Drawings
1 Credit
Study of construction drawings to determine specifications, layout of pattern bonds, measurements related to laying out, laying up, dimensioning, estimating and planning.
Lecture: 1 hours
Prerequisite(s): ATBL-1310 Bricklaying Materials, Tools and Equipment or concurrent enrollment, or departmental approval.

ATBL-1330 Wall Construction I
2 Credits
Study of wall construction, grouting, layout, laying up, pattern bond pointing, parging, and caulking. Use of reinforced masonry also studied.
Lecture: 2 hours
Prerequisite(s): ATBL-1300 Basic Bricklaying Trade Skills or concurrent enrollment, or departmental approval.

ATBL-1340 Arch Construction I
2 Credits
Beginning study of construction of arches. Topics include types of arches, parts and dimension of arches, and laying out centers for arches. Focuses on constructing segmental and jack arches.
Lecture: 2 hours
Prerequisite(s): ATBL-1300 Basic Bricklaying Trade Skills or concurrent enrollment, or departmental approval.

ATBL-1350 Introduction to Refractory
2 Credits
Introductory course covering the history of refractory/refinery masonry oven, kiln and furnace construction, and the specialized equipment and materials used. Included are safety regulations and practices to be adhered to as outlined by the Occupational Health and Safety Administration (OSHA).
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Applied Industrial Technology program.

ATBL-1360 Blue Print Reading for Bricklayers I
2 Credits
Interpretation of construction documents used to identify the respective blueprint reading language, types of footings and foundations and the various concrete masonry units (CMU’s) with additional application and identification of masonry information contained within the divisions and subdivisions of job specifications.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Bricklayer’s apprenticeship program.

ATBL-1370 Construction Trades Safety
1 Credit
Study of safe practices on job, basic first aid, and OSHA requirements for construction trades.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATBL-1390 Grouting and Reinforcement
2 Credits
Fundamentals of structural masonry and grouting, including integration of structural masonry, building load path and load transfer. Grout placement requirements including low and high grout lifting procedures, inspection, clean out provisions and keyway function also covered and discussed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Bricklayer’s apprenticeship program.

ATBL-1530 Wall Construction II
2 Credits
Advanced study of wall construction to include cavity, retaining, cantilever, gravity retaining, intersecting, and garden and foundation/basement walls.
Lecture: 2 hours
Prerequisite(s): ATBL-1330 Wall Construction I or concurrent enrollment, or departmental approval.
ATBL-1540 Arch Construction II
2 Credits
Study of basic plans to identify information included in a set of written specifications pertaining to concrete and to estimate amount of materials needed for project.
Lecture: 2 hours
Prerequisite(s): ATBL-1340 Arch Construction I or concurrent enrollment, or departmental approval.

ATBL-1803 Special Topics: Tuck Pointing
1 Credit
Course covers tuckpointing, joint types, mortar selection and mixing, and causes of mortar joint deterioration. Included will be brickwork preparation, joint assessment, application and finishing, and accordance with industry standards and safety precautions.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Bricklayer's apprenticeship program.

ATBL-1950 Construction Trades Field Experience
1-3 Credits
Limited to students in the Apprenticeship Program of the Construction Trades Joint Apprenticeship Training Committees. Employment in an approved training facility. Students may earn up to three credits in one semester and repeat to a cumulative maximum of nine credits.
Other Required Hours: Field Experience: 12-36 hours per week.
Prerequisite(s): Formal acceptance into the Joint Apprenticeship Training Committee Apprenticeship Program; and ATBL-1300 Basic Bricklaying Trade Skills, and ATBL-1310 Bricklaying Materials, Tools and Equipment, and departmental approval.

ATBL-2110 Concrete for Bricklaying
1 Credit
Basic course introducing the bricklayer to the fundamentals of working with concrete. Course includes site preparation, basic forming methods, and properties of concrete and application procedures.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Bricklayer's apprenticeship program.

ATBL-2120 Mortar Types and Identification
2 Credits
A basic course covering mortar properties and uses including: types, strengths and applications. Included are safety concerns and worker safety procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Bricklayer's apprenticeship program.

ATBL-2140 Introduction to Bricklayer Foreman
1 Credit
Introductory course identifying the role and qualifications of the bricklayer foreman position and the related supervisory skills. In addition, the information technology required for success will be identified and reviewed.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Bricklayer's apprenticeship program.

ATBL-2510 Advanced Brick-Block Construction
2 Credits
Advanced study of brick-block construction of corners, piers, pilasters and columns.
Lecture: 2 hours
Prerequisite(s): ATBL-1530 Wall Construction II, and ATBL-1540 Arch Construction II or concurrent enrollment; or departmental approval.

ATBL-2520 Step and Paving Assembly Construction
2 Credits
Advanced study of brick-block construction of corners, piers, pilasters and columns.
Lecture: 2 hours
Prerequisite(s): ATBL-1320 Basic Construction Drawings; or departmental approval.

ATBL-2710 Advanced Bricklaying Skills
3 Credits
Study of advanced bricklaying skills for the construction of flashings, lintels, chases, chimneys, vents and control joints.
Lecture: 3 hours
Prerequisite(s): ATBL-1320 Basic Construction Drawings, and ATBL-2530 Door and Window Construction or concurrent enrollment; or departmental approval.

**Applied Industrial Technology (Carpentry) (ATCT)**

ATCT-1301 Introduction to Carpentry
2 Credits
Introduction to carpentry apprenticeship. Includes in-depth overview of OSHA regulations as related to the construction industry. Covers a history of labor management association as it was in the past and how Joint Apprenticeship Committees interact today. Also includes, safety principles, including first aid and CPR.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1310 Carpentry Safety
2 Credits
Introduction to hazards and dangers of elevated working conditions, including those that involve use of ladders and scaffolds. Hazards of working in confined spaces of limited means of egress with limited natural ventilation that are not meant for continuous occupancy will be examined. Introduction to Material Safety Data Sheets and their use to reduce chemical accidents in the workplace. Use of proper safety procedures and safety equipment as prescribed by OSHA and/or safety enforcement agencies will be emphasized.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.
ATCT-1320 Introduction to Hand and Power Tools  
2 Credits  
Study of wood properties, measurement techniques, types and applications of various common fasteners, properties of different woods, identification and use of hand tools, safety considerations, and use of circular portable saw, belt sander, edge sander, router, jigsaw, finish sander, and drill.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1331 Concrete Footers and Walls  
2 Credits  
Introduction to construction of concrete form work. Includes reading of construction working drawings, layout, fabrication, and erection of standard wall, column, and footing forms.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1340 (ICRA) Best Practices in Health Care Construction  
1 Credit  
This course is designed to promote the awareness of infection control in existing health-care facilities. Infection control techniques used to prevent the spread of infectious agents to other patients, other areas of the facility and to the workers themselves, will be emphasized. An awareness of the types of hazards presented to workers in health-care facilities will be covered as part of the course.  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: Admissions to Carpenter’s apprenticeship program.

ATCT-1351 Metal Studs and Dry Walls  
2 Credits  
Introduction to the Interior Systems industry. Construction practices, materials, and equipment used to lay out, fabricate and install metal stud systems. Related blueprint reading skills, math concepts, soffits, door frames and hardware are also an integral part of this course. An emphasis on safety regulations as according to OSHA standards.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1360 Scaffolding  
2 Credits  
Course covers the various types of scaffolding used in the construction industry including specific applications, assembly and dismantling procedures and identifies and explains the safety rules and regulations for safe assembly and use as prescribed by the Occupational Safety and Health Administration (OSHA).  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Carpenter’s apprenticeship program.

ATCT-1367 Layout  
2 Credits  
Introduction to use of builder’s level, level transit, and digital theodolite in the construction industry for establishment of elevations and grades and building layout. Course includes required math and geometry concepts and interpretation of site drawings and topographical plans generally used in the construction industry.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1371 Wood Framing  
2 Credits  
Introduction to basic principles of framing, including terminology, print information, design, codes and systems.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1491 Residential Steel Framing  
2 Credits  
Introduction to fundamentals of residential framing with steel. Course will include techniques on floor construction, interior/exterior wall construction and roof framing assemblies using steel trusses and/or rafters.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1381 Wood Framing, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-1550 Roof Framing I  
2 Credits  
Introduction to construction of common roof types to include: reading of construction working drawings; application of mathematical concepts and calculations related to roof structure; and layout, fabrication, and erection of roof members.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1610 Interior Finish  
2 Credits  
Introduction to skills required to determine materials and installation of finish elements. Included are window and door trim, interior door installation, standing and running trims.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1381 Wood Framing, or departmental approval.
ATCT-1710 Stairs Layout  
2 Credits  
Introduction to basic principles of stair layout, including stair terminology, print information, design, codes, and types.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1808 Special Topics in Total Station I  
2 Credits  
Covers the use of total station instruments and their application to field layout. The transfer of data from field drawings and CAD programs to the total station and data collectors for field layout tasks will also be covered. In addition, field layout problems will be utilized and different types of total station instruments will be presented.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATCT-2220 Roof Framing II  
2 Credits  
Introduction to construction of hip roofs and intersecting roofs to include: reading of construction working drawings; applying terminology and math concepts related to hip roof type construction; and layout, fabrication, and erection of hip roof members.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1550 Roof Framing I or departmental approval.

ATCT-2330 Trade Show  
2 Credits  
Installation and dismantling of trade show exhibits. Includes techniques and procedures, aerial lift, welded frame/mobile tower scaffold erector, and rigging.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2341 Concrete Specialties  
2 Credits  
Heavy construction methods for forming piers, columns and decks are an integral part of this course. The techniques to form elevated decks, ramps and stairways will be emphasized. This course will focus on forming procedures as well as related mathematical concepts.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and ATCT-2361 Suspended Ceilings, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2361 Suspended Ceilings  
2 Credits  
Skills and techniques required to install a variety of suspended ceiling systems. Includes identification and correct use of tools, reading blueprints, and focus on suspended grid systems.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls or departmental approval.

ATCT-2370 Interior Systems Layout  
2 Credits  
Includes elementary concepts of the interior systems industry construction methods used to layout and fabricate standard metal stud partition walls and soffit systems. Includes related blueprint reading skills, angle and octagon wall layout, applicable math concepts, and safety regulations as prescribed by Occupational Safety and Health Administration (OSHA) standards.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls, and ATCT-2361 Suspended Ceilings, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2380 Advanced Stairs  
2 Credits  
This is an advanced stair building course covering the calculation of stair design numbers needed to construct a set of curved stairs. Applied math with specific emphasis on the geometry of circles will be covered. In addition techniques necessary to layout, cut and fabricate curved stairs will be covered and applied in shop exercises.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1710 Stairs Layout and departmental approval: admission to an Applied Industrial Technology Program.

ATCT-2390 Trussed Roofs  
2 Credits  
Covers the framing of common roof types using manufactured trusses. Includes reading of truss design and placement drawings, truss design, and layout. Also included will be the erection, bracing and sheathing of trussed roofs and the construction of blind valleys according to installation standards. Fall protection and crane safety will also be an integral part of this course.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1550 Roof Framing I and departmental approval: enrollment in Carpenter's apprenticeship program.

ATCT-2500 Exterior Finish  
2 Credits  
Introduction to basic elements of exterior finish which includes roofing, door and window framing, wall finish. Product types, weather and heat considerations are examined.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1610 Interior Finish or concurrent enrollment, or departmental approval.

ATCT-2511 Concrete Columns and Decks  
2 Credits  
Interpretation of plans and specifications to lay out concrete foundations and construct columns, beams and decks for large commercial buildings.  
Lecture: 2 hours  
Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and ATCT-2341 Concrete Specialties, and ATCT-1370 Layout; or departmental approval.

ATCT-2520 Stairs Installation  
2 Credits  
Introduction to the art and science of laying out, fabricating, and installing fine staircases which are mitered and have hard balustrades using newel posts, rails, and balusters.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.
ATCT-2540 Roof Framing III
2 Credits
Introduction to layout procedures and mathematical derivation of rafter
lengths found in roofs, having more than one slope and containing
various offsets. Includes roofs containing all or part of hexagonal shapes
or octagonal shapes. Cutting and fabrication of all rafters is an integral
part of course.
Lecture: 2 hours
Prerequisite(s): ATCT-1550 Roof Framing I and ATCT-2220 Roof Framing II and
departmental approval.

ATCT-2560 Interior Systems III
2 Credits
In depth study of interior systems including barrel and dome ceilings
and commercial door hardware used in the construction industry. Topics
include use of specific tools and machining techniques required to
install doors and door hardware, frames, exit devices, and associated
items. Applicable math concepts, door and hardware schedules; and
safety practices as prescribed by OSHA also included. Extensive guided
instruction and practice provided.
Lecture: 2 hours
Prerequisite(s): ATCT-2361 Suspended Ceilings or departmental approval.

Applied Industrial Technology
(Cement Masonry) (ATCM)

ATCM-1300 Fundamentals of Concrete Construction
2 Credits
Study of concrete: ingredients, steps in production, factors of concrete
mix design, uses for various types of concrete, admixtures and tests for
various types of fresh concrete.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1310 Applied Technical Communications and Economics
2 Credits
Principles of effective industrial reports and letters; obtaining data;
analysis of data; outlining and organizing of materials; letter writing
techniques. Effective communication in writing, listening and speaking to
meet industrial needs emphasized.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1320 Basic Plan Reading
2 Credits
Study of basic plans to identify information included in a set of written
specifications pertaining to concrete and to estimate amount of materials
needed for project.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1330 Concrete Construction Equipment
2 Credits
Study of tools used in concrete construction for testing, forming, placing
and finishing fresh concrete with emphasis on care and safe use of
equipment.
Lecture: 2 hours
Prerequisite(s): Departmental approval.

ATCM-1340 OSHA Standards for Construction
3 Credits
Study of occupational safety and health standards for construction
industry.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1370 Construction Trades Safety
1 Credit
Study of safe practices on job, basic first aid, and OSHA requirements for
construction trades.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1390 Basic Welding Skills
2 Credits
Basic welding skills emphasized to obtain a thorough knowledge of
welding safety related to electrical shock, body protection, accident
prevention, reporting, and ventilation. Fundamentals of arc and oxy-
acetylene welding studied.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial
Technology program.

ATCM-1400 Concrete/Cement Forming and Finishing
3 Credits
Study of various types of forms, placement of forms, placing leveling and
finishing of concrete.
Lecture: 3 hours
Prerequisite(s): ATCM-1300 Fundamentals of Concrete Construction or
concurrent enrollment, or departmental approval.

ATCM-1410 Commercial/Residential Form and Finish
4 Credits
Study of building of steps, sidewalks, patios and driveways. Discussion
includes types, finishes, and nosing.
Lecture: 4 hours
Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or
concurrent enrollment, or departmental approval.

ATCM-1806 Special Topics in Cement Mason Concrete Polishing
2 Credits
Course covers polished concrete applications including benefits and
installation processes. In addition, tools, equipment and techniques used
will be covered and practiced in a shop setting.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Cement Masons'
apprenticeship program.

ATCM-2320 BluePrint Fundamentals - Construction
2 Credits
Study of basic plans to identify information included in a set of written
specifications pertaining to concrete and estimating amount of materials
needed for the project.
Lecture: 2 hours
Prerequisite(s): ATCM-1320 Basic Plan Reading or concurrent enrollment, or
departmental approval.
ATCM-2500 Fundamentals of Concrete Curing
1 Credit
Study of fundamentals associated with concrete curing, reason for curing and types of curing.
Lecture: 1 hours
Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2510 Fundamentals of Concrete Joints
1 Credit
Study of joints in concrete to include types, locations, sealants, maintenance and reason for joints.
Lecture: 1 hours
Prerequisite(s): ATCM-1410 Commercial/Residential Form and Finish Work or concurrent enrollment, or departmental approval.

ATCM-2520 Basic Cement Patching
2 Credits
Study of essentials to properly rub and sack walls for patching and steps necessary to take when preparing the walls.
Lecture: 2 hours
Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2530 Concrete Restoration
3 Credits
Study of surface defects in concrete and how to recognize, recommend preventative treatment, techniques and remedies to restore surface.
Lecture: 3 hours
Prerequisite(s): ATCM-2520 Basic Cement Patching or concurrent enrollment, or departmental approval.

ATCM-2700 Advanced Concrete Finishing
3 Credits
Advanced study of placing and finishing a slab; placing and finishing concrete floors with various types of finishes.
Lecture: 3 hours
Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2710 Concrete Specialty Products
1 Credit
Study of pavements: types of equipment used on pavement, procedures necessary to finish pavements and operation of paving machine.
Lecture: 1 hours
Prerequisite(s): ATCM-2530 Concrete Restoration or concurrent enrollment, or departmental approval.

Applied Industrial Technology
(Communication Transport Systems)
(ATCW)

ATCW-1010 Worker Safety for Communication Transport
2 Credits
Covers specific safety concerns for the communication transport worker including job conditions and pole climbing hazards. Includes an introduction to the Occupational Safety and Health Act (OSHA) for 10 hour certification. Topics include employee responsibilities and rights, standards, and basic hazard training.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1020 Communications Worker History
2 Credits
Covers the history of communications in America, union organizing efforts and union evolution. Includes the divestiture and deregulation of the communication industry and the effects on telephone workers and companies.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1040 Basic Information Systems
2 Credits
Certification course covering skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of cable systems in conjunction with industry standards will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1060 Fire Stop and Overhead Safety
1 Credit
Covers the purpose and systems of fire stopping of communication transport systems including types, governing codes and standards and oversight agencies for installation and testing qualifications. Includes the safety standards including hazard recognition and operator responsibilities with respect to aerial platforms.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1210 Introduction to Information Transport - Copper
2 Credits
Advanced certification course covering in depth skills, transmission mediums and applied administration tasks required for industry proficiency. In addition, installation of copper cable systems in conjunction with industry standards will be covered. Training to lead installers to be self sufficient and able to start, run and complete small copper projects.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.
ATCW-1230 Standards and Measurements
2 Credits
Basic course covering electrical codes and industrial standards and manufacturing warranties for the communications transport industry. In addition, industry practices for jurisdictional compliance are included.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1250 Infrastructure Layout
2 Credits
Course covers the application of math concepts to the communications industry, the interpretation of construction working drawings for worksite requirements and the importance of site surveys. In addition, proposed and actual timelines are discussed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1270 Grounding and Bonding
1 Credit
Basic course covering grounding and bonding of active and inactive electronic components required for worker and equipment protection. In addition, overseeing bodies that oversee the communications industry will be identified and application procedures are covered.
Lecture: 1 hour
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2010 Information Transport - Fiber
2 Credits
Advanced certification course covering Fiber Optics skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of Fiber Optic cable systems in conjunction with industry standards will be covered. Course to enable learners to be self sufficient and able to start, run, and complete fiber optic projects.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2030 Data Theory
1 Credit
Advanced course covering the topology and transmitting information related to signal transmission and transport. In addition, purpose and function of information systems will be discussed.
Lecture: 1 hour
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2050 Audio Visual
1 Credit
Course covers the types, purpose and functions of audio visual communication systems and discusses transmission fundamentals, including required skills and site preparations. In addition, legal consequences and ramifications with respect to security issues is discussed.
Lecture: 1 hour
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2070 Information Transport Circuits
1 Credit
Advanced course covering the functions and limitations of transmission signals and the provider equipment and hardware used for information transport. In addition, troubleshooting procedures, tools, and equipment will be discussed.
Lecture: 1 hour
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2120 Advanced Systems Transport
2 Credits
Certification course covering skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of cable systems in conjunction with industry standards will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

Applied Industrial Technology (Construction Tending and Hazardous Material Abatement) (ATLB)

ATLB-1010 Craft Orientation for Laborers
1 Credit
Course designed for Laborer apprentices in their first year. History of the labor movement in North America and the Laborer’s International Union of North America (LIUNA). Fringe benefits, the apprenticeship program, union organization, work site management structure and work ethics. Basic construction math, measuring, terminology and tool identification are included.
Lecture: 1 hour
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1020 Measurements and Leveling
2 Credits
Construction measuring using rulers and tapes. Introduction to leveling and layout instruments. Elevation transfer and standard building layout procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1030 Measurements and Leveling
2 Credits
Construction measuring using rulers and tapes. Introduction to leveling and layout instruments. Elevation transfer and standard building layout procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1050 Laborers: Introduction to Transits
2 Credits
A study of construction site layout for building positioning using digital instruments. Emphasis is placed on instrument applications and field data recording.
Lecture: 2 hours
Prerequisite(s): Departmental approval by Program Training Director.
ATLB-1040 Pipelaying
2 Credits
Calculation and application of grades, distances and elevations of storm water and sanitary sewer piping. Procedures for preparing the site for the pipe and its installation. Safety regulations and practices.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1050 Aerial Lift and Forklift Refresher
1 Credit
Basic overview of the safety standards for the operation and work functions of aerial platform lifts and forklifts as prescribed by the Occupational Safety and Health Administration (OSHA).
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.

ATLB-1060 Field Rigging Practices
1 Credit
Certification course covering the Occupational Safety and Health Administration (OSHA) rigging standards in Subpart H and CC. Included are hoisting, rigging and crane safety, rigging hardware and slings, and signaling procedures. Also included is terminology, types of tackle and inspection practices.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.

ATLB-1070 Grade Laser
2 Credits
Advanced course covering the construction grade laser, its components and application. Also included are the safety requirements as prescribed by the Occupational Safety and Health Administration (OSHA), interpretation of engineering drawings and applied math.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.

ATLB-1080 Building Drawings for Laborers
2 Credits
Introductory course that identifies application of construction building drawings used by the Construction Laborer to the construction site. Also included is a discussion of the development of building drawings, how to interpret them and how mechanical, electrical and plumbing drawings (MEP) relate to architectural plans.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.

ATLB-1210 Concrete Placement
2 Credits
History of concrete, its properties and calculation of material quantities. Site preparation, form layout and installation. Placement and consolidation of concrete, and finishing and curing procedures will be discussed, demonstrated and practiced in field application.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1220 Traffic Control
2 Credits
Covers the procedure for establishing traffic control including flagging operations for asphalt placement, barrier and control sign stationing, and placement of asphalt on roadways. Presentations covering estimating asphalt quantities. Care and use of hand tools for installation procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1230 Radiation Worker
1 Credit
Fundamentals of radiation, how it affects the worker and the importance of recognizing the health hazards associated with it. Methods used to clean contaminated sites and measures that are taken to avoid radiation on jobsites, including energy producing facilities and nuclear plants. Operation, maintenance and repair of respective equipment.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1340 Mason Tending
3 Credits
Study of scaffolds related to masonry work, mortar components, and materials requirements. Includes concrete properties and ingredients, steps in making concrete, properties of cement, erection and stocking of scaffolds, mortar preparation, and tools required. Extensive guided instruction and practice provided.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1350 Storm, Sanitary and Water Drawings
2 Credits
Advanced course covering the interpretation of construction drawings used for the installation of storm water and sanitary sewer systems and water lines. Also included are safety considerations as prescribed by the Occupational Safety and Health Administration (OSHA), and a review of basic math concepts needed for establishing proper grade and slope and estimating pipe and bedding requirements.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.

ATLB-1360 Laborer Safety OSHA 30
2 Credits
Certification course covering safety and health standards as prescribed by the Occupational Safety and Health Administration (OSHA) for Laborers in the construction industry. Included are specific subject focus with respect to working with concrete handling and work in confined spaces.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer's apprenticeship program.
ATLB-1370 Laborers Safety Training Transport
1 Credit
Certification course covering the Occupational Safety and Health Administration (OSHA) standard with respect to the General Duty Clause, worker safety on construction sites and the responsibilities of the employer and employee. In addition, the safety program as prescribed by OSHA is compared to the National Institute of Safety and Health (NIOSH) and the major causes of jobsite accidents are discussed.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-1380 Laborers: Confined Space
1 Credit
Certificate course covering the Occupational Safety and Health Administration (OSHA) standards with respect to working in confined spaces. Included are workplace hazards and health concerns and respiratory protection. In addition, working procedures and permit writing requirements will be addressed.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to the Laborer’s apprenticeship program.

ATLB-1390 Mason Tending Forklift
2 Credits
Course covers the safe operation of the rough terrain forklift and addresses site effects of machine operation. In addition, related load capacities, including boom angles, swing loads and machine maintenance affect operation and machine life.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Laborers apprenticeship program.

ATLB-1410 Pipe Lasers
1 Credit
Introductory course describing the pipe laser, its components and setup procedures. Included is an overview of the safety standards as prescribed by the Occupational Safety and Health Administration for worker safety and equipment applications for storm water and sanitary sewer installations.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-1420 Scaffold Builder
2 Credits
Course covers the assembly and dismantling of three scaffold types, tube and coupler, fabricated frame and systems. Included are the general requirements for all scaffold assembly and dismantling as prescribed by the Occupational Safety and Health Administration (OSHA).
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-1430 Scaffold User and Skid Steer Safety
1 Credit
Certification course covering hazard recognition including electrical and fall hazards related to working on scaffolds and skid steers. Included are practical applications related to safe operation of the equipment and worker safety on scaffolds.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Laborer’s Apprenticeship program.

ATLB-1600 Asbestos Abatement
2 Credits
Study of concepts related to EPA, OSHA, and ODH requirements for asbestos abatement. Includes types of asbestos, diseases linked to asbestos exposure, sampling techniques, stages of development, and safe work practices.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1807 Special Topics: Cutting and Burning
2 Credits
Course covers the purpose of a fire watch assignment during hot work operations including prescribed safety standards and fire suppression equipment and hazards of torch cutting with respect to fire and chemical dangers. In addition, specialty cutting equipment, petrogen: oxygen/gas and plasma arc cutting equipment will be discussed, demonstrated and applied in shop exercises.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborers’ apprenticeship program.

ATLB-1808 Special Topics in Asphalt and Traffic Control
2 Credits
Introductory course that identifies application of construction building drawings used by the Construction laborer to the construction site. Also included is a discussion of the development of building drawings, how to interpret them, and how mechanical, electrical and plumbing drawings (MEP) relate to architectural plans.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to an approved apprenticeship program.

ATLB-1812 Special Topics in Grade Lasers
2 Credits
Advanced course covering the construction grade laser, its components and application. Also included are the safety requirements as prescribed by the Occupational Safety and Health Administration (OSHA), interpretation of engineering drawings and applied math.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2110 Small Engines & Concrete Saws
2 Credits
Start-up procedures and safety requirements of small engine machines and gas powered saws. Trenching equipment, chain saw safety and 2-cycle and 4-cycle engines will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.
ATLB-2120 Pneumatic Tools  
2 Credits  
The care and use of pneumatic tools including compressors and pavement breaking equipment, carpenter tending duties, and hydraulic splitters. The safe operation of a sandblaster. A review of OSHA Subpart I, pneumatic tools and personal protective equipment (PPE) is given.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2130 Pressure Pipe  
2 Credits  
Types of pressure pipe waterline, including asbestos and ductile iron pipe, and installation techniques required to meet industry standards. Bedding requirements, trenching safety standards, and tapping procedures. Applied math concepts required for pressure and volume loss tests are also covered.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2140 DOE Rigging Practices  
2 Credits  
Qualification course covering Department of Energy (DOE) regulations, the Occupational Safety and Health Administration (OSHA) rigging standards in Subpart H and CC and rigging inspection practices. A review of basic math concepts used for calculating areas, volumes, load weights and sling tension for safe hoisting of various load configurations is included.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2150 Gunite  
2 Credits  
Properties of gunite, its mixture and use and applications in the construction industry. Discussion and application of equipment operation and maintenance, including various nozzles for special conditions.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2160 Tunnel Construction  
4 Credits  
History and terminology of tunneling in the construction industry. The need for tunnels and methods of boring is addressed. Skill development using specialty tools and equipment including jack-leg drills and hand tools for tunneling is included. Installation procedures, alignment and bolting of steel liner plates are demonstrated and practiced.  
Lecture: 4 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2170 Gas Pipeline Worker II  
4 Credits  
Advanced course covering general skills required for gas pipe line installations including site clearing, split fence installation and tensioning. Also discussed and explained are specialty operations, including waterway installations, pipe preparation and placement and safe tool and equipment use.  
Lecture: 4 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2180 GPS  
2 Credits  
Advanced course covering the basic operation of the GPS and its application to the construction industry. Included are field exercises and application of related math concepts used to locate property boundaries and longitudinal and latitudinal coordinates.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2190 Hazwoper  
2 Credits  
Certification course covering health and safety hazards related to the abatement of hazardous materials on worksites. In addition, remediation and removal procedures will be covered and the safety standards protecting the public safety and abatement worker will be covered.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2200 Surveying Techniques and Application  
3 Credits  
Study of modern surveying techniques, applications, and methodology. Includes equipment, data collection methods, field records, plane transformations, software, and routine procedures.  
Lecture: 3 hours  
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2210 Scaffold Builder/Dismantle  
2 Credits  
Course covers the assembly and dismantling of three scaffold types, tube and coupler, fabricated frame and systems. Included are the general requirements for all scaffold assembly and dismantling as prescribed by the Occupational Safety and Health Administration (OSHA).  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Materials Abatement apprenticeship program.

ATLB-2310 Advanced Instruments  
2 Credits  
Instrumentation used for highway and building construction and layout. Includes calculations required for determining local coordinates, staking and road alignments, and the pinning of a building with offsets and open and closed transverses. Also included are procedures and techniques required for setting up and using total station equipment. Field applications and exercises.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.
ATLB-2320 Gas Pipe Line Worker  
2 Credits  
Introductory course covering the general skills, safety and mainline operations required to work on gas pipe line installations. Also includes proper selection of valves for each situation.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.

ATLB-2330 Highway Drawings  
2 Credits  
Advanced study of construction drawings covering the interpretation of plans, profiles and related sheets used in roadway construction. Included are standard, detail and typical sheets used to establish elevations, curves, storm water drainage and utility locations.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to the Laborer’s apprenticeship program.

ATLB-2400 Pipelaying Techniques  
2 Credits  
Study of standard pipelaying techniques, practices, and procedures. Includes trenching, excavation safety, line and grade determination, and gravity flow systems.  
Lecture: 2 hours  
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2600 Scaffolds/High Elevation Techniques  
3 Credits  
In-depth study of scaffolding and high elevation procedures. Set up and erection procedures, scaffold types, scaffold parts, and safety requirements.  
Lecture: 3 hours  
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2650 Demolition Techniques  
3 Credits  
Study of industry standard demolition techniques. Topics include use of cutting tools, use of cutting torches, and safe removal of materials and clean-up procedures.  
Lecture: 3 hours  
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2660 Grade Checking  
4 Credits  
The layout and interpretation of surveyor stakes for highway construction. Included is the application of math concepts required for determining slope and elevation of roadways at sub-grade and top pavement, centerlines, and shoulders. The set up and operation of curbing machines and grade lasers is covered.  
Lecture: 4 hours  
Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2680 Gas Distribution Worker  
7 Credits  
Coverage of gas pipeline installations for commercial and residential applications including proper pipe handling, fusion and placement, and site preparation and restoration. Additionally, all safety regulations as prescribed by OSHA (Occupational Safety and Health Administration), MUTCD (Manual On Uniform Traffic Control Devices) and ODOT (Ohio Department of Transportation), for general public, environmental and worker safety will be addressed with demonstration of these procedures and student applications.  
Lecture: 7 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2740 Lead Abatement  
3 Credits  
Concepts related to OSHA lead abatement regulations. Includes areas of lead abatement, responsibility of lead abatement workers, effects of lead in the body, personal protective equipment, collection methods, and labeling systems. Extensive guided instruction and practice provided.  
Lecture: 3 hours  
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework, or departmental approval.

ATLB-2801 Special Topics in Plastic Pipe Fusion  
2 Credits  
Advanced US Department of Transportation (USDOT) qualification course covering polyethylene pipe, types, uses and installation techniques. Included are various pipe connections using heat and electro fusion.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2806 Special Topics in Storm, Sanitary, and Water Drawings  
2 Credits  
Advanced course covering the interpretation of construction drawings used for the installation of storm water and sanitary sewer systems and water lines. Also included are safety considerations as prescribed by the Occupational Safety and Health Administration and a review of basic math concepts needed for establishing proper grade and slope and estimating pipe and bedding requirements.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2808 Special Topics: ICRA For Laborers  
2 Credits  
Certification course explaining infection control risk management ICRA that identifies worker hazards, controls and disease transmission, patient risk groups and related hazards resulting from construction and renovation in hospitals and health care facilities. In addition, the fabrication of containment barriers and installation and monitoring of negative air equipment is covered.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Materials Abatement apprenticeship program.
ATLB-2809 Special Topics: Plastic Pipe Fusion II
2 Credits
Advanced US Department of Transportation (USDOT) qualification course covering polyethylene pipe, types, uses and installation techniques. Included are various pipe connections using heat and electro fusion.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Materials Abatement apprenticeship program.

ATLB-2811 Special Topics: Mason Tending and Scaffolds
2 Credits
Study of work scope related to mason tending including bonding materials and properties and environmental effects related to masonry construction. There will be a focus on applied practices of selecting and mixing of mortar and material estimating and placement on worksites. In addition, scaffold erection and worker safety per the Occupational Safety and Health Administration (OSHA) Subpart L is covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Laborer’s apprenticeship program.

ATLB-2817 Special Topics: Laborers: Foreman Training
5 Credits
Advanced course covering the aspects of good leadership as foreman/general foreman including the chain of command, worker and jobsite safety and field documentation. Also included is the compilation of working schedules and conversation management.
Lecture: 5 hours
Prerequisite(s): Departmental approval and a member of the LIUNA Laborers International Union of North America

Applied Industrial Technology (Drywall Finishing) (ATDW)

ATDW-1310 Tools and Methods of Drywall Finishing
2 Credits
Introduction to basic tools and procedures of drywall finishing trade including identification, components, and use of hand and power tools, and cleaning, drying, and storage of tools.
Lecture: 2 hours
Prerequisite(s): Admission to any Applied Industrial Technology program, or departmental approval.

ATDW-1330 Materials and Methods of Drywall Finishing
2 Credits
Introduction to basic materials and procedures of drywall finishing trade including identification of boards, fasteners, adhesives, beads, and trim; measuring and cutting beads and trim; application of beads to various surfaces and structures.
Lecture: 2 hours
Prerequisite(s): Admission to any Applied Industrial Technology program, or departmental approval.

ATDW-1620 Taping Tools & Procedures
2 Credits
Instruction in tools and procedures in drywall taping and wiping including tools and materials, dry taping, wet taping, hopper and banjo taping methods, and wiping procedures.
Lecture: 2 hours
Prerequisite(s): Admission to any Applied Industrial Technology Program, or departmental approval.

ATDW-2310 Automatic Taping Tools
2 Credits
Instruction in principles and procedures of automatic tool taping including tools and equipment, the Bazooka automatic taping tool, loading, holding positions, and procedures for automatic tool taping individually and in teams.
Lecture: 2 hours
Prerequisite(s): ATDW-1620 Taping Tools and Procedures, or departmental approval.

ATDW-2330 Finishing Boxes
2 Credits
Instruction in use of finishing boxes including preparing, repairing, and loading flat finishing boxes; procedures for filling flats, butt joints and ceiling joints; procedures for using fastener spotters and angle finishing boxes; and cleanup procedures.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing or concurrent enrollment, or departmental approval.

ATDW-2340 Texturing
2 Credits
Instruction in texturing, including types of textures, surface preparation, texturing machines and application, spraying techniques, using color, texturing large areas, repairing damaged areas, and hand texturing.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing, or departmental approval.

ATDW-2350 Filling Compounds/Procedures
2 Credits
Instruction in basic elements and procedures for using filling compounds including terminology, selection of filler, elements of drying, application of filler with trowel and broad knife, and finish sanding.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing or concurrent enrollment, or departmental approval.

Applied Industrial Technology (Floorlaying) (ATFL)

ATFL-1300 Residential Installation
2 Credits
Introduction to residential flooring products and installation procedures. Includes residential carpet and vinyl product knowledge, and custom installation (borders, insets, patterns, and upholstered stairs). Also includes customer relations, etiquette, and communication skills related to residential work.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing or concurrent enrollment, or departmental approval.
ATFL-1450 Floorlaying Concepts
2 Credits
Comprehensive study of floorlaying essentials, including material properties, measurement techniques, types and applications of various sheet good adhesives, identification and use of hand tools and power equipment used in the floorlaying industry. Also included are concepts commonly found in construction blueprints including symbols, abbreviations, and conventions required in drawing interpretation. Floor preparation for installations of tile, sheet goods, carpeting, hardwood, laminates and ceramics also included. 
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Applied Industrial Technology Floorlaying program.

ATFL-1600 Modular Tile
2 Credits
Basics of modular tile installation. Includes math and geometry concepts required for estimating materials, room layouts and interpreting construction drawings. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts, or departmental approval: admission to Applied Industrial Technology Floorlaying program.

ATFL-1610 Jute & Action Back Carpeting
2 Credits
Carpeting and manufacturing process as related to jute and action-back product types. Topics include material, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.

ATFL-1620 Ceramics I
2 Credits
Wall and floor treatment, grouting and installation of ceramic tile. Includes related math and blueprint reading exercises. 
Lecture: 2 hours
Prerequisite(s): ATFL-1610 Jute and Action Back Carpeting or concurrent enrollment, or departmental approval.

ATFL-1630 Wood Flooring I
2 Credits
Wall and floor treatment, grouting and installation of ceramic tile. Includes related math and blueprint reading exercises. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1640 Sheet Goods Concepts
2 Credits
Floor installation requiring special treatment of adhesives and seam, sheet good products requiring interflex systems, heat seam welding and/or chemical welding. Also presented will be product usage and handling and application of concepts and materials. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1650 Sheet Goods - Flash Coving
2 Credits
Products and components used in flash cove and sanitary floor installation. Topics include techniques of installation, blueprint reading and use of applicable tools. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, and ATFL-1640 Sheet Goods Concepts or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1710 Velcro and Modular Carpeting
2 Credits
Carpeting and manufacturing process as related to Velcro and modular product types. Includes materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1720 Sheet Goods - Geometric Layout and Inlay
2 Credits
Study of advanced floorlaying techniques used in layout and installation of sheet goods in specialty situations including geometric shapes and producing templates. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, and ATFL-1640 Sheet Goods Concepts or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1730 Unitary Back and Enhancer Back Carpeting
2 Credits
Carpeting and manufacturing processes as related to Unitary Back and Enhancer Back product types. Topics include materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or ATFL-1710 Velcro and Modular Carpeting or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-2300 Ceramics II
2 Credits
Ceramics design, material and tile installation in wet areas such as food prep, pools, shower and laundry. 
Lecture: 2 hours
Prerequisite(s): ATFL-1620 Ceramics I or concurrent enrollment, or departmental approval.

ATFL-2320 Wood Flooring II
2 Credits
Advanced flooring systems using acrylic, engineered, and laminate systems with special attention given to custom layouts such as herringbone and diagonal installations, riser, tread, bullnose installation, and proper floor sanding techniques. 
Lecture: 2 hours
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.
ATFL-2400 Sheet Goods-Specialty Products
2 Credits
Study of specialty flooring systems, requiring antibacterial protection and wet areas needing moisture close tolerance installation. Course also includes presentations, one-piece flash coving demonstrations, heat welded seams demonstrations, and cutting and fitting special components such as cove steps and cap metals.
Lecture: 2 hours  
Prerequisite(s): ATFL-1640 Sheet Goods Concepts, or concurrent enrollment, and ATFL-1650 Sheet Goods - Flash Coving, or concurrent enrollment and departmental approval.

ATFL-2430 Woven and Axminster Carpeting
2 Credits
Carpeting and manufacturing process as related to woven and axminster product types. Includes materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings.
Lecture: 2 hours  
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.

Applyied Industrial Technology (Glazing) (ATGL)

ATGL-1330 Hand Tools for Glaziers
2 Credits
Introduction to hand tools for glazing, including basic hand tools such as screwdrivers, wrenches, pliers; levels and transits; glass, plastic, and metal cutters; pliers, lifters, and tongs, punches, chisels, rivet guns, and taps.
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1620 Glass and Mirror Replacement and Installation
2 Credits
Instruction in glass replacement and mirror layout, measurement cutting, edging and mounting. Includes safety procedures, and glass installation using putty.
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1630 Basic Welding
2 Credits
Introduction to arc welding and oxy-acetylene cutting including shop safety, electrode identification and classification and selection, all position welding, set up of fillet, power sources, weld size, and weld symbols.
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1640 Door Fabrication and Installation
2 Credits
Door fabrication and installation, including installation and maintenance of manual and power assisted revolving doors; fabrication and installation of aluminum doors; installation of specialty doors and showcases; and safety procedures and regulations.
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1801 Special Topics in Rigging for Glaziers
1 Credit
Basic course covering proper crane set-up including safety concerns, below the hook devices and signaling procedures. In addition, field lifting techniques will be applied.
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Glazer's apprenticeship program.

ATGL-1802 Special Topics in Drill Bits, Taps, and Fasteners
1 Credit
Course covers the assembly and placement of components used for assembly of wall windows and storefronts in the glazing industry. Included will be description of the various drill bits used and taps required for creating correct screw thread of the connectors and miscellaneous fasteners required for assembly, placement and securing of the different components. Proper use of hand and power tools, boring and tapping techniques and layout procedures will be demonstrated and applied.
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATGL-1803 Special Topics: Introduction to Arch and Shop Drawings
1 Credit
Introductory course covering technical and practical fundamentals of blueprints. This course provides students with knowledge of blueprint reading and blueprint history as they relate to the glazing industry. Classroom activities include interpreting standard shop and construction drawings to establish storefront dimensions, frame types, fastener requirements and respective specifications covering doors and related hardware.
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATGL-1807 Special Topics in Storefronts
2 Credits
Introductory course covering storefront fabrication and installation. Included are materials commonly used for storefronts including architectural metals and extrusions, sealants, shims and backer rod. Component and frame transport and staging are also included.
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Glazer apprenticeship program.

ATGL-2330 Transits, Leveling Instruments, and Lasers
2 Credits
Use of transits, levels, and lasers for glazing installation including elements of instruments; types of instruments; care and handling; setting up, leveling, and using instruments; and specific applications of leveling and installation.
Lecture: 2 hours  
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.
ATGL-2340 Advanced Welding
2 Credits
Lecture: 2 hours
Prerequisite(s): ATGL-1630 Basic Welding or concurrent enrollment; or departmental approval.

ATGL-2350 Curtainwall Fabric & Install
2 Credits
Instruction in curtainwall principles and methods, including methods and standards; layout practices and tolerances; curtainwall systems and erection procedures for I-Beam, Stickwall, and Trusswall construction.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

ATGL-2370 Sealants
2 Credits
Instruction in use of sealants including terminology, properties, forms, classifications, and sealant selection; sealant application, testing, and remedial caulking; joint types and design; substrate preparation primers and backer rods; safety procedures and use of MSDS sheets.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

ATGL-2400 Advanced Rigging & Hoisting
2 Credits
Advanced procedures of rigging and hoisting, including rope materials, care, and handling, knot tying, slings, rigging hardware and hoisting techniques; hand signals; and safety procedures.
Lecture: 2 hours
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

Applied Industrial Technology (Ironworking) (ATIW)

ATIW-1300 Structural Steel Concepts
2 Credits
Introduction to structural steel concepts, including an overview of historical use of iron and steel in construction. Fundamental principles of and preparation for erection of structural steel; blueprint reading; and proper use of tools, according to OSHA regulations.
Lecture: 2 hours
Prerequisite(s): Admission to Ironworking apprenticeship program, or departmental approval.

ATIW-1310 Safety for Ironworkers
1 Credit
Occupational safety and health standards for construction industry in general, and ironworking trade specifically. Includes regulations and procedures for fall protection; electrical work; scaffolding; confined spaces; personal protective equipment; materials handling, storage, use and disposal; hand and power tools; steel erection; and cranes, derricks, hoists, elevators, and conveyors.
Lecture: 1 hours
Prerequisite(s): Admission to Ironworking apprenticeship program, or departmental approval.

ATIW-1320 Steel Construction Procedures
1 Credit
Occupational safety and health standards for construction industry in general, and ironworking trade specifically. Includes regulations and procedures for fall protection; electrical work; scaffolding; confined spaces; personal protective equipment; materials handling, storage, use and disposal; hand and power tools; steel erection; and cranes, derricks, hoists, elevators, and conveyors.
Lecture: 1 hours
Prerequisite(s): Admission to Ironworking apprenticeship program, or departmental approval.

ATIW-1330 Erection Concepts & Practices
3 Credits
Principles and techniques of structural steel erection, including detailing procedures. Covers installation of temporary flooring, accurate alignment of steel assembly, safety nets and railings, and various types of connections: bolts, rivets and pins, layout and erection of bar joists, bridging, scaffolds and ladders, according to OSHA regulations. Includes blueprint reading.
Lecture: 3 hours
Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment, or departmental approval.

ATIW-1400 Principle of Reinforcing Steel
2 Credits
Basic principles of reinforcing steel, using tools and methods necessary for layout and fabrication, according to engineering and placing drawings. Application of basic structural building forms to reinforce concrete structures, including structural value of footings and use of beam and slab design; history of reinforced concrete and manufacturing process of reinforcing steel; and basic types of highway structures.
Lecture: 2 hours
Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment; or departmental approval.

ATIW-1410 Practical Applications of Reinforcing Steel
1 Credit
Applications relating to placement of reinforcing steel in footings, walls, columns, beams, girders, joists and slabs and to bar splicing. Continued study of highway structures, including airport paving. Introduction to reinforcing accessories, dowels, and mechanical couplers.
Lecture: 1 hours
Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment; or departmental approval.
ATIW-1600 Welding Fundamentals for Ironworkers
3 Credits
Fundamentals of welding with special emphasis on the ironworking trade. Includes welding processes; cutting and gouging processes; operational and site safety; welding equipment and tools; and safety equipment and protective clothing.
Lecture: 3 hours
Prerequisite(s): ATIW-1300 Structural Steel Concepts, and ATIW-1310 Safety for Ironworkers; or departmental approval.

ATIW-1806 Special Topics in Unbonded Post Tensioning
2 Credits
Course covers the principals and theory of pre-stressed, un-bonded post tensioning and the application techniques including re-tensioning procedures. Also included are the basics of drawing interpretation of field documents required for uniform layout and placement of stressing tendons. A discussion of tendon failure and resolution is included.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Ironworker’s apprenticeship program.

ATIW-2300 Shielded Metal Arc Welding
3 Credits
Shielded metal arc welding principles and techniques. Includes required equipment tools and supplies, electrical and environmental safety, eye hazards associated with arc burn, and protective clothing requirements.
Lecture: 3 hours
Prerequisite(s): ATIW-1600 Welding Fundamentals for Ironworkers or concurrent enrollment, or departmental approval.

ATIW-2310 Welding Specialties
3 Credits
In-depth study of welding and cutting techniques. Students will perform oxy-fuel gas welding and cutting techniques, arc cutting and gouging, and stud welding as applied to ironworking trade.
Lecture: 3 hours
Prerequisite(s): ATIW-2300 Shielded Metal Arc Welding or concurrent enrollment, or departmental approval.

ATIW-2320 Welding Blueprints and Design
3 Credits
In-depth study of welding blueprint lines, arrows, views, and symbols; basic layout construction; and identification of welding positions, parts of fillet welds, groove joints and welds, and backup materials. Includes recognition, drawing, measurement calculations, and problem solving.
Lecture: 3 hours
Prerequisite(s): ATIW-2310 Welding Specialties or concurrent enrollment, or departmental approval.

ATIW-2330 Pre-Construction Planning of Specialty Applications
2 Credits
Includes erection sequence and handling of specialty products. Installation of members and connections performed in compliance with OSHA regulations.
Lecture: 2 hours
Prerequisite(s): ATIW-2320 Welding Blueprints and Design, or departmental approval.

ATIW-2340 Speciality Installation Equipment
2 Credits
Study and use of equipment in installation of specialty building products. Safety training including employee, equipment, and jobsite safety and procedures for material handling and inspections, according to OSHA regulations.
Lecture: 2 hours
Prerequisite(s): ATIW-2330 Pre-Construction Planning of Specialty Applications or concurrent enrollment, or departmental approval.

ATIW-2350 Ornamental Systems & Railings
2 Credits
Installation methods for and identification of various ornamental applications, including curtainwall and window wall systems, stairs, railings, and wall handrails, and their anchors and fasteners. Use of hand and power tools for installation. Operation of various layout instruments.
Lecture: 2 hours
Prerequisite(s): ATIW-2330 Pre-Construction Planning of Specialty Applications or concurrent enrollment, or departmental approval.

ATIW-2360 Ornamental Applications
2 Credits
Procedures for and installation of ornamental applications, including rolling service doors, sloped walls, metal and ship ladders, toilet partitions, vanity supports, relief angles, flagpoles, and chain link fences.
Lecture: 2 hours
Prerequisite(s): ATIW-2350 Ornamental Systems and Railings or concurrent enrollment, or departmental approval.

ATIW-2400 History of Iron Workers Union
3 Credits
The Iron Workers Union in America from 1896 through today, including people and events that influenced the organization.
Lecture: 3 hours
Prerequisite(s): ATIW-2350 Ornamental Systems and Railings or concurrent enrollment, or departmental approval.

ATIW-2500 Rigging and Hoisting
3 Credits
Procedures of rigging and hoisting including identification, handling, and storage of equipment: chains, hardware, reeving, slings with practice of knot tying and splicing. Topics include characteristics and uses of cranes, procedures for inspection, safe operation, testing and maintenance of cranes, including machine assembly and set-up procedures. Safety procedures and hand signaling, according to OSHA regulations.
Lecture: 3 hours
Prerequisite(s): ATIW-2360 Ornamental Applications or concurrent enrollment, or departmental approval.
Applied Industrial Technology (Lifting Technologies)(ATLT)

ATLT-1000 Orientation for Lifting Tech
2 Credits
Introductory course covering the history and values of the Mazzella Company M/C, including career opportunities and advancement through continuing education and apprenticeship. Included are basic technical training and application as part of the rigging industry.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1010 Industrial Safety
1 Credit
Certification course covering industrial safety as it pertains to motorized lifts. Included are fork lifts and aerial lifts using crane and rigging industry for the movement of personnel, equipment, and/or material.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1020 Introduction to Lifting & Rigging
2 Credits
Introductory course into the Lifting and Rigging Industry, the applied practices and applications of slings. Introduces various types of rigging gear in use, rigging hardware proper use and pre-use inspection. Explore loads, sling angle stresses, and common rigging applications and practices.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1030 Introduction to Wire Rope
1 Credit
Introductory course covering common types of wire rope used in the lifting and rigging industry. Includes basic understanding of terminology, identification of ropes, construction types as well as proper use, inspection, and maintenance of wire rope. The physical properties of wire rope will also be covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies Apprenticeship program.

ATLT-1040 Safety in Lifting and Rigging I
1 Credit
Introductory course covering common types of slings used in the rigging industry. Includes basic understanding of terminology, proper use, and maintenance of slings. In addition, the relationship of the rated load, including design factors and efficiency using sling charts and applied math concepts, for sling selection and proper lifting procedures will be covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

ATLT-1050 Rigging Geometric
2 Credits
Provides an emphasis on the techniques used for understanding stresses common in lifting and rigging. Review of trade and industry math and applications commonly found in lift plans calculations. Includes the interpretation of drawings, technical drawings of lifting applications.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admissions to Lifting Technologies apprenticeship program.

ATLT-1060 Layout & Fabrication Procedure
1 Credit
Introduction to the layout and fabrication techniques for slings and rigging gear. Covers the calculations and sizing of various types of slings. Includes practical hands on learning of techniques of layout and fabrication to manufacture slings and the basics of reading drawings, technical drawings, and prints.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1070 Blue Print Reading for Rigging I
2 Credits
Introduction to reading and interpreting working drawings for fabrication processes of both weldments and fabricated slings. Covers the fabrication prints of various types of rigging gear in use. Explore reading drawings including dimensions, bill of material, weld symbols, and specialty notes.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies Apprenticeship program.

ATLT-1080 Lifting Technologies Safety Training
1 Credit
Covers the safety activities required in a lifting and rigging fabrication plant. Includes understanding of the hazards associated with wire rope, synthetic, and chain sling fabrication facilities. The safety considerations required for the handling, storage, shipping and receiving of rigging materials will also be covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies Apprenticeship program.

ATLT-1090 Introduction to Welding for Lifting Technologies
2 Credits
Covers the safety requirements for welding and cutting processes used in the lifting technologies industry. The physics of welding, various joints and positions and guided practices using oxygen - fuel and gas cutting is covered. In addition, welding processes using metal inert gas (MIG) and tungsten (TIG) used for specific applications will be addressed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.
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| ATLT-1100  | Introduction to Inspections: Field Tablets IC3   | 1       | Introductory course covering the rigging inspection connection process as performed on a mobile computer/tablet in the field. Includes utilizing an electronic tablet, the inspection data, and report delivered to the end user. Includes creating, maintaining, and organizing an asset management system, "Inspection Connextion" IC3. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-1110  | Technologies in Rigging                          | 1       | Provides an emphasis of the technologies used in lifting and rigging industry. Incorporates the use of computers and specialized equipment to learn how to communicate and solve business and practical shop problems. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program in Lifting Technologies. |
| ATLT-1801  | Special Topics: Crane Operator Training          | 1       | Operator training course for overhead cranes and hoists. Course identifies the different crane types, operation techniques and hoisting motions. Included are the applicable safety agencies and their respective standard with respect to safe crane and hoisting operations. In addition, practical application of crane maneuvering and hoisting is covered. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-1802  | Mobile Cranes I: Types and Components            | 1       | Course covers the different types of mobile cranes, electric and hydraulic, common components of each and their respective applications. Included is a discussion and explanation of the lateral and vertical operation of tower cranes. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-1803  | Special Topics: Overhead Crane Classification    | 1       | Course covers various industrial crane classifications with respect to national and international design standards and describes component specifications with respect to lifting applications. In addition, design criterion related to inspection procedures and cost factors is covered. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-1806  | Special Topics: Overhead Crane Drive Systems     | 2       | This course covers the types of drive systems used for all types of Cranes. The student will be able to demonstrate the ability to discuss and identify the types of drive systems on an electric overhead crane, hoist, or workstation. Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2010  | Lifting Project Module                           | 1       | Introductory course covering the lifting project module input and workflow in Adjutant. Includes utilizing Adjutant project module, task management and route maintenance to deliver a process and workflow in conjunction with the appropriate project types. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2020  | Proof Test Operations                            | 1       | An introductory course into the safe testing processes and requirements for operating test equipment for non-destructive testing of slings, rigging gear and special lifting assemblies and hardware. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2040  | Wire Rope Applications I                         | 1       | Intermediate course covering wire rope applications common to the lifting and rigging industry. Includes understanding wire rope terminology, wire rope constructions, characteristics of various wire rope constructions, and general understanding of wire rope selection. Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2050  | Blue Print Reading for Rigging II                | 2       | Advanced reading and interpreting of working drawings for fabrication processes of both weldments and fabricated slings including inspections. The course offers an advanced look into fabrication prints of various types of rigging gear in use. We will delve even deeper into real-world applications and involve more hands on activities. The course will explore the creation of as built noted drawings, inspection drawings, tolerance stacking, surface finishes specialty weld symbols, electrical schematics and material alternatives. Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2110  | Introduction to Project Planning and Processing for Lifting Technologies | 2       | Introduction to project planning and processing for lifting technology projects including introduction to the basics of the project planning and processing from project approval to closing. Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
| ATLT-2130  | Overhead Crane Electrical                        | 2       | Cover electrical maintenance procedures for all types of Cranes. Demonstrate the ability to troubleshoot electrical problems and determine effective methods of installing or repairing electrical components in any type of electric overhead crane, hoist, or workstation. Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program. |
ATLT-2140 Overhead Crane Mechanical
2 Credits
Introductory course in identifying and understanding the mechanical components of overhead cranes and hoists. Included will be an overview of proper component terminology, types, uses, and the subsequent selection of various mechanical components and devices that make up an Overhead Crane or hoist.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2170 Overhead Crane Inspector
2 Credits
Advanced course covering crane safety standards, as prescribed by the Occupational Health and Safety Administration, different crane types, and crane components. Included are procedures for crane inspections, configurations and reporting, and report delivery to the end user with critical findings.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship programs.

ATLT-2280 Overhead Crane Inspect Safety
2 Credits
Safety course covering inspection of overhead cranes. Included are the use of aerial lifts, personal protective equipment (PPE), and fall protection. Also covered is electrical safety concerns related to specific inspections.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2500 Rigging Inspector Certification
3 Credits
Introductory course covering the OSHA and ASME requirements for the visual inspection of alloy chain slings, metal mesh slings, wire rope slings, synthetic slings, round slings, and rigging hardware within the rigging industry. Includes the basic understanding of terminology, OSHA 1910.184, ASME B30.9 ASME B30.26 and application of these standards.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2510 Sling Fabrication - Flat Web & Chain
1 Credit
Introduction to the layout and fabrication techniques for flat web slings and chain slings. Covers the calculations and sizing of various types of flat web and chain slings. Practical hands on learning of the techniques of layout and fabrication to manufacture flat web and chain slings and will cover basics of reading drawings, technical drawings, and prints.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2520 Socketing
1 Credit
Covers the basic types and fabrication of socket assemblies. Outlines the techniques and processes required to fabricate these assemblies. Features the application and installation procedures of the various types of socketing.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2801 Special Topics: Safety in Lifting and Rigging
1 Credit
This course covers the planning for load handling activities. It includes the basic understanding of terminology, proper planning, and use of cranes, hoists, slings, and lifting accessories. Personnel qualifications, and their roles and responsibilities will be discussed. In addition, standard and critical lift plans will be covered. Finally, sling charts and applied math concepts, for proper sling selection will be covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2802 Special Topics: Crane Preventative Maintenance
1 Credit
Advanced course covering the preventative maintenance procedures required for different crane types. Included are prescriptive measures as stated in OSHA and ANSI standards. The course addresses specific safety procedures mandated by Federal safety regulations
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2806 Special Topics in Introduction to Project Planning and Processing for Lifting Technologies
2 Credits
Introduction to project planning and processing for lifting technology projects. This course offers an introduction to the basics of project planning and processing from project approval to closing. The course will also introduce basic project management tools and best practices.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2807 Special Topics in Welded Chain Sling
2 Credits
This course covers the layout and fabrication of welded chain slings including the welding processes. Also covered is the chain heat treating and proof testing procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.
ATLT-2808 Special Topics in Overhead Crane Drive Systems  
2 Credits
This course covers the types of drive systems used for all types of Cranes. The student will be able to demonstrate the ability to discuss and identify the types of drive systems on an electric overhead crane, hoist, or workstation. Designed for the electrically experienced technician and will also guide the non-experienced technician to understand crane drive systems.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2809 Special Topics in Crane Preventative Maintenance  
2 Credits
Advanced course covering the preventative maintenance procedures required for different crane types. Included are prescriptive measures as stated in OSHA and ANSI standards. The course addresses specific safety procedures mandated by Federal safety regulations.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

Applied Industrial Technology (Manufacturing Technology) (ATMT)

ATMT-1000 Mechanical & Spatial Relations  
4 Credits
Relationship between two-view and three-view images. Basics of visualizing three-dimensional objects from two-dimensional front, side, and top views. Perceptual ability, spatial views, matching parts and figures. Visualization of shapes or patterns that can result from fitting together cut-up pieces. Graphically describing size and shape to represent basic mechanical elements along with cube counting.
Lecture: 4 hours
Prerequisite(s): Departmental Approval: Admission to any Applied Industrial Technology program.

ATMT-1100 Manufacturing Skills I  
3 Credits
Stresses relationship of engineering drawing to applications of manufacturing part including lines, views, dimensioning, metric system, calculating cut of points, freehand lettering, sketching, and use of drafting tools to construct blueprint. Includes fraction to decimal conversion, drafting line using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols, and broken sections.
Lecture: 3 hours
Prerequisite(s): Departmental approval: sponsorship in approved apprenticeship program offered by a member company, or acceptance to PMT certificate program.

ATMT-1110 Manufacturing Skills II  
2 Credits
Provides skills in layout techniques and operations, including bolt hole circles, location of surfaces related by non-right angle triangles, and points of tangency. Includes layout drawing by sketching proper views from actual part.
Lecture: 2 hours
Prerequisite(s): ATMT-1100 Manufacturing Skills I or concurrent enrollment; or departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1120 Machine Operations I  
6 Credits
Introduction to machine shop practices to produce manufacturing parts. Includes operation of machinery, terminology, safety, measurement, layouts, print reading, machine set-ups, hand tools, measuring tools, cutting tools, and processes in production work flow. Emphasis on use of typical equipment found in conventional machine shop. Extensive hands-on projects.
Lecture: 1 hour. Laboratory: 15 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMT-1200 Machine Tool Theory  
4 Credits
Presents foundation for study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand shop safety practices, job planning, feeds and speeds, layout tools and procedures, hand tools and bench work, metal cutting saws, drilling machines, lathe, milling machines, jig bore and jig grinder, surface grinder, E.D.M, and abrasives.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1300 Manufacturing Procedures  
2 Credits
Principles of blanking and/or piercing dies; bending; screw and dowel holes; die life; punches; pilots; die block construction; strippers and stock guides; shredders and knockouts; nest gages; pushers; die stops; stock material utilization; strip layouts; and die sets. Includes techniques and theory of building stamping dies with topics including cutting and forming operations, primary die components, and internal parts of complete die.
Lecture: 2 hours
Prerequisite(s): ATMT-1200 Machine Tool Theory or concurrent enrollment, and departmental approval: admission to Applied Industrial Technology Manufacturing Technology program.

ATMT-1500 Manufacturing Tech Skills I  
4 Credits
Advanced study of relationship of engineering drawings to applications of machine shop production of precise parts, die, and mold components, to provide students with theory on use of coordinate measuring machine (CMM) for machine tool trades. Machine shop engineering drawing mathematics, used in development and production of part from print in machine shop, will be stressed. Application of engineering drawing skills on projects made in shop. Emphasis on geometric dimensioning. Students will learn to read and comprehend advanced engineering drawings from various industries.
Lecture: 4 hours
Prerequisite(s): ATMT-1200 Machine Tool Theory, and departmental approval: admission into Applied Industrial Technology - Manufacturing Technology program.
ATMT-1600 Introduction to CAD
2 Credits
Introduction to computer systems and computer-aided drafting (CAD) software as tools used to produce engineering drawings. Keyboarding and computer operating skills are overlaid with software commands. Command topics include line coordinate systems, circles and arcs, geometry creation, text styles, editing geometry and text, controlling drawing display, drawing aids, layers, blocks, hatching, and dimensioning.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ATMT-1300 Manufacturing Procedures or concurrent enrollment, and departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1812 Special Topics-Industrial Applications
3 Credits
This course covers basic measurement, formulas and functions typically encountered within an industrial environment.
Lecture: 3 hours

ATMT-1950 Field Experience
2 Credits
Online course and shop experience in manufacturing technology. Topics are manufacturing specific in disciplines pertaining to company applications. supply inventory control, outsourcing, supplier tracking and UCC coding.
Other Required Hours: 24 hours per week.
Prerequisite(s): ATMT-1100 Manufacturing Skills I or concurrent enrollment, and departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-2120 Machine Operations II
6 Credits
Theory and application of use of engine lathe, planning machines, milling machines, grinders, quality control, metallurgy, and fasteners. Emphasis on use of typical equipment found in conventional machine shop. Extensive hands-on projects.
Lecture: 1 hour. Laboratory: 15 hours
Prerequisite(s): ATMT-1120 Machine Operations I.

ATMT-2300 Advanced Manufacturing Procedures
2 Credits
Capabilities of computer aided design (CAD) systems are covered. Students will be required to produce working engineering drawings. Instruction in tool path generation, local CNC programming and 2D simulation, including capabilities of computer aided manufacturing (CAM) systems.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ATMT-1600 Introduction to CAD, and departmental approval.

ATMT-2400 Advanced Diemaking
2 Credits
Provides a study of important advanced elements of die function and performance. Course will act as a resource for apprentices, tool designers, and others who need a working reference on design, construction, and use of stamping dies.
Lecture: 2 hours
Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2410 Advanced Moldmaking
2 Credits
Study of fundamentals of mold construction, processes and construction of plastic molds such as compression, transfer, pressure molding of non-ferrous alloys, rubber molds, dies cast molds, and injection molds. Includes foundations of mold construction, depending on design of part, material used, equipment available, and ingenuity of moldmaker.
Lecture: 2 hours
Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2420 Advanced Precision Machining
2 Credits
Advanced study of relationship of materials, fixtures, and special machining operations as they relate to applications of machine shop production of precise parts, dies, and mold components. Provides theory on use of machining exotic materials, hard turning, machining of plastics, fourth and fifth axis programming, coolants and specialty inserts. Includes practical applications and machine shop mathematics formulas used in fixture and holding device design. Provides knowledge of castings, weldments, tool coatings and manufacturing methods that are becoming part of today's technology such as waterjets and lasers. Covers advanced metallurgy processes, and standard procedures for troubleshooting all types of manufacturing projects.
Lecture: 2 hours
Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2500 Manufacturing Technology Skills II
4 Credits
Study of relationship of engineering drawings to applications of manufacturing part for CNC machines, screw machines, mold, and die components. Topics include dimension and tolerance; form tolerances; calculation of tolerance using equations; calculation of tolerances using standard shop formulas; profile and run out tolerances; location tolerances; geometric dimensioning; geometric applications; transferring engineering drawing using computer graphics; and development of engineering drawing with computer.
Lecture: 4 hours
Prerequisite(s): ATMT-2300 Advanced Manufacturing Procedures or concurrent enrollment, and departmental approval.

ATMT-2600 CNC Programming/Operations
2 Credits
Fundamentals of computer application as aid to machining processes. Emphasis on engineering drawing analysis, using trigonometry and other forms of mathematics to determine programming points; ascertaining implied part dimensions; determinations of machining parameters; calculation of speeds; feeds and tool offset; establishment of work zero and tool home positions. Manual programming of computer numerical control (CNC) machines using G-codes; tooling and set-up of CNC lathes and milling machines for machining operations; verification of toolpaths by simulation; and operating CNC machines to produce mechanical parts.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ATMT-2300 Advanced Manufacturing Procedures or concurrent enrollment, and departmental approval.
ATMT-2620 CAM Principles
2 Credits
Study of geometric modeling, using selected CAD/CAM packages to graphically model parts in 2D, 3D wire-frame and solid, generating G-codes, post-processing G-codes into formats interpretable by given CNC controllers. Topics include editing G-codes with verification of toolpaths in 3D and solid model simulation; downloading path programs into CNC turning and milling centers; and machining parts. Use of metrology methods to check dimensional and geometrical accuracy of produced parts.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ATMT-2600 CNC Programming/Operations, and departmental approval.

ATMT-2700 Manufacturing Technology Skills III
4 Credits
Advanced study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand standard requirements to being a Journeyman Tool and Diemaker, Moldmaker, Precision Machinist, Precision Screw Machine operator, or Precision CNC operator. Topics include practices of job planning, maximum use of shop supplies, and how to work independently, efficiently and effectively. Scope is to demonstrate thin margin that is required to making a job profitable, helping student to troubleshoot problems that may occur with effective problem solving methods and technique.

Lecture: 4 hours
Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2990 Manufacturing Operation Principles
3 Credits
Capstone course in Manufacturing Technology. Topics include manufacturing flow, quoting, tool and materials supply inventory control, outsourcing, supplier tracking and UCC coding.

Lecture: 3 hours
Prerequisite(s): ATMT-2700 Manufacturing Technology Skills III or concurrent enrollment.

Applied Industrial Technology (Millwrighting) (ATMW)

ATMW-1320 Introduction to Millwrighting
2 Credits
Study of basic millwrighting concepts. Topics include hand and precision tool recognition and use, drilling and tapping, belt drive installation and application, and chain drive installation and application.

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1330 Print Reading for Millwrights
2 Credits
Study of print reading as applied to activities of millwrights. Topics include related math concepts, machine print components including orthographic views, line types, scale, exploded views, installation prints, revision information, optical tooling, and specifications.

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1340 Introduction to Pile Driving
2 Credits
Study of pile driving basics. Topics include history, definition of industry specific terms, blueprint reading, types and uses of pile driving tools and equipment, types of piling, skills and duties of pile drivers, safety equipment, and review of OSHA standards relevant to pile driving.

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1350 Hydraulics/Centrifugal Pumps
2 Credits
Covers the operation and the maintenance of overhung centrifugal pumps and mechanical seals. Disassembly, inspection, checking clearances and rebuilding these pumps to industry standards will be an integral part of this course.

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program.

ATMW-1450 Heavy Rigging
2 Credits
Study of rigging hardware and equipment required to lift equipment and material. Topics include mobile, fixed, tugger, and hand rigging cranes, formulating a safe lifting plan through the use of applicable calculations, weight estimation, sling loads, signaling, crane limitations, and implementing OSHA safety regulations.

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1490 Millwright Pile Driver Weld I
2 Credits
Study of basic concepts and implementation of shielded metal arc welding. Topics include theory of arc welding, operation of welding equipment, safety practices, electrode characteristics and selection, identification of weld joint types, and personal protective equipment (PPE).

Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.
ATMW-1600 Rotating Equipment
2 Credits
Study of rotating equipment. Topics include precision equipment and tools and terminology, bearing type installation and application, math concepts, shaft alignment, reverse dial alignments, laser alignment application and interpretation, and safety measures.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1720 Machinery Installation
2 Credits
Introduction to layout, leveling, and installation of heavy industrial equipment. Topics include hand rigging techniques, proper forklift operations, shoring, heavy timber, false work, and installation of equipment according to OSHA regulations.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or departmental approval.

ATMW-2120 Shaft Alignment
2 Credits
In-depth study of concepts related to shaft alignment. Topics include rim and face alignment procedures, indicator set up and use, soft foot identification and elimination, correction methods, mathematical alignment concepts, and coupling installation and application.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or departmental approval.

ATMW-2130 Shaft Alignment II
2 Credits
Review of rim and face alignment procedures. Covers reverse dial indicating. Application of mathematical formulas used to solve alignment problems and graphing techniques will be covered. Laser alignment systems and all of their functions will also be included.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology Program.

ATMW-2230 Millwright Pile Driver Weld II
2 Credits
In-depth study of multi-pass horizontal and vertical-up groove welds using the shielded metal arc welding process. Topics include blueprint reading for welders, introduction to D1.1 structural weld code requirements, welding safety practices, and guided practice time.
Lecture: 2 hours
Prerequisite(s): ATMW-1490 Millwright Pile Driver Weld I or concurrent enrollment; or departmental approval.

ATMW-2350 Floor Conveyor
2 Credits
Study of floor conveyor systems used to transfer materials in assembly line operations and related manufacturing facilities. Topics include blueprint reading, layout procedures, component installation, proper use of an aerial lift, and OSHA safety requirements.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-2400 Steam Turbines
2 Credits
Covers the various types of steam turbines currently in use. Students will learn how a turbine operates and will identify the various components of a turbine. Students will disassemble a steam turbine and determine the millwrights’ responsibilities while working on a steam turbine.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMW-2500 Combustion Turbine
2 Credits
In-depth study of combustion turbine use, installation, and repair. Topics include turbine safety concepts, component identification, maintenance, rigging procedures, installation, and fuel nozzle installation and repair.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-2520 Millwright Pile Driver Weld III
2 Credits
Study of advanced topics in millwright and pile driver welding. Topics include multi-pass vertical-up groove, technical review of material presented in ATMW 1490 Weld I and ATMW 2230 Weld II, carbon arc process, non-destructive testing, alloy welding, safety practices, guided practice time, and preparation for the American Welding Society (AWS) D1.1 vertical-up unlimited thickness certificate test.
Lecture: 2 hours
Prerequisite(s): ATMW-2230 Millwright Pile Driver Weld II or concurrent enrollment; or departmental approval.

ATMW-2530 Advanced Welding IV
2 Credits
Course covers the welding techniques and skills required for welding certification in wire feed and standard shielded metal arc welding (SMAW) or stick welding. Included are techniques required for machine set-up for Tungsten Inert Gas (TIG) welding and its welding processes.
Lecture: 2 hours
Prerequisite(s): ATMW-2530 Advanced Welding III or concurrent enrollment, or departmental approval.

ATMW-2490 Millwright Pile Driver Weld I
2 Credits
Study of advanced topics in millwright and pile driver welding. Topics include blueprint reading, layout procedures, component installation, and screen guard installation.
Lecture: 2 hours
Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.
Applied Industrial Technology (Operating Engineers) (ATOE)

ATOE-1100 Operating Engineering Concepts
4 Credits
Basic concepts of compaction, compaction equipment, design of paving operations, and design concepts of asphalt and skid steer loaders. Tractor-scraper and oiler responsibilities also included.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1200 Basic Mechanical Concepts
3 Credits
Introduction to analysis of fuels, components and principles of fuel systems, common units, air intake systems, cooling system designs and maintenance, hydraulic systems including Pascal’s law, basics of engine electrical systems, history, development and theory of internal combustion engines. Discussion on function of clutches, basics of power train, use of brakes, and components of tracks and tire construction, selection, maintenance and storage.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1650 Graders and Plans
2 Credits
Introduction to graders operations, safety information fundamentals, terminology and various support grader operations, pre and post operations, methods of finish grading, and fundamentals of construction leveling. Topics include terminology of laser and laser machine controls; proper set-up procedures; safe work practices in the use of lasers and components of laser machine controls; and common highway plans for construction projects including introduction to basic plans, their purpose, and learning how to interpret them.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1700 Paving, Tractor, Backhoe Operations
3 Credits
Introduction to design concepts of paving, identifying operation controls of any hydraulic and loader equipment, basic operations and maintenance safety of equipment, standard and conventional scraper, differentiate one-engine and two-engine scrapers, inspection and start-up, and safety procedures.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-2100 Mobile Crane
2 Credits
In-depth focus on mobile cranes. Topics include components and parts, crane signals, communications, operational safety in set-up and OSHA standards and regulations, and using load charts to calculate load weight. Also includes wire rope and rigging, and electrical hazards.
Lecture: 2 hours
Prerequisite(s): ATOE-1100 Operating Engineering Concepts, or departmental approval.

ATOE-2200 Mechanical Repair
3 Credits
Study of major mechanical systems. Detailed troubleshooting practice and procedures. Clutch diagnosis and repair, types of power trains and undercarriage maintenance also included.
Lecture: 3 hours
Prerequisite(s): ATOE-1200 Basic Mechanical Concepts, or departmental approval.

ATOE-2600 Bulldozer Practice
3 Credits
Study of standard features, standard procedures, tools, inspection, and controls of bulldozers. Topics include attachments, terminology, inspection and controls.
Lecture: 3 hours
Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-2640 Advanced Grader Practice or concurrent enrollment; or departmental approval.

ATOE-2620 Backhoe Practice
3 Credits
Study of standard features, standard procedures, tools, inspection, and controls of backhoes. Topics include attachments, terminology, inspection, and controls.
Lecture: 3 hours
Prerequisite(s): ATOE-1700 Paving, Tractor, Backhoe Operations, or departmental approval.

ATOE-2640 Advanced Grader Practice
3 Credits
Study of standard features, standard procedures, tools, inspection, and controls of graders. Topics include attachments, terminology, inspection and controls.
Lecture: 3 hours
Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-1700 Paving, Tractor, Backhoe Operations; or departmental approval.

ATOE-2650 Safety Training Passport
1 Credit
Introduction to the Occupational Safety and Health Act (OSHA). Topics include employee responsibilities and rights, standards, and basic hazard training.
Lecture: 1 hours
Prerequisite(s): ATOE-1100 Operating Engineering Concepts, or departmental approval.

ATOE-2660 Grader Safety
2 Credits
Application of safety operations of graders. Topics include reading warning signs and labels, avoiding general hazards, monitoring systems and cab features, operation techniques and towing.
Lecture: 2 hours
Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-2640 Advanced Grader Practice or concurrent enrollment; or departmental approval.

ATOE-2670 Rough Terrain Forklift Operation
2 Credits
In-depth focus on OSHA regulations regarding industrial trucks, specifically OSHA 1910.178. Also includes characteristics of forklifts, identification of components of a truck and their functions, safety operations and safety equipment used on forklifts.
Lecture: 2 hours
Prerequisite(s): ATOE-1100 Operating Engineering Concepts, and ATOE-1650 Graders and Plans; or departmental approval.
ATOE-2680 Hazardous Material Handling and Field Safety
2 Credits
Introduction to governmental laws and agencies involving worker’s health and safety protection. In-depth study of hazardous waste and emergency response operations, including the formation of Occupational Safety and Health Administration (OSHA). Regulations pertaining to specific rights to Code of Federal Regulations - OSHA 29 CFR 1910.120 (The Access to Exposure and Medical Records Standard), and decontamination procedures. Includes advanced concepts in informational programs, heat and cold stress, normal cooling mechanisms, heat-related illnesses, identifying signs of heat and cold stress and their prevention, diesel exhaust risks, asphalt emissions, Respiratory Standard Act 1910.134 and respiratory protection.
Lecture: 2 hours
Prerequisite(s): ATOE-1100 Operating Engineering Concepts, and ATOE-1650 Graders and Plans; or departmental approval.

Applied Industrial Technology (Painting) (ATPT)

ATPT-1300 Introduction to Painting, Drywall Finishing, and Glazing
2 Credits
Introduction to basic painting trades skills, including apprenticeship rights and responsibilities; painting, drywall finishing, glazing, and sign and display terminology; tools, materials, and equipment; preparation and application procedures; and safety practices.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1320 Safety Standards for Construction (OSHA-10)
3 Credits
Introduction to basic painting trades skills, including apprenticeship rights and responsibilities; painting, drywall finishing, glazing, and sign and display terminology; tools, materials, and equipment; preparation and application procedures; and safety practices.
Lecture: 3 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1330 Filling Compounds and Procedures
2 Credits
Instruction in basic elements and procedures for using filling compounds, including terminology, selection of filler, elements of drying, application of filler with trowel and broad knife, and finish sanding.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1340 Wall Preparation and Repair
2 Credits
Instruction in wall preparation and repair, including pre-job inspection, preparation of job site, and repair of wallboard, painted surfaces, plaster, and stains.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1620 Wood Finishing
2 Credits
Instruction in principles and procedures in wood finishing, including characteristics of woods, specifications and finishing procedures, preparation of surfaces, and maintenance and repair of finishes.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1630 Color Mixing and Matching
2 Credits
Instruction in color mixing and matching, including color terminology and theory, lighting and surface effects of color, use of light boxes and viewing aids, and sequence and techniques of color mixing and matching.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1640 Rigging & Hoisting
2 Credits
Introduction to basic procedures of rigging and hoisting including rope materials, care, and handling; knot tying; slings; rigging hardware and hoisting techniques; hand signals; and safety procedures.
Lecture: 2 hours
Prerequisite(s): ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-1650 Blueprints I: Construction Fundamentals
2 Credits
Introduction to basic principles of blueprint reading including terminology, types of drawings, specifications and schedules, lines, symbols, scales, dimensions, and uses for painting crafts.
Lecture: 2 hours
Prerequisite(s): ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-1660 Labor in American Society
2 Credits
Instruction in nature of work and role of unions in American society, including history of workers and unions from early republic to contemporary era, role of unions at workplace and in society, relationship of workers and unions to economy, law, and democracy.
Lecture: 2 hours
Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1801 Special Topics: Painters ICRA/First Aid
1 Credit
Certification course for First Aid and Infection Control Risk Assessment (ICRA). Fundamentals of 1st aid, CPR and AED, including substance overdose and emergency treatment is covered. In addition, procedures and practices for IUPAT workers working in health care facilities as prescribed in health care facilities is also be part of the combined course along with hands on application.
Lecture: 1 hours
Prerequisite(s): Departmental approval; admission to Painters’ apprenticeship program.
ATPT-1806 Special Topics in Painters and Lead Abatement  
2 Credits  
Certification course covering the health hazards of working with lead and other toxic materials. In addition, controls for worker and environmental protection and safe work practices are covered.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATPT-2310 Wall Covering & Paperhanging  
3 Credits  
Instruction in principles and application of wallcoverings including types of wallcoverings, surface preparation, rollage estimates, matching prints and patterns, pasting, and trimming techniques.  
Lecture: 3 hours  
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2320 Safe Work Practices  
3 Credits  
Instruction in basic and advanced safe work practices including general safe work practices, power tools, shop machinery, and advanced OSHA-30 rules.  
Lecture: 3 hours  
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2330 Spray & Industrial Painting  
2 Credits  
Introduction to basic principles of spray painting including spray painting terminology, safety procedures, conventional air spray systems, airless spray painting, and other spray systems.  
Lecture: 2 hours  
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2340 Blueprints II: Advanced Reading and Estimating  
2 Credits  
Advanced instruction in principles and application of blueprint reading including terminology, architectural drawings, engineering drawings, and application of specifications and schedules to painting crafts.  
Lecture: 2 hours  
Prerequisite(s): ATPT-1650 Blueprints I: Construction Fundamentals, or departmental approval.

ATPT-2350 Advanced Spray and Industrial Painting  
2 Credits  
Advanced instruction in spray and industrial painting techniques and procedures including equipment terminology, conventional air spray systems, electrostatic spray systems, HVLP turbine spray systems, and safety for spray painting.  
Lecture: 2 hours  
Prerequisite(s): ATPT-2330 Spray & Industrial Painting, or departmental approval.

ATPT-2360 Foreman Training  
2 Credits  
Instruction in foreman training including functions and responsibilities, communication skills, personnel duties, safety and substance abuse responsibilities, and legal requirements.  
Lecture: 2 hours  
Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2370 Abrasives Blasting Techniques  
2 Credits  
Instruction in abrasive blasting operations and procedures including types of machines and their components, materials and their characteristics, selection of machine and materials to fit job, water blasting operations, and surface preparation with abrasive blasting.  
Lecture: 2 hours  
Prerequisite(s): ATPT-2320 Safe Work Practices or concurrent enrollment; or departmental approval.

ATPT-2380 Special Coating and Decorative Finishes  
2 Credits  
Instruction in basic principles and techniques of special coatings and decorative finishes including terminology and glazing, antiquing, wood graining, marbleizing, stipple finishing, texturing, gilding, and stenciling techniques and procedures.  
Lecture: 2 hours  
Prerequisite(s): ATPT-1630 Color Mixing and Matching, or departmental approval.

ATPT-2818 Special Topics in Coatings Inspector II  
5 Credits  
A certification course for the industrial painting industry covering all aspects of metal coatings including causes of substrate deterioration, coatings tests and equipment and immersion linings. Included are preparations requirements for applications covering high pressure washing and acid edging and safety regulations for application and product transport.  
Lecture: 5 hours  
Prerequisite(s): Departmental approval: admission to Painter's apprenticeship program.

ATPT-2819 Special Topics in Coatings Inspector  
4 Credits  
Certification course for coatings inspectors covering roles, application standards, thickness measurements and required coatings application conditions. Coatings defects per industry standards and application safety during operations will also be addressed.  
Lecture: 4 hours  
Prerequisite(s): Departmental approval: admission to apprenticeship program.
Applied Industrial Technology (Pile Driving) (ATPD)

ATPD-1310 Technical Measurements, Hand & Power Tool Use in Pile Driving
2 Credits
Introduction of safe use of pile driving tools. Topics include measurements, tool groups and tool applications.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-1330 Print Reading for Pile Driving
2 Credits
Introduction to blue print reading as it pertains to the Pile Driver. In depth discussion on line types, scale, views, and revision information. Use of optical tooling for layout also included.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-1370 Pile Driving on Land and Water
2 Credits
Introduction to basic pile types and applications. Topics include recognition and use of different types of hammers, pile families designs, structural characteristics, pile driving leads, required equipment and accessories, and pile driving on land and water.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2020 Pile Driving Technologies
2 Credits
Advanced study of set up and breakdown of various cranes and equipment types. Includes identification of crane types, hardware & hitch usage, signals, and equipment capacities.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2220 False Work and Heavy Timber
2 Credits
Efficient uses, advantages, disadvantages, and special considerations related to shoring methods. Examples of types of shoring equipment shown. Matching most efficient shoring system to application is also included.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2370 Advanced Pile Driving on Land
2 Credits
In-depth study of pile driving. Includes caissons and drilled shafts, tie back walls, cofferdams and cells, shoring and lagging, and fundamentals of geo-technical engineering and soil.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2380 Advanced Pile Driving on Water
2 Credits
In depth study of pile driving on water. Topics include sheet pile and caissons, auger cast pile, cofferdams, stone setting, and extraction.
Lecture: 2 hours
Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2700 Millwright-Pile Driver Weld IV
2 Credits
Reinforcement of necessary skills required for large multi-pass welds. Preparation for A.W.S. D1.5 vertical up unlimited thickness certification test. Includes in-depth review of blueprint reading for welders.
Lecture: 2 hours
Prerequisite(s): ATMW-2520 Millwright Pile Driver Weld III, and departmental approval: admission to Carpenter's Apprentice program.

ATPD-2710 Millwright-Pile Driver Weld V
2 Credits
Advanced welding practices as applied to pile driving. GMAW topics include innershield welding, safe set up and use of wire fed welding machines.
Lecture: 2 hours
Prerequisite(s): ATPD-2700 Millwright-Pile Driver Weld IV, and departmental approval: admission to Carpenter's Apprentice program.

Applied Industrial Technology (Pipefitters) (ATPF)

ATPF-1015 Heat, Matter, and Energy
2 Credits
A study of heat theory, matter and energy as they relate to the pipefitting service industry. Included are relative definitions, mathematical conversions, and discussion of the laws of thermodynamics and of related topics covering applications to the heating and cooling industry.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1025 Basic Controls - Electricity
2 Credits
Course covers the application and theory of electricity as it relates to the heating ventilation and air conditioning industry. Also discussed are temperature controls including thermocouples and thermal resistors.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1035 Refrigeration Motors and Applications
2 Credits
Course discusses different types of motors, motor operation and the applications of motors in the refrigeration industry. Also covered are various motor devices use for overload protection and changing electrical current.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.
ATPF-1045 Motor Controls & Troubleshooting
2 Credits
Basic electric motor course used for servicing refrigeration equipment. Course covers motor components and operation, safety considerations for restarting and servicing motors. Also included is a discussion of various electrical and mechanical problems that may cause motor malfunction.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1055 Evaporators, Condensers, and Compressors
2 Credits
Course covers the function and purpose of evaporators, condensers and compressors used in the refrigeration industry. Included is a discussion of the respective components and the respective operation with respect to each other and performance in the air cooling process.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1065 Expansion Devices and Special Components
2 Credits
Course covers expansion devices used in the refrigeration process, specific terminology and the operation of the respective components. In addition, the purpose and operation of expansion devices, including thermostatic and automatic valves, and other special refrigeration enhancing components will be addressed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1070 Soldering, Brazing, and Pipefitting Tools
2 Credits
Covers the care and use of hand and power tools that are used in the pipefitting industry. In addition, safe soldering practices, alloys, joint preparation and soldering and brazing operations are included. Emphasis will be placed on the application process where the tools and equipment will be used.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1085 Refrigeration and Refrigerants
2 Credits
Introduction to the refrigeration process including relationships between pressure and boiling points and vaporization and cooling coils. Also covers refrigeration cycles, plotting and interpretation of pressure/enthalpy charts.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1095 Systems Charging
2 Credits
Course covers the charging of refrigerants in vapor and liquid states into air conditioning and heat pump systems and refrigerant oil with systems applications. Also included are the identification and operation of precision instrument for calibrating procedure.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1125 System Evacuation
2 Credits
Basic course covering the evacuation procedures followed in initiating refrigeration equipment and systems. Also included are tool and equipment identification and use, proper selection and application of each.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1135 Refrigeration Applications and Ice Machines
2 Credits
Refrigeration course discussing various refrigeration types and conditions for proper application. Also included are defrost methods for walk-in equipment, ice machines operation and product harvest and equipment service procedures.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1145 Refrigeration Transport and Problem Solving
2 Credits
Advanced course describing the refrigeration processes employed in the transportation of frozen and perishable goods using various vehicles of transport. Included are typical operating conditions for commercial refrigeration and troubleshooting common problems.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1210 Rigging
2 Credits
A study of different materials used in the rigging process. Recognize a variety of knots and exhibit an ability to tie them. Includes crane operation and many alternate methods of determining load weights.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1220 Basic Pipefitting Layout
1 Credit
A study of basic layout for pipefitters and technicians in the construction industry. Covers calculations involved in designing, installing and repairing piping runs. Reviews basic mathematics for preparation to succeed in problem solving found on the job.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1260 Sprinkler Layout
1 Credit
A study of layout for the sprinklerfitter and technicians in the construction industry. Covers calculations involved in designing, installing and repairing sprinkler piping runs. Review in basic mathematics for preparation of problem solving on the job.
Lecture: 1 hours
Prerequisite(s): Departmental approval: Admission to Pipefitter's apprenticeship program.
ATPF-1270 Sprinkler Drawings
4 Credits
A study of sprinkler systems and techniques used to produce sprinkler drawings used by pipefitters in the construction industry. In addition, interpretation of fire suppression drawings and relative piping will be thoroughly addressed.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-1360 Hydronic Heating and Cooling
2 Credits
A study of hydronic heating and cooling systems used by pipefitters and service technicians in the construction industry. Course includes a discussion of various systems, equipment sizing, air control and installation techniques. Course includes a discussion of various systems, equipment sizing, air control and installation techniques and factors that affect chilled water equipment.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-1804 Special Topics: Plate Fillet Weld
1 Credit
Basic pipefitter welding course covering the practicalities of fillet welded joints including types, features and weld size specification. Also included are shop techniques and set up procedures for proper welds.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-1806 Special Topics: Cooling Towers and Troubleshooting
2 Credits
Course explains cooling tower function and the different types of cooling towers. It discusses flow patterns, the tower sump, makeup water, blowdown and balancing the water flow. Pumps used in cooling towers will also be discussed. This course also explains the startup procedures, operation and maintenance of chilled water equipment including air-cooled, water-cooled and absorption chillers.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-1807 Special Topics: Chilled Water Systems
2 Credits
Course covers compression cycle and absorption chillers used in the refrigeration process, specific terminology and the operation of the respective components. In addition, the purpose and operation of reciprocating, scroll, rotary screw and centrifugal compressors are included. Also presented are direct expansion and flooded evaporators, water and air cooled condensers, thermostatic expansion valves metering devices and purge units.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to apprenticeship program.

ATPF-1808 Special Topics: Pipe Groove Weld
2 Credits
Basic pipefitter welding course covering open root welding including joint design, material selection and preparation, and the welding process. Included in this course are technique demonstration and application with respect to root gap, land and fit up in compliance with industry standards.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to pipefitter’s apprenticeship program.

ATPF-1809 Special Topics: P/F Pipe Bead Weld
2 Credits
Basic pipe bead welding course covering purpose, material selection, preparation, and the welding process as described by the National Certified Pipe Welding Bureau NCPWB. In addition, proper pipe bead welding techniques will be demonstrated and practiced.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to program.

ATPF-1810 Special Topics: P/F Plate Group Weld
2 Credits
Course covers the purpose and processes of plate groove welding including proper joint design and specifications. Included are welding applications and techniques required for proper material preparation, welding machine set up and welding operations.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to Pipefitter’s Apprenticeship program.

ATPF-2115 Electric Heat
1 Credit
Introductory course covering electric heat devices including hydronic boilers and controls that regulate equipment operation and safety. Included are service technician repair and preventative maintenance guidelines.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-2125 Gas Heat
2 Credits
Course covers gas furnaces, operation and controls, including safety features of gas heat. Troubleshooting and customer service is also demonstrated and discussed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.

ATPF-2130 Oil and Hydronics
2 Credits
Course discusses the types operation of oil and hydronic furnaces including the atomization of fossil fuels and water systems used for the ignition and circulation process. Maintenance procedures for service of the respective systems including oil burning efficiency and damping effects.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter’s apprenticeship program.
ATPF-2145 Air Distribution and Psychrometrics
2 Credits
Course covers air quality, psychrometric and air distribution of heat systems with respect to the pipefitting industry. Properties of air and air pollutants, heat recovery and purification will also be discussed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2155 Air Conditioning Installation and Controls
2 Credits
Course covers different types of air conditioning systems and related controls. In addition, installation and system balancing and troubleshooting mechanical problems are addressed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2165 All Weather Systems
2 Credits
Basic refrigeration course covering the concepts and operation of year round air conditioning systems including reverse cycle refrigeration and heat pumps. In addition, open and closed pump systems and effects on water quality will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2175 Domestic Refrigeration
2 Credits
Covers the refrigeration cycle and process of domestic refrigeration including component function and defrost procedures. Also included are trouble shooting and maintenance procedures and related safety hazards.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to pipefitter's apprenticeship program.

ATPF-2340 Steam Systems
2 Credits
Instructional course describing the proper installation, service and repair of steam piping systems in various commercial and industrial situations.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2450 Oxy/Acetylene Cutting and Basic Welding I
2 Credits
Introductory course describes oxyacetylene cutting and basic shielded metal arc welding (SMAW). Included are safety practices to be followed and techniques required to cut common material in the pipefitting industry.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2470 Oxy/Acetylene Cutting and Basic Welding II
2 Credits
Review of Oxyacetylene cutting and basic welding and includes applied math concepts required for determining various fabrication angles using shielded metal arc welding (SMAW). Terminology and specific rod selection used in plate and pipe welding processes will also be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2490 Pipefitters Welding III
2 Credits
Course covers the welding standards as prescribed by American Society of Mechanical Engineers and discusses weld quality, appearance and tolerances for acceptance. Included will be an introduction to template making and welding exercises designed to develop techniques for welding elbows and angles.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2510 Sprinkler Fire Protection
2 Credits
Instructional course describing the proper installation, service and maintenance of sprinkler fire protection systems.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2520 Valve Repair
2 Credits
Course describing the proper installation, service and repair of valves in various commercial, industrial and residential situations. Also included proper selection of valves for each situation.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2805 ST: Sheet Metal D.9.1
1 Credit
Certification course covering the procedures required by the American Welding Society and in conjunction with testing parameters as prescribed by the Welding Procedures Specifications for completing the sheet metal workers welding test. Course includes a complete review of metal inert gas (MIG) welding and a comprehensive study of the certification process.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's Apprenticeship program.

ATPF-2807 Special Topics: Fixed Vertical 5G Pipe Fitter Weld
2 Credits
Basic pipefitter welding course covering open root welding including joint design, material selection and prep and the welding process. Included in this course are technique demonstration and application with respect to root gap, land and fit up in compliance with industry standards.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program.
ATPF-2808 Special Topics: Fixed 45 Degree 6G Pipe Fitter Weld
2 Credits
Basic pipefitter welding course covering open root welding including joint design, material selection and prep and the welding process. Included in this course are technique demonstration and application. The 6G position is for weld test compliance.
Lecture: 2 hours
Prerequisite(s): Departmental Approval: admission to Pipefitter's Apprenticeship program.

ATPF-2812 Special Topics: P/F Fixed Horizontal 2G Pipe Weld
2 Credits
Basic pipefitter welding course covering open root welding including joint design, material selection and prep and the welding process. Included in this course are technique demonstration and application with respect to root gap, land and fit up in compliance with industry standards.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2813 Special Topics in Advanced Automatic Controls
2 Credits
Course covers the different types of temperature controls for the refrigeration industry and the equipment used to troubleshoot electronic failure. In addition, heat-cool electrical sequences, control circuits and loops will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2814 ST: U/A 21 Welding
3 Credits
United Association (UA) welding certification course covering test procedures and certification opportunities for highly skilled pipe fitter welders. Included are guidelines as prescribed by the American Petroleum Institute API and the American Society of Mechanical Engineers ASME for processed piping. Successful completion of the course requires passing weld test in accordance with API, ASME and U/A standards.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPL-1000 Care and Use of Tools
2 Credits
Identifies the hand and power tools used in the plumbing industry and discusses the operation and respective safety concerns as prescribed in the standards found in the Occupational Safety and Health Administration (OSHA) and in the manufacturer's specifications.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1010 Soldering and Brazing
2 Credits
Basic principles of joining tubing used in domestic water and medical gas installations. In addition, discussion of the principles and practices used in soldering and brazing applications.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1030 State of Ohio Plumbing Code I
2 Credits
Introduction to the State of Ohio code for plumbing. Covers general regulations, definitions and specific installations including hot water tanks and storm water systems.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1040 Plumbing Heritage
2 Credits
Introduction to labor history and the roles of the apprenticeship, apprentice, journeyperson, local union and union contractors in the construction industry. Also discusses good work habits and skills needed to excel in the construction industry.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1050 Construction Drawings
2 Credits
Covers residential blueprint reading as applied to mechanical and architectural trades. Includes sections explaining the use of various plans (site, foundation, floor) with building sections and details.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumber’s apprenticeship program.

ATPL-1060 Medical Gas
2 Credits
Certification course that studies the installation, maintenance and safety concerns of medical gas and its environmental effects.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1070 Pipe Fittings, Valves, and Supports
2 Credits
Identifies the pipe, pipe fittings, valves and supports that are used in the plumbing trade and discusses the fabrication and installation methods that are required for proper and safe installations.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.
ATPL-1210 State of Ohio Plumbing Code II
2 Credits
A study of the State of Ohio Plumbing Code with concentration on governing provisions of venting materials, design, construction, and installation of venting systems. In addition, code provisions covering fixtures, faucets and fittings, special health care regulations, and indirect waste systems are included.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1220 Gas Systems
2 Credits
Study of the procedures followed in the installation of natural gas systems, pipe sizing, safety and the repair of natural gas systems.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1230 Water Supply
2 Credits
Overview of potable water from its source to its end use. Includes discussion of water treatment, water mains, service and building water systems including water system layout, installation and maintenance, and different effects of the introduction of heat to potable water.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1240 Underground Plumbing Systems; Application and Installation
2 Credits
Advanced course covering the application and installation of underground plumbing systems including safety requirements. Also covered are installation techniques, applied math, construction tools and equipment and interpretation of mechanical drawings.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1800 Special Topics: Confined Space
1 Credit
Certification course for plumbers working in confined spaces. Also, an introduction to Material Safety Data Sheets (MSDS) and competent person training in accordance with the Occupational Safety and Health Administration (OSHA) for trenching and excavation operations will be covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1801 Special Topics: Signal Certification
1 Credit
Certification course for a pipe trades member of the United Association covering the certification standards with respect to regulations established by the Occupational Health and Safety Administration OSHA and the American Society of Mechanical Engineers ASME. Course covers crane operations including crane limitations and procedures for general lifting and specific requirements for hoisting personnel.
Lecture: 1 hours
Prerequisite(s): Departmental approval and/or a member of the U/A union.

ATPL-1807 Special Topics: OSHA 510
2 Credits
This course identifies the hand and power tools used in the plumbing industry and discusses the operation and respective safety concerns as prescribed in the standards found in the Occupational Safety and Health Administration (OSHA) specifications and in the manufacturer’s specifications.
Lecture: 2 hours

ATPL-1808 Special Topics: Natural Gas Pipe Applications and Installation
2 Credits
Advanced course covering the application and installation of natural gas piping systems including safety requirements. Also covered are installation techniques, applied math, construction tools and equipment and interpretation of mechanical drawings.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-1809 Special Topics: Plumbing Gas Systems
2 Credits
This course is the study of the procedures followed in the installation of natural gas systems, pipe sizing, safety and the repair of natural gas systems.
Lecture: 2 hours

ATPL-2320 State of Ohio Plumbing Code III
2 Credits
Review of the State of Ohio Plumbing Codes I & II with the study of storm and sanitary drainage.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2350 Electricity for Plumbers
2 Credits
Fundamentals of electricity for the plumbing trade. Covers safety, transformers, direct and alternating current, and basic controls. Discussion of motors and troubleshooting exercises.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2360 Green Plumbing Systems
1 Credit
Fundamentals of sustainable design, green building practices and installation procedures that are used in the plumbing industry. Includes applied green awareness and function with respect to the conservation and recycling of potable water and the reuse of storm and sanitary water disposal systems.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2410 City & State Backflow Cert
2 Credits
Preparation to test and repair various backflow prevention devices that are used to protect the public water supply.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.
ATPL-2430 Trench & Excavation Safety
1 Credit
Introduction to hazards and dangers of working in confined spaces. Examination of spaces with limited means of egress and limited natural ventilation that are not meant for continuous occupancy and examination of permit-required work areas with compliance to OSHA standards.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2440 City of Cleveland Plumbing License
1 Credit
Certification course identifies the natural gases that are installed for application in the medical industry and discusses their environmental effects. Discussion of methods of installation and maintenance while addressing safety concerns with installations.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2510 Pumps
2 Credits
Pumps, pump theory, and different systems used to pump various viscous liquids in plumbing systems. Reviews basic electricity and applies that knowledge to sequence of operations of pumping controls. Includes pump installation and alignment procedures and safety.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2550 Plumbing Service & Procedures
2 Credits
Discusses the service division of the plumbing industry including customer service and salesmanship. Includes sections explaining maintenance and servicing of drains, faucets, valves and hot water.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2560 Foreman Certification
2 Credits
Discussion on the responsibilities of foremanship including leadership roles to the employer and to the respective labor organization. Covers methods of handling job and labor disputes using effective communication techniques, efficient work practices and attention to safety and consequences resulting from failure to do so.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Plumber’s apprenticeship program.

ATPL-2580 Design and Layout
2 Credits
Utilization of residential and commercial drawings to identify mechanical areas within a structure where problem situations exist including conflicting elevations, illegal venting, interferences and others. In addition, writing “requests for information” (RFI’s), and change work orders will be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

ATPL-2806 Special Topics: Installation Techniques for Copper Tube & Pipe
2 Credits
This course is designed to demonstrate and qualify the students in the multiple installation practices of copper tube and pipe. Tool use, safety practices, tube/pipe and fitting identification, drawing use and applied mathematics will all be covered in this course as it relates to the installation techniques of copper tubing and pipe.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program.

ATPL-2807 Special Topics: Installation Techniques for PVC
2 Credits
This course is designed to demonstrate and qualify the students in the multiple installation practices of PVC pipe. Tool use, safety practices, pipe and fitting identification, drawing use and applied mathematics will all be covered in this course as it relates to the installation techniques of PVC pipe.
Lecture: 2 hours
Prerequisite(s): Departmental approval admission to program.

ATPL-2808 Special Topics: Cast Iron Pipe: Application and Installation
2 Credits
Advanced course covering the application and installation of cast iron pipe including waste water drainage and venting requirements. Also covered are installation techniques, applied math, construction tools and equipment and interpretation of mechanical drawings.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program.

ATPL-2809 Special Topics: Plumbing Heritage
2 Credits
This course introduces the apprentices to labor history and the roles of the apprenticeship, apprentice, journeyman, local union and union contractors in the construction industry. The course will also discuss good work habits and skills needed to excel in the construction industry.
Lecture: 2 hours

ATPL-2812 Special Topics: Electricity for Mechanical
2 Credits
Basic course on fundamentals of electricity for the plumbing trade. The course covers safety, transformers, direct and alternating current, and basic controls. Course also includes discussion of motors and troubleshooting exercises.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

Applied Industrial Technology (Sheet Metal Working) (ATSM)

ATSM-1010 Benefits Management
1 Credit
The collective bargaining process, worker wages and benefits including hospitalization and pension plans including annuities. Also covered are membership investments, dues structure and personal money management.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s apprenticeship program.
ATSM-1020 Trade History
1 Credit
An introductory course covering the sheet metal industry and its history. Included is a discussion of the roles and responsibilities of the sheet metal worker.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1030 Layout and Fabrication I
2 Credits
Introduces various techniques that are required to layout and fabricate fittings from sheet metal. In addition, the transferring of measurements from mechanical and shop drawings, to fabrication of metal, and safety in using tools and machinery for cutting metal will be discussed.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1040 OSHA 16 Hour Safety Training
1 Credit
Introduction to the Occupational Safety and Health Act (OSHA). Topics include employee responsibilities and rights, standards, and basic hazard training.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1050 Fire Life Safety Tech I
1 Credit
Course covers the purpose of life safety as it pertains to dampers in HVAC systems and fire protection. Included are discussions related to codes, standards and installation procedures as prescribed by the manufacturer and the Underwriters Laboratory (UL). Also covers mounting brackets, operating components and access doors. Testing procedures and schedules and maintenance procedures are addressed.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1210 Estimating and Bidding
1 Credit
Covers the estimating and bidding process used by contractors to justify costs and to be awarded contracts for sheet metal projects. Included is bid information, contract language and field costs.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1220 Layout and Fabrication II
2 Credits
Covers sheet metal layout and design applications in conjunction with parallel line and radial line development. Included are shop exercises involving applied math and geometric concepts that are required for calculating cut sizes for ductwork. Soldering techniques for assembling sheet metal patterns will also be covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1230 Field Installation
3 Credits
Covers the techniques required to layout, cut and fabricate components necessary to construct plenum boxes in heating and cooling systems installations. Included are applied math concepts for layout and cutting operations and drafting exercises.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1802 Special Topics: New EPA #608
1 Credit
Certification course covering the new EPA standards with respect to the Clean Air Act enabling the participant to receive current certifications in the refrigerant usage, transportation and disposal procedures. In addition testing requirements, including the Montreal Protocol, vapor/compression cycles and gage manifold is covered.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1803 Special Topics: HVAC Cleaning
1 Credit
Course covers the cleaning of various Heating Ventilation and Air Conditioning (HVAC) systems including methods, health and safety issues and restoration and remediation evaluations. Included are demonstrations and applications of cleaning procedures using required tools and equipment.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2310 Refrigeration I
1 Credit
Introduces refrigeration theory, heat transfer, and the refrigeration cycle, including the piping of residential split systems using refrigeration tubing, with concentration on installation techniques including brazing and soldering. Also included are various layout procedures using mechanical and shop drawings.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2330 Layout and Fabrication III
3 Credits
Covers sheet metal layout, fabrication, and design applications in conjunction with the triangulation method of development. Included are shop exercises involving applied math, trigonometry, and geometric concepts that are required for calculating cut sizes for ductwork. Soldering techniques for assembling sheet metal patterns will also be covered.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.
ATSM-2340 Advanced Field Installation
3 Credits
Develop team building skills by engaging in a group exercise that requires interaction among the participants to design, construct, and install the required ductwork for a project in accordance with the parameters of tolerance within a designated work area. Develop a set of construction and mechanical drawings that are needed for this specific learning exercise.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2350 Duct Design and Testing
2 Credits
Covers duct configuration and design concepts including plenum requirements and aspect ratios covering air loss due to friction. Also included is a section on performing a system leak test.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2360 Load Calculations
1 Credit
Covers heating and air conditioning load calculations required for selecting the proper size equipment for various types of buildings. Included are sections dealing with heat transmission, design temperatures, and air infiltration.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's Apprenticeship program.

ATSM-2410 Residential Heating
3 Credits
Identifies the different types of heating systems, discusses the combustion process including fuel-air mixtures and atomization of fuel oil. Also covered are electrical circuitry, air circulation, controls and safety limits.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2420 Refrigeration II
2 Credits
Covers the components of refrigeration systems, applications to air conditioning and the use of specialty tools including vacuum pumps and gages. Installation methods, maintenance and troubleshooting are also covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2510 Commercial Roof Top Units
2 Credits
Describes the different types of heating/air conditioning systems used on commercial buildings, including the use of specialty roof mounting systems. Also covered are electrical circuitry, air circulation, gas piping and optional accessories.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2520 Project Management
2 Credits
Covers the leadership and motivational aspects of project management including contract administration, project organization and site supervision.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's Apprenticeship Program.

ATSM-2530 Direct Digital Controls
2 Credits
Covers the different types of electronic and pneumatic control circuits that are used in the heating and air conditioning industry. Included are sections covering control components, loops and applications and installation procedures. Advantages and disadvantages of using digital controls are also covered.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2801 Special Topics: Fire Life Safety Tech I Supervisor
1 Credit
Certification course covering the management systems of Fire Life Safety including the principals of fire and smoke resistance and fire stages. Included is a comprehensive study of the features and components of FLS dampers and testing requirements.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2802 Special Topics: SMART ICRA
1 Credit
This course is designed to promote the awareness of infection control in existing health-care facilities. Infection control techniques used to prevent the spread of infectious agents to other patients, other areas of the facility and to the workers themselves, will be emphasized. An awareness of the types of hazards presented to workers in health-care facilities will be covered as part of this course.
Lecture: 1 hours
Prerequisite(s): Departmental approval: Admission to Sheet Metal Worker's apprenticeship program.

ATSM-2803 Special Topics: FLS Tech II Supervisor
1 Credit
Advanced course covering different Fire Life Safety FLS systems related to property protection, occupancy uses and supervisory qualifications required for smoke management and control. Included will be a review of general FLS considerations.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.
ATSM-2804 Special Topics: Sheet Metal Foreman Training  
1 Credit  
Course covers the qualifications and characteristics required for sheet metal foremanship in the construction industry. Identifying and explaining the required attributes and the management processes and job planning, workforce scheduling and material tracking and coordination skills is included. The course also reviews worker motivation and evaluation techniques and other skills needed to be an effective sheet metal foreman.  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2805 Special Topics: Sheet Metal D.9.1  
1 Credit  
Certification course covering the procedures required by the American Welding Society and in conjunction with testing parameters as prescribed by the Welding Procedures Specifications for completing the sheet metal workers welding test. Course includes a complete review of metal inert gas (MIG) welding and a comprehensive study of the certification process.  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2806 Special Topics: OSHA for Sheet Metal Workers  
2 Credits  
Certification course covering the Occupational Safety and Health Administration (OSHA) regulations for sheet metal worker safety on construction job sites. Course covers hazard recognition, Heating, Ventilation and Air Conditioning HVAC equipment placement and safe installation using lifting and hoisting devises. In addition, training requirements for the sheet metal worker and employer and code compliance is a part of this course.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2807 Special Topics: Commercial Roof Top Units  
2 Credits  
This course describes the different types of heating/air conditioning systems used on commercial buildings, including the use of specialty roof mounting systems. Also covered are electrical circuitry, air circulation, gas piping and optional accessories.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2809 Special Topics: Plans and Specifications  
2 Credits  
This course introduces the student to construction and shop drawings. Interpretation of the drawings and how they are generated will be discussed. In addition, specifications and how they are used in conjunction with drawings will be covered.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2812 Special Topics: Sheet Metal Weld I  
3 Credits  
Course covers the application of welding in the sheet metal industry including cutting and burning and a discussion of the various welding groups and positions, electrode classifications, and maintenance and repair of welding machines. Included is a demonstration and student application of the various welding techniques, fit-ups, and welding processes.  
Lecture: 3 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2813 Special Topics: Architectural Sheet Metal II  
3 Credits  
Advanced course covering different types of sheet metal roofs, fabrication and installation techniques, and safety concerns related to fall arrest systems and specific personal protective equipment. In addition, composite panels, drainage systems and related conductor heads and commercial skylights will be covered with emphasis on purpose and application will be presented and practiced.  
Lecture: 3 hours  
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

ATSM-2816 Special Topics: Sheet Metal: Electricity  
3 Credits  
Course covering basic electricity and magnetism required for servicing HVAC equipment in residential and light commercial buildings. Automatic controls used to maintain temperature and humidity is included. Various motor types and motor phases along with service and shop exercises and application are integrated.  
Lecture: 3 hours  
Prerequisite(s): Departmental approval and/or a union sheet metal apprentice or a union sheet metal journeyman.

ATSM-2817 Special Topics: Industrial I Welding Fabrication  
3 Credits  
Course covers the work scope of industrial sheet metal, applied math concepts used for layout applications and fabrication and welding techniques. In addition, rigging and hoisting operations and worker safety considerations will be addressed.  
Lecture: 3 hours  
Prerequisite(s): Departmental approval and a member of the sheet metal workers union.

ATSM-2818 Special Topics: Sheet Metal Lagging and Mechanical Insulating.  
4 Credits  
A specialty course in the sheet metal industry covering the practices of insulating heating, ventilating and air conditioning units and supply lines and transmission pipes of different sizes. Types of insulation and lagging and special tools and equipment will be discussed and demonstrated and specific safety concerns for field installations is included. In addition, applications required on various vessels, including large tanks, boilers and chutes will be addressed. The student will apply demonstrated techniques on projects similar to those used on construction projects and in accordance with industry standards.  
Lecture: 4 hours  
Prerequisite(s): Departmental Approval: Admission to Sheet Metal Worker’s Apprenticeship Program.
ATSM-2819 Special Topics in Architectural Sheet Metal
6 Credits
Course covers the function and forms of architectural sheet metal including consequences resulting from expansion and contraction on various metals, methods of maintaining moisture control and procedures employed to counter environmental effects on structures. Included are fabrication and application techniques used to install architectural sheet metal using flashings, laps, seams and different sealants.
Lecture: 6 hours
Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's Apprenticeship program.

Applied Manufacturing Technology (ZAMT)

ZAMT-1002 Shop Floor Calculations
1.8 CEU’s
Nearly every shop activity requires basic math skills - whether calculating averages for a control chart, making machine adjustments or reading prints. Basic Shop Math teaches workers how to add, subtract, multiply and divide whole numbers, fractions and decimals. The course also shows how to perform other basic activities, such as rounding numbers and calculating averages. The focus of the course is on practical application - all examples and exercises are easily grasped and are based on operations and measurements that shop workers typically encounter on the job.
Contact hours: 18
Not financial aid eligible.

ZAMT-1006 Blueprint Reading for Machinists
1.8 CEU’s
Blueprints are the universal form of communication in manufacturing plants and machine shops. This course teaches you how to understand the language of blueprints and how basic concepts are applied in a manufacturing environment. You will learn to read and interpret blueprints, and study different views of an object, including dimensioning techniques, tolerance methods and drawing notes.
Contact hours: 18
Not financial aid eligible.

ZAMT-1087 Measurement & Gaging
2.4 CEU’s
Learn how to use basic measuring equipment such as rulers, calipers and micrometers to gage and measure workpieces in our state-of-the-art inspection center. The course also covers basic plate measurement techniques utilizing gage blocks, height gages and sine bars.
Contact hours: 24
Not financial aid eligible.

ZAMT-1088 Coordinate Measuring Machine
0.2 CEU’s
Learn how to use a Coordinate Measuring Machine (CMM) to perform basic part inspection and generate reports. This hands-on class is conducted in our state-of-the-art Inspection Center.
Contact hours: 2
Not financial aid eligible.

ZAMT-1116 Geometric Dimensioning & Tolerancing
1.2 CEU’s
Learn how to interpret the concepts of geometric dimensioning and tolerancing to engineering drawings, applying acquired skills through the completion of hands-on exercises.
Contact hours: 12
Not financial aid eligible.

ZAMT-1123 Safety in the Shop
1.2 CEU’s
Hazards are everywhere in the shop! Protect yourself and others by practicing safe work habits. This course will show how to reduce your risk.
Contact hours: 12
Not financial aid eligible.

ZAMT-1134 Ford Six Sigma DMAIC Overview
0.8 CEU’s
This course covers the basics of Lean Six Sigma and the DMAIC improvement model.
Contact hours: 8
Not financial aid eligible.

ZAMT-1161 Customized Shop Math for Forgers
4 CEU’s
Course covers the mathematical calculations encountered on the shop floor in the forging industry.
Contact hours: 40
Not financial aid eligible.

ZAMT-1165 Customized Blueprint Reading for Forgers
4 CEU’s
Customized blueprint reading class for Alcoa Forgers.
Contact hours: 40
Not financial aid eligible.

ZAMT-1167 2D Subtractive to 3D/RP/AM Technology & Materials Overview
0.6 CEU’s
Principles of the applications of Additive Manufacturing. Advantages of using Additive Manufacturing over traditional Subtractive Manufacturing processes and materials are studied. Includes equipment technical overview, hands-on printing, lab exercises, and safety. Materials to be provided in class by instructor.
Contact hours: 6
Not financial aid eligible.

ZAMT-1168 2D to 3D/AM Materials Overview
0.8 CEU’s
This is an introduction to materials science course. It covers the mechanical, chemical and thermal properties of engineering materials including metals, alloys, ceramics, polymers and composites. Includes materials microstructure, atomic bonding, future of fabrication, atomic arrangement, crystal structure, coexisting phases, interfaces, defects and impurities. Material topics will cover: FDM Stratasys, PBF - Z-corp, 3D Systems, EOS Machines, Renishaw, Photo Reactive Polymer - Formlabs, Object, other 3D systems, and Stereolithography.
Contact hours: 8
Not financial aid eligible.
ZAMT-1169 DFAM: Product Design Evolution
1.2 CEU's
Provides knowledge of the theory of Rapid Prototyping, the enabling
critical thinking in new product development, process building,
sustainability, future of fabrication, and innovation theories. 3D Additive
Manufacturing is a paradigm shift for design in general. Advantages of
using Lean Manufacturing and Six Sigma are studied. Course material
provided.
Contact hours: 12
Not financial aid eligible.

ZAMT-1174 3D Rapid Prototyping (One-Offs)
2.4 CEU's
This course covers some of the more advanced techniques and
commands for creating parts and assemblies using GeoMagic Software.
Emphasis on more advanced 3D printing and scanning for custom
products and rapid prototyping (One-Offs)
Contact hours: 24
Not financial aid eligible.

ZAMT-1182 Intro Electrical and Electronic
4 CEU's
Introduction to Electronic and Electrical components.
Contact hours: 40
Not financial aid eligible.

ZAMT-1183 Customized Arconic Forger Apprentice Training
8 CEU's
Customized class for Arconic company Forger Apprentices.
Contact hours: 80
Not financial aid eligible.

ZAMT-1184 Customized Hot Forging Inspector
10.4 CEU's
Customized training program for hot forgers at Arconic Company.
Contact hours: 104
Not financial aid eligible.

ZAMT-1185 Customized Applied Math for Arconic
3.6 CEU's
This course covers the applied mathematics needed layout inspectors at
Arconic.
Contact hours: 36
Not financial aid eligible.

ZAMT-1186 Customized Blueprint Reading - Arconic Layout Inspector
3.6 CEU's
This course covers blueprint reading as required by layout inspectors at
Arconic.
Contact hours: 36
Not financial aid eligible.

ZAMT-1187 Customized Measurement for Arconic Layout Inspectors
3.6 CEU's
This course covers measurement and gaging techniques required on the
job for layout inspection at Arconic
Contact hours: 36
Not financial aid eligible.

ZAMT-1188 Customized Basic Computer for Arconic Layout Inspectors
3.6 CEU's
This course covers the basic computer skills needed for layout inspectors at
Arconic.
Contact hours: 36
Not financial aid eligible.

ZAMT-1190 Customized Blueprint Reading for VMS
0.4 CEU's
Customized blueprint reading class for Visual Marking Systems
Contact hours: 4
Not financial aid eligible.

ZAMT-1191 Customized Measurement for VMS
0.4 CEU's
Course covers the measurement methods for inspection of product at
Visual Marking Systems.
Contact hours: 4
Not financial aid eligible.

ZAMT-1197 Mechatronics
12.8 CEU's
Part 1 of 2 of the Siemens Mechatronic Systems Certification Program.
This includes covering Electricity and Electronic Components, and Motors
and Mechanical Drive Components.
Contact hours: 128
Not financial aid eligible.

ZAMT-2721 Blueprint Reading for Arconic Layout Inspectors
3.2 CEU's
This course covers reading and interpreting mechanical blueprints with
an emphasis on the prints in use at Arconic Forging plant
Contact hours: 32
Not financial aid eligible.

ZAMT-2723 Applied Math for Arconic Forger Trainee
2.4 CEU's
This course covers the math typically encounter by Forger Trainees at
Arconic.
Contact hours: 24
Not financial aid eligible.

ZAMT-2724 Customized Measurement for Arconic Forger Trainee
2 CEU's
This course covers the measurement techniques encountered on the
shop floor by Arconic forgers.
Contact hours: 20
Not financial aid eligible.

Art (ART)

ART-1010 Art Appreciation
3 Credits
Introduction to the nature, vocabulary, media, and history of art as well
as an examination of art’s themes and purposes, visual elements, and
principles of design.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on
English Placement Test.
OAN Approved: TMAH.
ART-1040 Survey of Non-Western Art
3 Credits
Provides a stylistic and historical overview of indigenous visual arts in Africa, India, Indian Surround, China, Japan, Oceania, South America, Mesoamerica, and Native North America.
Lecture: 3 hours
Prerequisite(s): ENGL-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMAH.

ART-1050 Drawing I
3 Credits
An introduction to basic drawing methods, media, and concepts. Studio experiences will emphasize drawing from observation and the development of line, mass, proportion, negative/positive space and shape. Projects may vary with classroom or departmental approval: comparable skills.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
OAN Approved: OAH001.

ART-1060 Drawing II
3 Credits
Further development of observational and conceptual drawing skills with an emphasis on spatial, structural, and compositional concepts. An introduction to color media and the development of additional drawing strategies to meet situations demanding advanced competencies. To advance skills, this course may be repeated for up to 9 credits, 3 of which are applicable to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.

ART-1070 3D Foundations
3 Credits
Introduction to three-dimensional art and design concepts, materials, tools and processes. Through a variety of hands-on projects, students will study the elements and principles of three-dimensional visual design and their application in creative expression.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
OAN Approved: OAH059.

ART-1081 2D Design and Color
3 Credits
An introduction to the elements and principles of design and color theory on the two-dimensional surface as a basis for creative solutions for the problems of the artist and designer.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
OAN Approved: OAH058.

ART-1100 Sculpture I
3 Credits
Introduction to sculptural forms, materials, and processes. Application of three-dimensional design principles to given spatial problems. Overview of historic significance of sculpture. Projects may vary with classroom facilities at each campus.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1070 3D Foundations; or departmental approval: comparable course.
OAN Approved: OAH047.

ART-1600 Introduction to Art Therapy
3 Credits
Introduction to basic concepts of art as therapy, provide an overview of the origins, theories, and foundations of art therapy. Students will be exposed to a variety of art media and major readings in the field utilizing art as a means of communication. Artistic talent is not required for this course. Note: Professional level certification in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets American Art Therapy Association prerequisite requirements for entering a Master's program in Art Therapy.
Lecture: 3 hours
Prerequisite(s): None.

ART-1610 Art Therapy II: Methods and Media
3 Credits
Explore theories of art therapy and their effect on the delivery of services. Student groups experience art therapy methods and media. Heighten student's awareness of personal goals and expectations for entering the art therapy profession, and deepen understanding of the creative process. Connect the student with his/her creative potential through studio experiences. Note: Professional level certification in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets American Art Therapy Association prerequisite requirements for entering a Master's program in Art Therapy.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ART-1600 Introduction to Art Therapy; and PSY-1010 General Psychology or PSY-101H Honors General Psychology; and PSY-2050 Psychology of Personality or concurrent enrollment.

ART-1700 Ceramics I
3 Credits
Introduction to basic hand building techniques, surface decoration and glazing methods, and kiln firing practices. Create artworks of increasing complexity, exploring functional and sculptural designs. Broad survey of historical and contemporary ceramics.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
OAN Approved: OAH050.

ART-179H Honors Contract in Art
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes and objectives for an existing ART-1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an Honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course in Art whose instructor agrees to mentor the student in this contract. Departmental approval required.
ART-1816 Special Topics: Art Therapy Study Abroad-Beginner Level
3 Credits
First-hand introductions to the art, history, culture and art therapy/alternative healing found in countries abroad from the Antiquities to Modern eras. Includes an examination of art’s nature, vocabulary, media, themes, purposes, visual elements, and principles of the therapeutic value of art therapy. This course is designed to assist students in preparing or learning about various countries abroad, which includes discussion on being a participatory and interactive traveler to obtain cultural experience.
Lecture: 3 hours
Prerequisite(s): ART-1600 Introduction to Art Therapy or departmental approval.

ART-1820 Independent Study/Research in Art
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ART-182H Honors Independent Study in Art
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ART-182S Independent Laboratory Study/Research
1-3 Credits
Independent two-hour lab per credit. Directed Individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): Comparable skills.

ART-2000 Life Drawing I
3 Credits
Introduction to drawing human figure from live model. Emphasis is on gesture drawing to accurately establish the proportion and pose of the figure. The elements of line and value are used to describe form, structure, and space. Anatomy for artists is introduced. Various media are explored.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.
OAN Approved: OAH051.

ART-2010 Life Drawing II
3 Credits
Continued exploration of drawing the human figure from a live model. Emphasizes anatomy lessons to portray human structure and to explore the figure's expressive nature. Craftsmanship and proficiency with various media are stressed. Control of gesture and proportion, and the representation of foreshortened forms within a three-dimensional environment will be examined. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-2000 Life Drawing I, or departmental approval: comparable skills.

ART-2020 Art History Survey: Prehistoric to Renaissance
3 Credits
A stylistic and historical overview of the visual arts in Western culture from inception to the fifteenth century including: Prehistoric, Egyptian, Ancient Near Eastern, Greek, Etruscan, Roman, Byzantine, Early Medieval Monastic, Carolingian and Ottonian, Romanesque, Gothic, Fourteenth-Century Art in Italy, Fifteenth-Century Art in Northern Europe and Spain, and the Early Renaissance in Italy.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment. OAN Approved: TMAH and OAH005 (Course 1 of 2, both must be taken).

ART-202H Honors Art History Survey: Prehistoric to Renaissance
3 Credits
Introduction to the major works of visual art in Western cultures from Prehistory to the early Renaissance including Paleolithic, Neolithic, Egyptian, Ancient Near Eastern, Greek, Etruscan, Roman, Byzantine, Islamic, Early Medieval, Romanesque, Gothic, and fourteenth-century and early fifteenth-century art in Northern Europe, Spain, and Italy. Critical examination of style and art historical analysis of objects from early Western cultures and civilizations.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; or ENG-101H Honors college Composition I or concurrent enrollment; OAN Approved: OAH051.

ART-2030 Art History Survey: Late Renaissance to Present
3 Credits
A stylistic and historical overview of the visual arts in Western culture from the sixteenth century through today, including Italian Renaissance, Manerism, Seventeenth Century Art in Northern Europe and Spain, Baroque and Rococo, Neoclassicism and Romanticism, Nineteenth, Twentieth, and Twenty-First Centuries Art in Europe and the United States.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment. OAN Approved: TMAH and OAH005 (Course 2 of 2, both must be taken).
ART-203H Honors Art History Survey: Late Renaissance to Present
3 Credits
Introduction to the major works of visual art in Western cultures from the late Renaissance to the present including Fifteenth Century Italy and Northern Europe, Sixteenth Century Italy, Northern Europe, and Spain, Mannerism, Baroque and Rococo, Neoclassicism, Romanticism, Nineteenth, Twentieth, and Twenty-First Centuries Art in Europe and the United States. Critical examination of style and art historical analysis of objects from late Renaissance to the present.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; or ENG-101H Honors College Composition or concurrent enrollment.

ART-2050 Painting I
3 Credits
An introduction to the materials, concepts, and techniques of opaque painting (oil and/or acrylic) with an emphasis on the use of color, composition, and other perceptual concerns.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.
OAN Approved: OAH048.

ART-2060 Painting II
3 Credits
Exploration of more advanced painting problems utilizing various subjects and styles. Emphasis placed on personal expression and independent problem-solving skills. Focus on craftsmanship and a high level of proficiency with opaque painting media. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-2050 Painting I, or departmental approval: comparable skills.

ART-2070 Watercolor
3 Credits
Introduction and exploration of transparent watercolor as painting technique. Investigates various styles of painting. May be repeated up to 9 credits, only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.

ART-2080 Portrait Drawing and Painting
3 Credits
In-depth study of drawing and painting portraits from live models. The focus will be on facial anatomy and relating the model to three-dimensional environment. The psychological aspects of portraiture will also be explored. Various media will be utilized throughout the course. May be repeated up to 9 credits; only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.

ART-2090 Sculpture I
3 Credits
Emphasis on independent concept development, meaningful connection to material choices, and contemporary concerns in sculpture, including social and environmental issues. Projects may vary with classroom facilities and resources at each campus. (To advance skills, it may be repeated for up to 9 credits, 6 of which are applicable to CCC degree requirements.)
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1100 Sculpture I or departmental approval: comparable skills.

ART-2152 2D Animation
3 Credits
Introduction to 2D animation, including the history and principles of animation as well as a hands-on technical and aesthetic exploration of the media. A variety of digital and manual techniques from character animation to motion graphics are covered using industry standard tools. Direct applications for web, game design, illustration, graphic design, photography and art are examined. Planning and storytelling via the integration of imagery, text, and sound are emphasized. May be repeated for up to 6 credits; only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation or ART-1081 2D Design and Color or departmental approval: comparable skills.

ART-2180 Sculpture II
3 Credits
Emphasis on independent concept development, meaningful connection to material choices, and contemporary concerns in sculpture, including social and environmental issues. Projects may vary with classroom facilities and resources at each campus. (To advance skills, it may be repeated for up to 9 credits, 6 of which are applicable to CCC degree requirements.)
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1100 Sculpture I or departmental approval: comparable skills.

ART-2190 Ceramics II
3 Credits
Focus on wheel throwing skills and advanced hand building techniques in the creation of three-dimensional forms. Formal and functional design. Introduction to kiln firing and ceramic materials in clay and glaze formulation. (To advance skills, course may be repeated for up to 9 credits, 6 of which are applicable to CCC degree requirements.)
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1700 Ceramics I, or departmental approval: comparable skills.

ART-2210 Printmaking I
3 Credits
An introduction to various aspects of printmaking and graphic composition. Techniques include relief printing (wood/linocut), intaglio (etching, dry point, aquatint), collagraphy, and monotype.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval.
OAN Approved: OAH0049.

ART-2220 Printmaking II
3 Credits
A continuation of advanced printmaking techniques such as intaglio, relief, lithography, serigraphy, collagraphy, and/or monoprints. May be repeated for up to 9 credits, 3 of which are applicable to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-2210 Printmaking I, or departmental approval: comparable skills.
ART-2300 Art Therapy III: Approaches and Techniques
3 Credits
An examination of various techniques used by therapists. Studio exposure work is used as a tool to understand and cultivate the discipline of self-awareness. Students must participate in site visits for observation and interviewing of a professional art therapist. Note: Certification at the professional level in Art Therapy requires appropriate work experience and a master’s degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets AATA (American Art Therapy Association) prerequisite requirements for entering a master’s program in Art Therapy.

Prerequisite(s): ART-1610 Art Therapy II: Methods and Medias; and PSY-1010 General Psychology or PSY-101H Honors General Psychology, and PSY-2050 Psychology of Personality.

ART-2310 Art Therapy Studio: Basic Therapeutic Skills
3 Credits
Provides a directed self-study process and fosters development of professional helping skills through observation, participation and research. Attention given to creating a safe, therapeutic environment involving the emotional, physical, spiritual and cultural aspects of clients. Covers theoretical and clinical dimensions of art therapy and interventions. Provides additional experience with various art therapy media. Note: Professional level certification in Art Therapy requires appropriate work experience and a master’s degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets American Art Therapy Association prerequisite requirements for entering a Master’s program in Art Therapy.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ART-1610 Art Therapy II: Methods and Medias; and PSY-1010 General Psychology or PSY-101H Honors General Psychology, and PSY-2050 Psychology of Personality.

ART-2790 Portfolio Development
1 Credit
Covers development and presentation of an art portfolio. Defines intent and focus of portfolio. Emphasize basic visual language skills and individual creative strengths. Students edit and modify work where required. Add new pieces that meet expected portfolio standards for transfer and job market. The course will include: selection and development of best format for presentation of their work, resume formats and development a self-promotional piece.

Laboratory: 3 hours
Prerequisite(s): Sufficient quantity of successfully completed work for portfolio inclusion.

ART-279H Sophomore Honors Contract in Art
1 Credit
Sophomore Honors Contract in Art complements and exceeds requirements and expected outcomes for an existing Art 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).

Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Art, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

ART-2820 Independent Advanced Study/Research in Art
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ART-282H Advanced Honors Independent Study in Art
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Art, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

ART-282S Independent Advanced Laboratory Study/Research in Art
1-3 Credits
Independent two-hour lab per credit. Directed advanced individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Laboratory: 2-6 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ART-282T Independent Advanced Laboratory Study/Research in Art
1-3 Credits
Independent three-hour lab per credit. Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Laboratory: 3-9 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
**AutoCAD (ZCAD)**

ZCAD-1002 AutoCAD for Professionals - 3D Basics  
2.4 CEU's

This course is designed for business and industry professionals (architects, engineers, designers, technicians) who have a basic knowledge of AutoCAD and want to learn the three-dimensional capabilities of the software. Learn how to create user-coordinate systems, gain an understanding of 3D viewing commands, create and edit solid models, and generate 2D drawings from your solid models. An introduction to rendering is also included.  

Contact hours: 24  
Not financial aid eligible.

ZCAD-1011 SolidWorks Level 1  
3.2 CEU's

Get to market faster with SolidWorks®, one of the leading solid modeling packages. If you know Microsoft Windows, you're well on your way to designing with SolidWorks. Familiar Windows functions like drag-and-drop, point-and-click and cut-and-paste allow you to become productive within hours, proficient within weeks. This introductory course covers the creation and editing of parametric solid models and assemblies using this exciting software.  

Contact hours: 32  
Not financial aid eligible.

ZCAD-1015 SolidWorks Level 2  
2.4 CEU's

Take it to the next level and master advanced topics that will make you more productive with SolidWorks®. This course covers part configurations, design tables, assembly configurations, advanced filleting, advanced lofts and importing/exporting files.  

Contact hours: 24  
Not financial aid eligible.

ZCAD-1039 Revit Architecture Fundamentals  
3.2 CEU's

Modern architectural design utilizes Building Information Modeling (BIM) software to design and maintain buildings throughout their entire life cycle. Learn how to use Revit to create and modify 3D architectural projects and generate construction drawings.  

Contact hours: 32  
Not financial aid eligible.

ZCAD-1046 AutoCAD for Professionals  
3.6 CEU's

This course is designed for business and industry professionals (architects, engineers, designers, technicians) who would like to master AutoCAD. The course covers the introductory 2D capabilities required for creating, editing and printing detailed production drawings.  

Contact hours: 36  
Not financial aid eligible.

**Automotive Technology (AUTO)**

AUTO-1050 Numerical Applications in Automotive Service  
3 Credits

Use of numerical concepts and principles in interpreting, assessing, and determining the need for automotive repair. Whole numbers, decimals, fractions, integers, graphs, ratios and percentages used to evaluate engine, electrical, chassis and HVAC system operation. Customary and metric conversions, reading automotive measuring devices and auto service repair order computations reviewed.  

Lecture: 3 hours  
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate math placement score; or departmental approval.

AUTO-1101 Introduction to Automotive Service Procedures  
3 Credits

Designed to provide introduction to several basic service procedures required of the person beginning work in automobile service center. Oil change, transmission service, tire service, fasteners cooling system service, safety inspection, battery testing will be some of the tasks demonstrated and/or practiced after introduction to shop safety and safe operation of automobile equipment and hand tools.  

Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None. CTAN Approved: CTAUT005.

AUTO-1300 Automotive Engines  
3 Credits

Operation of internal combustion gasoline engine including engine fundamentals and removal, lubrication and cooling system operation, and cylinder head and engine block diagnosis. Engine disassembly, measurements for correctness, proper assembly techniques, and gasket and sealing information included.  

Lecture: 1 hour. Laboratory: 6 hours  
Prerequisite(s): None.

AUTO-1400 Automotive Alignment, Steering and Suspension  
3 Credits

Theory and principles of automotive alignment geometry and automotive steering and suspension systems. Laboratory competencies integrate diagnosis and repair of these systems through use of special tools and alignment equipment.  

Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): None.

AUTO-1450 Automotive Braking Systems  
3 Credits

Designed to provide student with foundation in theory and operation of automotive braking systems. Includes hydraulic brake principles, machining operations, and troubleshooting and repair of disc and drum brake assemblies. Operation and diagnosis of anti-lock braking systems included.  

Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): None.
AUTO-1502 Automotive Electrical Fundamentals
3 Credits
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): None.

AUTO-1510 Automotive Electrical Systems
3 Credits
Integrates operational principles and diagnostic skills needed to repair various vehicle electrical systems utilizing electrical concepts and schematics. Charging and starting systems, including security systems, supplemental restraint (SRS), instrumentation, and body computers and related accessories are explained and analyzed. Laboratory practice provides student applied knowledge for troubleshooting these systems.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): AUTO-1502 Automotive Electrical Fundamentals; or departmental approval.

AUTO-1820 Independent Study in Automotive Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

AUTO-1940 Automotive Field Experience I
1 Credit
Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.
Other Required Hours: Field experience: 180 clock hours per semester.
Prerequisite(s): Departmental approval; job site approval.

AUTO-1950 Automotive Field Experience II
1 Credit
Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.
Other Required Hours: Field experience: 180 clock hours per semester.
Prerequisite(s): Departmental approval; job site approval.

AUTO-1960 Automotive Field Experience III
1 Credit
Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.
Other Required Hours: Field experience: 180 clock hours per semester.
Prerequisite(s): Departmental approval; job site approval.

AUTO-2300 Automatic Transmissions
3 Credits
Operation of automotive transmissions and transaxles. Emphasis on knowledge and skills needed to properly diagnose transmission faults related to hydraulic, mechanical, and electrical systems that effect transmission operation. Specifics covered in this course include transmission operation, diagnostic, and service procedures, hydraulic fundamentals, controls and planetary gear train theory. Maintenance, diagnosis, inspection, overhaul proper assembly techniques of transmissions are included.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): AUTO-1502 Automotive Electrical Fundamentals.

AUTO-2310 Manual Transmission and Drivetrain
3 Credits
This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, drivshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains. Laboratory skills emphasize diagnosis, troubleshooting, and repair.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): AUTO-1300 Automotive Engines; or departmental approval.

AUTO-2350 Automotive HVAC
2 Credits
This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis and repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to diagnose and repair vehicle climate control systems.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): AUTO-1502 Automotive Electrical Fundamentals; or departmental approval: industry-related experience.

AUTO-2400 Engine Performance
3 Credits
Fundamentals of proper engine performance. Ignition, electrical, engine mechanical, and fuel and emission system principles of operation, related driveability symptoms, and proper testing to verify cause will be explored. DVOM, scan tool and special tools used throughout course. Emphasis on operational concepts and individual component testing.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): AUTO-1300 Automotive Engines and AUTO-1502 Automotive Electrical Fundamentals; or departmental approval: industry-related experience.

AUTO-2450 Automotive Electronic Engine Controls
3 Credits
Operation and advanced diagnosis of modern automobile ignition, electrical, engine mechanical, and fuel and emission control systems which are computer controlled. Explore methods of analyzing and locating engine performance malfunctions using deductive methodology and diagnostic test equipment. Emphasis on OBD II software, in-depth scan tool usage, five-gas analysis, and digital scope signal analysis of components and computer networks.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): AUTO-2400 Engine Performance; or departmental approval: industry related experience.
AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP
3 Credits
Covers diagnosing electrical concerns on General Motors vehicles. Includes instructor led content along with hands-on activities. Participants will have the opportunity to learn about the different testing equipment, demonstrate how to use the equipment to run a variety of tests and learn how to develop an action plan to aid them in thorough diagnosis. Encourages problem-based learning. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): AUTO-1510 Automotive Electrical Systems; or departmental approval: industry-related experience.

AUTO-2650 Hybrid Vehicle Safety and Service
3 Credits
Working safely with hybrid vehicles is reviewed and practiced. Advantages and disadvantages of various battery types, hybrid designs and electric motors are examined. Hands-on course utilizes scan tools and diagnostic process to analyze and troubleshoot hybrid vehicles.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): AUTO-1501 Automotive Electrical Fundamentals, or departmental approval.

AUTO-2701 Automotive Service Operations
3 Credits
Staffing and personal selection, customer relations, consumer laws, expense control, repair facility site selection, hiring/firing legal issues, advertising and other business concerns dealing with an automotive repair facility are examined. Daily operations, business analysis and marketing for an automotive garage are explored with auto service computer software.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

AUTO-2820 Independent Advanced Study in Automotive Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

AUTO-2830 Cooperative Field Experience
1-3 Credits
Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirements for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of 9 credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): Formal application into the Cooperative Education Program.

AUTO-2940 Automotive Field Experience IV
1 Credit
Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.
Other Required Hours: Field experience: 180 clock hours per semester.
Prerequisite(s): Departmental approval: job site approval.

AUTO-2950 Automotive Field Experience V
1 Credit
Capstone Course in Automotive Technology. Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.
Other Required Hours: Field experience: 180 clock hours per semester.
Prerequisite(s): Departmental approval: job site approval.

Biology (BIO)

BIO-1040 The Cell and DNA
3 Credits
Designed for non-science majors. Considers cell structure, function, and metabolism, cell division, DNA structure and function, Mendelian and molecular genetics. Scientific method and reasoning are emphasized. To fulfill laboratory science requirements, students should enroll in the related laboratory course.
Lecture: 3 hours
Prerequisite(s): Concurrent enrollment in BIO-1040 The Cell and DNA is strongly recommended.
OAN Approved: TMNS.

BIO-104L The Cell and DNA Laboratory
1 Credit
Laboratory course examines the scientific method, cell structure and function, cell division, DNA structure and function, and Mendelian and molecular genetics. Includes microscope work, models, and various experiments designed to illustrate concepts covered in the lecture course.
Laboratory: 3 hours
Prerequisite(s): Concurrent enrollment in BIO-1040 The Cell and DNA is strongly recommended.
OAN Approved: TMNS.

BIO-1050 Human Biology
3 Credits
Designed for non-science majors. Considers concept of homeostasis of the human body. Basic structure and function of body systems and diseases of these systems studied. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): Concurrent enrollment in BIO-1050 Human Biology is strongly recommended.
OAN Approved: TMNS.

BIO-105L Human Biology Laboratory
1 Credit
Laboratory course designed for non-science majors that examines the microscopic and gross structure and function of the human body. Includes microscope work, models, animal dissections, and various experiments designed to illustrate concepts related to basic human biology and to complement topics covered in BIO-1050 Lecture course.
Laboratory: 3 hours
Prerequisite(s): Concurrent enrollment in BIO-1050 Human Biology is strongly recommended.
OAN Approved: TMNS.
BIO-1060 Environment, Ecology, and Evolution
3 Credits
Designed for non-science majors. Questions about the natural world are explored through an introduction to the principles of evolution and ecology, including how populations change over time and how organisms interact with each other and the environment. Topics include scientific inquiry; nature of science; evolutionary processes; diversity of life; population, community, and ecosystem ecology; human impacts on the environment; environmental stewardship; and regional environmental concerns.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMNS.

BIO-106L Environment, Ecology, & Evolution Laboratory
1 Credit
Designed for non-science majors. Questions about the natural world are explored through hands-on laboratory and field activities focusing on evolution, ecology, and environmental science. Scientific inquiry is used to investigate how populations change over time; the diversity of life; community ecology; ecosystem ecology; and human impacts on the environment.
Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test. Concurrent enrollment in BIO-1060 Environment, Ecology, and Evolution is strongly recommended.
OAN Approved: TMNS.

BIO-1100 Introduction to Biological Chemistry
3 Credits
Basic principles of inorganic chemistry, organic chemistry and biochemistry necessary for study of human physiology. Physiological applications of the chemical processes of cellular transport, communication and metabolism emphasized. Laboratory includes use of metric system, basic chemistry techniques and physiological applications.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math placement test.
OAN Approved: TMNS.

BIO-1121 Anatomy and Physiology for Diagnostic Medical Imaging
4 Credits
Basic understanding of cells, tissues, organs and body systems. Examination of their function based on their relationship to diagnostic medical imaging examinations. Particular emphasis placed on the skeletal system and the radiographic appearance of anatomical structures.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MA-1020 Medical Terminology I or concurrent enrollment.

BIO-1230 Anatomy and Physiology of the Eye
4 Credits
Detailed examination of the anatomy and physiology of the eye. Emphasis on ocular terminology, structure, function, movement, disorders, diseases, lens physics, and visual testing/analysis. Study of eye model and preserved eye dissection.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval: admission to Optical Technology program.

BIO-1300 Horticultural Botany
3 Credits
[This course is crosslisted as PST-1300. Credit can only be earned once for either course.] Plant structure and diversity is examined through the study of the cells, tissues, and organs of plants, as well as their life cycles and reproduction. The physiology of plants is explored through the study of plant transport, nutrients, hormones, growth, and metabolism. Additionally, horticulturally significant bacteria, protists, and fungi are examined.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BIO-1410 Anatomy & Physiology of Domestic Animals I
4 Credits
Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, porcine and domestic fowl species. Focuses on cellular biology, tissues and membranes, and the integumentary, skeletal, muscular, nervous, endocrine, and circulatory systems with emphasis on species variations. Laboratory includes preserved and fresh specimens, models, microscopic observations, and audio/visual aids.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): BIO-1100 Introduction to Biological Chemistry or concurrent enrollment; or CHEM-1010 Introduction to Inorganic Chemistry, or concurrent enrollment, or departmental approval: comparable knowledge or skills.
OAN Approved: TMNS.

BIO-1420 Anatomy & Physiology of Domestic Animals II
3 Credits
Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, avian and porcine species. Focuses on lymphatic, digestive, respiratory, urinary and reproductive systems. Immunology, pregnancy, lactation, blood and genetics considered. Laboratory includes preserved and fresh specimens, models, microscopic observations, demonstrations and audio/visual aids.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BIO-1410 Anatomy and Physiology of Domestic Animals I.
OAN Approved: TMNS.

BIO-1500 Principles of Biology I
4 Credits
Designed for science majors. The molecular and cellular basis of life is explored through an introduction to cell biology, molecular biology, genetics, and evolution in both lecture and laboratory settings. Topics include scientific inquiry; chemical aspects of life; cell structure and function; energy and metabolism; cell division; molecular genetics; inheritance; population genetics; mechanisms of evolution; and evidence for evolution.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test; and MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
OAN Approved: TMNS, OSC003, and OSC024 (1 of 2 courses, both must be taken).
BIO-150H Honors Principles of Biology I
4 Credits
Honors course designed for science majors with exploration of the molecular and cellular basis of life through an introduction to cell biology, molecular biology, genetics and evolution with a strong focus on inquiry-based learning as the basis of scholarly research. Emphasis on evolution as the unifying theory in biology.

Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I with grade of "B" or higher; or ENG-101H Honors College Composition I; and MATH-0955 Beginning Algebra or appropriate Math Placement score.
OAN Approved: TMNS, OSC003, and OSC024 (1 of 2 courses, both must be taken).

BIO-1510 Principles of Biology II
4 Credits
Designed for science majors. The diversity of life, animals, plants, and ecology are explored in both lecture and laboratory settings. Topics include the origin and evolution of life, systematics, classification, structural and functional variations in animals and plants, populations, communities, and ecosystems.

Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): BIO-1500 Principles of Biology I, or BIO-150H Honors Principles of Biology I; or departmental approval: equivalent knowledge or skills.
OAN Approved: TMNS, OSC004, and OSC024 (2 of 2 courses, both must be taken).

BIO-151H Honors Principles of Biology II
4 Credits
Honors course designed for science majors. The diversity of life, animals, plants, and ecology are explored in both lecture and laboratory settings. Topics include the origin and evolution of life, systematics, classifications, structural and functional variations in animals and plants, populations, communities, and ecosystems. Emphasis on evolution as the unifying theory in biology. Strong focus on inquiry-based learning.

Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): BIO-150H Honors Principles of Biology I or BIO-1500 Principles of Biology I.
OAN Approved: OSC024 (Course 2 of 2, both must be taken).

BIO-179H Honors Contract in Biology
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).

Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

BIO-1812 Special Topics in Insect Biology, Behavior, and their Impact on Humans
3 Credits
Designed for non-science majors. Considers the use of insects as model organisms to direct learning of biological concepts. Discusses insect form, function, and evolution, as well as the affect insects have had on human development, politics, and scientific thought. Social and economic development through their roles as vectors of human diseases, food and fiber production, nutrition, medical/genetic research, and ethical issues surrounding pesticide use and genetically modified organisms are also explored.

Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BIO-1820 Independent Study/Research in Biology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

BIO-182H Honors Independent Study in Biology
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate English placement score, and must have earned an A or B in at least 3 honors courses.

BIO-2020 Tropical Biology
4 Credits
Introduction to biology of the tropics. Topics include major tropical biomes, biodiversity, conservation, sustainability, and consequences of human impact on the tropics. Studies include identification of flora and fauna and adaptations of tropical organisms. In addition to on-campus lecture/lab during an academic term, students are required to participate and travel to a tropical location for a real-world experience. A portion of the laboratory hours will be completed during the mandatory field trip to a tropical ecosystem. Field trip requires additional costs.

Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval and any 1000 level science course.

BIO-2060 Principles of Genetics
3 Credits
Introductory level course. Topics include: structure and function of DNA, patterns of inheritance, gene expression and mutations, population genetics and gene technology.

Lecture: 3 hours
Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-1420 Anatomy and Physiology of Domestic Animals II, or BIO-2341 Anatomy and Physiology, or BIO-1500 Principles of Biology I.
OAN Approved: TMNS.
BIO-2070 Techniques in Molecular Genetics
3 Credits
Advanced study of structure and function of DNA with emphasis on laboratory techniques used in molecular biology. Laboratory practices and applications of sterile techniques, gel electrophoresis, DNA isolation, RFLP analysis, plasmids, and recombinant DNA. Protein structure and methods of protein purification explored.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-2341 Anatomy and Physiology II, or BIO-1500 Principles of Biology I.

BIO-2100 Biology of Aging
3 Credits
Exploration of current biological theories of aging with emphasis on humans. Fundamental concepts of cell biology and physiology will be used to study extrinsic and intrinsic factors of aging. Topics will include normal age related changes and pathology in body systems, senescence, genetics, life expectancy, and improving longevity.
Lecture: 3 hours
Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-1050 Human Biology, or BIO-1500 Principles of Biology I, or BIO-2331 Anatomy and Physiology I.

BIO-2150 Environmental Science
3 Credits
Fundamental ecological concepts and their application to environmental issues emphasizing the impact of human activity on the biosphere. Topics include natural resources, air, water and land pollution, energy, and populations.
Lecture: 3 hours
Prerequisite(s): BIO-1050 Environment, Ecology and Evolution; or BIO-1510 Principles of Biology II.
OAN Approved: TMNS.

BIO-2200 Radiobiology
2 Credits
Theories of the biological effects of ionizing radiation, quantities and units of measurement, proper protective measures for patient and personnel, effective dose equivalents radiation absorption processes and shielding, exposure monitoring devices.
Lecture: 2 hours
Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, and departmental approval: admission to Radiography Program.

BIO-2331 Anatomy and Physiology I
4 Credits
Study of structure and function of human body. Focus on fundamental concepts of cellular structure, tissues, organs, and systems. Considers structure, function, and terminology of skeletal, muscular, integumentary, nervous and endocrine systems. Laboratory experiences include demonstrations, microscopic observations, anatomical models, and videos related to topics.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): Sufficient score on Biology Placement Test or BIO-1100 Introduction to Biological Chemistry; or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry; or BIO-1500 Principles of Biology.

BIO-2341 Anatomy and Physiology II
4 Credits
Structure and function of cells, tissues, and organs of the human cardiovascular, lymphatic/immune, respiratory, urinary, digestive, and reproductive systems. Cellular division, embryological and fetal development, classical genetics and genetic technology considered. Laboratory may include demonstrations, microscopic observations, anatomical models, and videos.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I.

BIO-2500 Microbiology
4 Credits
The diversity of the microbial world is explored through subjects including microbial ecology and evolution, structure and function of microorganisms, metabolism and genetics, control of microorganisms, and host-microbe interactions.
Lecture: 3 hours
Prerequisite(s): BIO-1410 Anatomy and Physiology of Domestic Animals I; or BIO-2331 Anatomy and Physiology I; or BIO-1500 Principles of Biology I; or BIO-1050 Human Biology and BIO-105L Human Biology Laboratory and BIO-1100 Introduction to Biological Chemistry, or departmental approval: comparable knowledge or skills.
OAN Approved: TMNS.

BIO-2600 Pathophysiology
3 Credits
General mechanisms of disease processes and health problems including inflammation, degeneration, immunity, congenital, hereditary, neoplasia as well as diseases caused by deficiencies or excesses. The most commonly occurring diseases of body systems are surveyed.
Lecture: 3 hours
Prerequisite(s): BIO-2341 Anatomy and Physiology II.
OAN Approved: OHL019.

BIO-2820 Independent Advanced Study/Research in Biology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. (See Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

BIO-282H Advanced Honors Independent Study in Biology
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate English placement score, and must have earned an A or B in at least 3 honors courses.
BIO-282S Independent Advanced Laboratory Study/Research in Biology
1-3 Credits
Independent two-hour lab per credit. Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Laboratory: 2-6 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Business Administration (BADM)

BADM-1020 Introduction to Business
3 Credits
Introductions to the functions of business in the global marketplace, including comparison of the various forms of business domestically and globally, constructing personnel management and leadership skills, and identifying financial, marketing and management skills in the business environment.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1040 Principles & Practices of Customer Service
3 Credits
How to create customer satisfaction and loyalty: developing and using questions, building rapport, using conflict resolution techniques, making basic business calculations and using business decision-making model to convey information and solve customer problems.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1050 Professional Success Strategy
3 Credits
Apply knowledge of the corporate environment, diversity, ethics, teamwork and professionalism to manage interpersonal challenges and maximize relationships. Facilitate a meeting, set goals, use a time management system and effective verbal and written communications.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1070 Introduction to Project Management
3 Credits
Application of project management process, principles, and techniques that can be employed when implementing a project. Emphasis on project startup and definition, project planning and design, project management and project monitoring and evaluation methods.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1080 Social Media Marketing
3 Credits
[This course is crosslisted as MARK-1080. Credit can only be earned once for either course.] Examines how marketers use verbal and visual content to convey value, build brands, and connect with customers over different social media platforms. Introduction to the most popular platforms, analysis of social media campaigns, and projects to create a social media marketing campaign.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BADM-1090 Social Media Content Strategies
3 Credits
[This course is crosslisted as MARK-1090. Credit can only be earned once for either course.] Generate targeted digital content messages linked to marketing objectives and brand voice. This course focuses on optimizing social media platforms to market to and communicate with customers creating engagement and increasing brand awareness.
Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing, or MARK-1080 Social Media Marketing.

BADM-1122 Principles of Management and Organizational Behavior
3 Credits
Introduction to management and organizational behavior principles, concepts, and skills employed in operation of a business organization. Emphasis on the planning, organizing, leading, controlling and decision making. Also includes organizational structures, organizational communication, and organizational performance.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business or departmental approval; previous coursework and/or experience.

BADM-1210 Labor-Management Relations
3 Credits
Historical, legal, and structural environments which influence management-labor relations. Rights and responsibilities of unions and management; negotiation and administration of labor agreement; results of labor relation process and collective bargaining issues. Review and application of the labor relations process.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1301 Small Business Management
3 Credits
Introduction to entrepreneurial concepts of business management, including components needed to develop an effective business plan and/or skills needed to effectively manage a small business. The course includes the principles needed to operate a small business and is also beneficiary for those who desire to upgrade their skills in business management.
Lecture: 3 hours
Prerequisite(s): None.

BADM-1460 Workers’ Compensation Law
3 Credits
(Cross-listed with PL-1460. Credit can only be earned once for either course.) Study of Ohio Bureau of Workers’ Compensation and Industrial Commission of Ohio, with emphasis on claims and procedures involving injured workers and benefits available. Preparation of injured worker forms and employer forms. Practice in calculating compensation for injuries, determining and preparing employer defenses, and determining and creating both injured worker and employer appeals.
Lecture: 3 hours
Prerequisite(s): None.
BADM-1813 Special Topics: Introduction to Insurance Industry
3 Credits
Study of risk management and loss-control tools primarily focused on insurance as it relates to business and the individual. The course will introduce students to risk management and insurance terms and definitions.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business or BADM-1122 Principles of Management and Organizational Behavior or departmental approval.

BADM-1820 Independent Study/Research in Business Administration
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

BADM-2010 Business Communications
3 Credits
Study of oral, written and electronic business communication theory. Includes business correspondence writing, job preparation, research techniques, and formal and informal report preparation.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment. OAN Approved: OBU005.

BADM-201H Honors Business Communications
3 Credits
Critical analysis, application and study of oral, written and electronic business communication theory. Includes business correspondence writing, job preparation, research techniques, and formal and informal report preparation.
Lecture: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I, or concurrent enrollment; or ENG-1010 College Composition I with a grade of "B" or higher. OAN Approved: OBU005.

BADM-2080 Social Media Analytics
3 Credits
This course is crosslisted as MARK-2080. Credit can only be earned once for either course. This course is designed to build students social media marketing skills by utilizing local businesses to create a hands-on experience working on a social media marketing plan. Activities include, social media listening and auditing, search engine optimization (SEO) evaluation, content creation, analytics and planning.
Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing or MARK-1080 Social Media Marketing.

BADM-2090 Digital Marketing Design
3 Credits
This course is crosslisted as MARK-2090. Credit can only be earned once for either course. This course is designed to build students social media marketing skills by utilizing local businesses to create a hands-on experience working on a social media marketing plan. Activities include, social media listening and auditing, search engine optimization (SEO) evaluation, content creation, analytics and planning.
Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing or MARK-1080 Social Media Marketing.

BADM-2110 Production/Operations Management
3 Credits
Overview of manufacturing and service operations covering such topics as: flow, bottleneck, balance, quality, workplace contribution, planning, materials requirement planning, inventory management procurement, logistics, floor shop control, just-in-time (JIT), capacity changes, technology and design, vertical integration, and operation strategy.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business; or BADM-2161 Introduction to Purchasing and Supply Management.

BADM-2120 Logistics Management
3 Credits
Logistics Management is the study of planning, executing, and controlling the flow and storage of goods, services, and information throughout the supply chain; from the point of origin to the point of consumption for the purpose of meeting the customer's needs. Topics covered will include warehousing, transportation, inventory, materials handling, operations, sustainability, carbon footprints, reverse logistics, and supply management.
Lecture: 3 hours
Prerequisite(s): BADM-2161 Introduction to Purchasing and Supply Management or concurrent enrollment, or departmental approval: comparable knowledge and skill.

BADM-2151 Business Law
3 Credits
Study of legal process as it relates to society, government, business and the individual; the law as it relates to legal system, ethics and social responsibility, contracts, sales, agency, business organizations, debtor-creditor relations, and governmental regulation of business.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business, or BADM-1122 Principles of Management and Organizational Behavior.

BADM-2161 Introduction to Purchasing and Supply Management
3 Credits
Analysis of purchasing’s role in industrial and service organizations. Description of purchasing progression to supply management, purchasing and supplier relationships, purchasing’s role in new product development, specifications and standardization, quality, supplier selection, make or buy, outsourcing, pricing and cost analysis, total cost of ownership, value engineering and value analysis, and legal and ethical aspects of purchasing.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business or concurrent enrollment.
BADM-2180 Purchasing Management
3 Credits
Capstone course in Purchasing/Supply Management program. Focuses on the purchasing function of the supply management process, including functions of planning, organizing, directing, motivating, and controlling the work and purchasing staff to help achieve organizational objectives. Purchasing systems and documentation discussed.
Lecture: 3 hours
Prerequisite(s): BADM-2161 Introduction to Purchasing and Supply Management, or departmental approval.

BADM-2240 Negotiations
3 Credits
Negotiations is the study of the principles, techniques, and skills needed in successful negotiations. The course focuses on interpersonal negotiations and negotiations between buyers and sellers; including managing cultural complexities.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business, or BADM-2161 Introduction to Purchasing and Supply Management.

BADM-2330 Human Resource Management
3 Credits
Overview of human resource function consisting of recruitment, staffing, training, development, compensation, and evaluation. Employment practices including legal and ethical issues.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BADM-2340 Human Resources Law and Application
3 Credits
Analyze basic employment law necessary to develop practical understanding of legal framework critical to human resource function and effectiveness. Employment law and application expanded in employment relationships and areas critical to human resource function such as staffing, Equal Employment Opportunity (EEO), Affirmative Action, American with Disabilities Act (ADA), Family and Medical Leave Act (FMLA), benefits, and safety. Explores impact of employment law, including current developments to human resource function and business.
Lecture: 3 hours
Prerequisite(s): BADM-2330 Human Resource Management, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BADM-2390 Advanced Human Resources Practices
3 Credits
Capstone course in Human Resource Management program. Explores application of human resource (HR) concepts and practices in organization context. Cases and scenarios advance learning through systems and operational application of HR competencies. HR planning, staffing, benefits, Equal Employment Opportunity (EEO), safety, performance management, compensation, and change management will be explored in light of advancing organizational effectiveness. Contemporary human resource issues confronting business also analyzed.
Lecture: 3 hours
Prerequisite(s): BADM-2330 Human Resource Management, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

BADM-2450 New Business Development
5 Credits
Lecture: 3 hours. Laboratory: 4 hours
Prerequisite(s): BADM-1301 Small Business Management, or departmental approval: comparable knowledge or skills.

BADM-2501 Business Strategies
3 Credits
Capstone course for Accounting, Business Management (basic program) and Marketing degrees. Critical analysis and application of business, marketing, accounting and financial concepts to determine alternatives and best course of action to maximize organizational performance.
Lecture: 3 hours
Prerequisite(s): Departmental approval: 20 credit hours of any combination of business administration, accounting or marketing courses.

BADM-2601 Global Commerce and Communication
3 Credits
Overview of global commerce with examination of foreign environments (economic, cultural, and legal) in which global companies operate. Study of the history of global trade. Review of documents and procedures required to import and export goods; international transportation modes; and payments and collection. Review and application of cross-cultural communication theory and practice.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business or concurrent enrollment.

BADM-2760 Global Trade and Finance
3 Credits
Basic concepts and practices of international trade finance, including the financial environment, nature of international transactions and the flow of finance between countries resulting from global trade. Exchange rates, risks, and risk management options are analyzed, and the selection of payment terms and resulting impact upon profitability and the export process defined.
Lecture: 3 hours
Prerequisite(s): BADM-2601 Global Commerce and Communication or concurrent enrollment.

BADM-2780 Global Marketing and Distribution
3 Credits
Overview and application of global marketing theory and strategy including market selection, cross-cultural development and adaptation of product and promotion, pricing techniques, and international market research options. Export operations and global distribution selection and management.
Lecture: 3 hours
Prerequisite(s): BADM-2601 Global Commerce and Communication or concurrent enrollment.
BADM-2790 International Business Strategy and Application  
4 Credits  
Capstone course in International Business. Application of knowledge and skills obtained in international marketing, trade documentation, transportation, finance and cultural awareness to real-world international business scenarios. Includes in-class, comprehensive analytical/decision-making case studies.  
Lecture: 4 hours  
Prerequisite(s): BADM-2601 Global Commerce and Communication, and departmental approval.

BADM-279H Honors Contract in Business Administration  
1 Credit  
Honors Contract complements and exceeds the requirements and objectives in-depth or scope for an existing BADM-2000 level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of three credits of different topics.  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: Must be taken with a 2000-level Business Administration course whose faculty mentor approves the Honors Contract.

BADM-2820 Independent Advanced Study in Business Administration  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

BADM-282H Honors Independent Advanced Study in Business Administration  
1-3 Credits  
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

BADM-2830 Cooperative Field Experience  
1-3 Credits  
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.  
Other Required Hours: 180 clock hours of approved work per credit hour.  
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application

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**Business Math & Tech (ZBMT)**

**ZBMT-1029 Choices for Sustainable Living**  
1 CEU’s  
Choices for Sustainable Living provides participants a powerful opportunity to explore sustainability more deeply and learn its unique meaning from individual, societal, and global perspectives. Choices for Sustainable Living helps you discover new ways of living and together, make change more possible and powerful. The course also encourages individuals to step up and lead via discussions in a safe inviting environment.  
Contact hours: 10  
Not financial aid eligible.

**ZBMT-1035 Math Bootcamp**  
0 Contact Hours  
Contact hours: 8  
Not financial aid eligible.

**ZBMT-1036 Business Accelerator Pitch**  
0 Contact Hours  
Contact hours: 15  
Not financial aid eligible.

**ZBMT-1037 ALEKS Support Seminar I**  
0 Contact Hours  
Contact hours: 16  
Not financial aid eligible.

**ZBMT-1038 Math Success Seminar**  
0 Contact Hours  
Contact hours: 9  
Not financial aid eligible.

**ZBMT-1039 Math Success Seminar**  
0 Contact Hours  
Contact hours: 10  
Not financial aid eligible.

**ZBMT-1040 Say Yes Math Bridge**  
0 Contact Hours  
Contact hours: 36  
Not financial aid eligible.

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**Business Technology (BT)**

**BT-1000 Keyboarding and Document Formatting**  
2 Credits  
Mastery of alphabetic and numeric keyboard using touch system. Formatting, speed and skill development, and keying basic business documents emphasized. Instruction on microcomputer. Typing placement test available in campus assessment centers for students with prior keyboarding experience.  
Lecture: 1 hour. Laboratory: 2 hours  
Prerequisite(s): None.
BT-1005 Computer Fundamentals
2 Credits
Introduces students to general concepts of computer information systems. Presents terminology and effects of computers in our personal and business lives. Discusses available hardware and software as well as their applications. Includes repetitive hands-on applications in windows, keyboarding, electronic messaging, and word processing using a Windows environment. Introduces research techniques on the Internet and the World Wide Web. Exposes students to applications that promote critical thinking skills which are required to analyze and process information in future information technology courses.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

BT-1201 Word Processing
3 Credits
Basic and intermediate techniques and skills using word processing software applied to practical business applications. Introduction to and formatting of a variety of documents will be taught. Professionalism and soft skills emphasized (e.g., punctuality, getting along with others, etc.)
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BT-1000 Keyboarding and Document Formatting or appropriate score on Typing placement test. Test is available in Campus Assessment Centers.

BT-1241 Information & Records Management
3 Credits
Fundamentals of records, including basic rules for indexing, filing, and records handling from creation to destruction or archival storage. Includes traditional and electronic records management.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1090 Computer Applications or IT-101H Honors Computer Applications.

BT-1600 Specialized Business Document Software
2 Credits
Hands-on implementation of current industry software for specialized business documents including electronic forms and diagrams.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

BT-1700 Business Spreadsheets (Excel)
3 Credits
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1090 Computer Applications, or concurrent enrollment; or IT-109H Computer Applications, or concurrent enrollment; or department approval.

BT-2040 Emerging Workplace Technology
3 Credits
Hands-on utilization of Internet and World Wide Web resources in order to communicate, collaborate, exchange information, conduct research and maintain organization in today's workplace business environment.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1090 Computer Applications or IT-109H Honors Computer Applications; or BADM-1080 Social Media Marketing or concurrent enrollment; or Business Technology departmental approval.

BT-2150 Legal Document Preparation
3 Credits
Preparation of the most common legal documents through word processing. Administrative duties performed in a law firm or legal settings, using accepted industry standards.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1090 Computer Applications, or IT-109H Honors Computer Applications.

BT-2200 Advanced Word Processing
3 Credits
Study and application of advanced text editing features of word processing software as applied to complex business documents. Includes managing data, advanced merge techniques, sort, customizing documents and features, quick parts, styles, protecting and sharing documents, referencing data, forms, complex tables and columns, type math functions, styles, outlines, templates, macros, graphics, and collaboration.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BT-1201 Word Processing, or departmental approval: equivalent proficiency.

BT-2210 Presentation Software
2 Credits
Comprehensive instruction in the major features of presentation software. Students learn to create professional-quality slide presentations. Instruction in design strategy-importing and creating graphics; sound-creating, editing, playing and downloading from the Internet; and research video-capturing software, playing and editing video.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): IT-1090 Computer Applications, or IT-109H Honors Computer Applications, or departmental approval: comparable knowledge or skills.

BT-2270 Desktop Publishing
3 Credits
Hands-on applications using desktop publishing software package. Application of desktop publishing techniques and design concepts, applied to a variety of business publications. Course assumes prior word processing experience/knowledge.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BT-1201 Word Processing or departmental approval: equivalent proficiency.
BT-2300 Business Database Systems (Access)  
3 Credits  
Relational database theory, objects and application design. Database design and implementation techniques. Problem solving strategies using database software for accurate and timely storage, retrieval, manipulation and interpretation of data in a business environment. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1090 Computer Applications or IT-109H Honors Computer Applications.

BT-2370 Office Meeting and Event Coordination  
3 Credits  
Principles and practices for office professionals and public relations practioners who coordinate events, meetings, conferences, or conventions. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1090 Computer Applications, or IT-109H Honors Computer Applications, and BT-2210 Presentation Software, and BT-2270 Desktop Publishing, or concurrent enrollment; and BT-2990 Business Technologies Capstone or concurrent enrollment.

BT-2410 Administrative Management  
3 Credits  
Principles of supervisory skills and management. Emphasis on problem-solving and communications necessary to administer lower and mid-level business functions and management of employees. 
Lecture: 3 hours  
Prerequisite(s): BADM-1020 Introduction to Business.

BT-2500 Web Authoring Tools  
3 Credits  
Introduction to industry standards for web page authoring and editing within an open-source Content Management System (CMS). Topics include principles of web design, file management, formatting, HTML, CSS, image optimization, publishing and managing web pages. Create your own website through a powerful content management publishing platform. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1090 Computer Applications, or IT-109H Honors Computer Applications; or BT-2040 Emerging Workplace Technology; or Business Technology department approval.

BT-2510 Project Management Software  
3 Credits  
Overview of concepts and hands-on activities in a project management software application. Utilize a business scenario incorporating knowledge and skills relating to project scheduling, calendars, tasks, phases, resources, charting, and reporting. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): BADM-1020 Introduction to Business; and IT-1090 Computer Applications or IT-109H Honors Computer Applications; or departmental approval.

BT-2700 Advanced Business Spreadsheets (Excel)  
3 Credits  
Study and implementation of intermediate and advanced spreadsheet application features as applied within business environments. Focus on data analysis tools, collaboration, What-if-analysis, statistical functions, data imports/exports, auditing tools, Business Intelligence tools and macros. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): BT-1700 Business Spreadsheets (Excel)

BT-2830 Cooperative Field Experience  
1-3 Credits  
Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.  
Other Required Hours: 180 clock hours of approved work per credit hour.  
Prerequisite(s): Formal application into the Cooperative Education Program.

BT-2990 Business Technologies Capstone  
3 Credits  
The Capstone course offers students the opportunity to analyze and determine solutions to common workplace business scenarios and problems by implementing skill sets and knowledge learned within their Business Technology coursework. Emphasis on projects, critical thinking skills, teamwork and implementation of business software. 
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): BT-1201 Word Processing, and BT-2210 Presentation Software, and BT-2220 Business Spreadsheet Applications (Excel), and BT-2040 Emerging Workplace Technology, and BT-2300 Business Database Systems (Access), and BT-2410 Administrative Management. CTAN Approved: CTAPS001.

Captioning and Court Reporting (C&CR)  

C&CR-1000 Introduction to Court Reporting  
1 Credit  
Comprehensive survey of field of court reporting. Examination of history of reporting, diversity, equipment needs and technological trends, role of the working reporter within the legal system, corporate environment, and educational system. 
Lecture: 1 hours  
Prerequisite(s): None.

C&CR-1100 Introduction to Voice Captioning  
1 Credit  
Introduction to voice captioning technology and the employment opportunities in this field. 
Lecture: 1 hours  
Prerequisite(s): None.

C&CR-1200 Voicewriting I  
2 Credits  
Instruction in the use of voice-recognition software and technology. Application of such technology enables users to create and edit documents, send email, access the Internet and perform other functions all in a hands-free manner. 
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): C&CR-1100 Introduction to Voice Captioning or concurrent enrollment; or departmental approval.

C&CR-1210 Voicewriting II  
2 Credits  
Study of speech-to-text technology and the use of voice-recognition software while developing increased dictation speed, learn to dictate while listening to dictation, and create various documents including Excel Spreadsheets, and particular legal and medical documents. 
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): C&CR-1200 Voicewriting I.
C&CR-1220 Voicewriting III
4 Credits
Realtime translation of legal proceedings, broadcasts, and other voice-to-text environments, using voice writing captioning-specific software in addition to speech-recognition software.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): C&CR-1210 Voicewriting II.

C&CR-1300 Realtime Theory I
4 Credits
Focus on principles of writing on stenotype machine. On-line instruction of machine shorthand keyboard, arbitraries, phrases, word beginnings and endings. Emphasis on reading, writing, and reporter English skills in preparation for speedbuilding and transcription.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): C&CR-1000 Introduction to Court Reporting or concurrent enrollment; and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

C&CR-1331 Realtime Theory II
2 Credits
This course is a continuation of Realtime Theory. Students will continue study of theory principles.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): C&CR-1300 Realtime Theory I.

C&CR-1335 Realtime Theory III
2 Credits
Continuation of Realtime Theory II. Students will complete study of theory principles.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): C&CR-1331 Realtime Theory II.

C&CR-1341 Realtime Theory IV
2 Credits
Introduces students to the varied styles of writing in the court reporting profession including question and answer, literary, and jury charge format. Instruction in advanced principles of brief forms and phrases in speedbuilding development.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): C&CR-1335 Realtime Theory III.

C&CR-1350 Legal Terminology
3 Credits
Provides students with broad legal vocabulary, useful in any law related field. Emphasis on spelling, definition, and usage of legal terms.
Lecture: 3 hours
Prerequisite(s): None.

C&CR-1401 Speedbuilding and Transcription at 100 WPM
3 Credits
Speedbuilding at 80-100 wpm level. Utilization and expansion of machine-writing theory. Practical procedures on stenotype machine to develop beginning skill levels. Minimum exit speed is 100 wpm.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): C&CR-1341 Realtime Theory IV.

C&CR-1451 Speedbuilding and Transcription at 140 WPM
3 Credits
Speedbuilding at 120-140 wpm level. Utilization and expansion of machine-writing or voicewriting theory. Practical procedures on stenotype machine or utilizing voicewriting technology to develop skill levels on question and answer testimony, jury charge and literary materials. Minimum exit speed is 140 wpm.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): C&CR-1220 Voicewriting III, or concurrent enrollment; or C&CR-1341 Realtime Theory IV or concurrent enrollment.

C&CR-1460 Literary Writing
2 Credits
Focuses on the skills of literary writing using court reporting technology. Emphasizes accuracy and writing development for the judicial, communication access real-time transcription (CART) and captioning environments.
Lecture: 2 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM or concurrent enrollment.

C&CR-1470 Transcript Production for Captioning and Court Reporting
2 Credits
Students will gain knowledge regarding various transcript components for different levels of court proceedings (depositions, statements, arbitrations and so on at municipal, common pleas, and federal levels); demonstrate ability to create title pages, appearance pages, certificate pages as found within a variety of transcripts.
Lecture: 2 hours
Prerequisite(s): None.

C&CR-1601 Court Reporting Technology
4 Credits
Lecture: 2 hours. Laboratory: 6 hours
Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1335 Realtime Theory III.

C&CR-1808 Special Topics: Transcript Production for Court Reporting and Captioning
2 Credits
Focuses on the skills of transcript production using court reporting technology, emphasizing components found at all levels of legal proceedings.
Lecture: 2 hours
Prerequisite(s): None.

C&CR-1810 Special Topics: Realtime Theory III
2 Credits
Continuation of Realtime Theory II. Students will complete study of theory principles.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): C&CR-1331 Realtime Theory II.

C&CR-1819 Special Topics in CVR Test Prep
4 Credits
Combination of speedbuilding techniques, voicewriting techniques, and NVRA test prep.
Lecture: 4 hours
Prerequisite(s): Departmental approval.
C&CR-1820 Independent Study in Captioning and Court Reporting
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

C&CR-182H Honors Independent Study in Captioning and Court Reporting
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have an A or a B in at least 3 honors courses.

C&CR-2200 Medical Terminology for Captioning and Court Reporting
3 Credits
Study of basic medical terminology utilized in the captioning and court reporting profession. Emphasis on definition and usage of the medical terms, and research practices for transcript production.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): C&CR-1341 Realtime Theory IV or concurrent enrollment; or C&CR-1220 VoiceWriting III or concurrent enrollment.

C&CR-2300 Court Procedures
3 Credits
Emphasizes role of official and freelance reporter including communications skills, professional image and business etiquette. Preparation of deposition/court transcripts, marking and handling of exhibits, indexing and storing notes, reporting techniques and ethics, including NCRA Code of Ethics.
Lecture: 3 hours
Prerequisite(s): C&CR-1335 Realtime Theory III.

C&CR-2310 Realtime Writing for Court Reporting and Captioning
2 Credits
Focuses on precision and accuracy of realtime writing skills.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM, or departmental approval.

C&CR-2351 Editing Legal Documents
3 Credits
To develop understanding of parts of speech, sentence structure, proofreading, and management of other people’s spoken words. Rules of punctuation and grammar go beyond the basics and are modified to accommodate ambiguous, clumsy, incongruous, and incorrect English frequently found in legal transcripts.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

C&CR-2360 Proofreading Skill Development
2 Credits
Focuses on applying proofreading and editing skills to legal transcripts, jury charges, and literary materials. Accuracy of editing with regard to grammar. Placement of punctuation marks and spelling.
Lecture: 2 hours
Prerequisite(s): C&CR-2350 Editing Legal Documents.

C&CR-2401 Speedbuilding and Transcription at 180 WPM
3 Credits
Speedbuilding at 160-180 wpm level. Utilization and expansion of machine-writing or voicewriting theory. Practical procedures on stenotype machine or utilizing voicewriting technology to develop skill levels on question and answer testimony, jury charge and literary materials. Minimum exit speed is 180 wpm.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140WPM or C&CR-1210 VoiceWriting II.

C&CR-2451 Speedbuilding and Transcription at 225 WPM
3 Credits
Speedbuilding at speed levels of 225 wpm of question and answer testimony, 200 wpm jury charge material and 180 wpm literary material. Utilization and expansion of machine-writing or voice-writing theory. Practical procedures on stenotype machine or voicewriting software and technology to develop skill levels on question and answer testimony, jury charge and literary materials.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): C&CR-2401 Speedbuilding and Transcription at 180 WPM.

C&CR-2470 Advanced Technology
3 Credits
Capstone course in Captioning and Court Reporting. Students apply technology and format applications to produce transcripts in preparation for initial employment. Concentrated, production-oriented class with employment related projects, deposition projects, and realtime projects.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM, and C&CR-1601 Court Reporting Technology, or C&CR-1220 Voicewriting III.

C&CR-2480 Using Captioning Technology
3 Credits
Students apply steno or voice technology and format applications to produce captioning simulations in preparation for initial employment. A concentrated, production-oriented class with employment-related projects from the captioning environment.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM and C&CR-1601 Court Reporting Technology, or departmental approval.

C&CR-2510 CART Production
3 Credits
Focus on realtime writing and dictionary management for use in the Communication Access Realtime Translation (CART) environment.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): C&CR-1601 Court Reporting Technology and C&CR-1451 Speedbuilding and Transcription at 140 WPM, or departmental approval.
C&CR-2520 Captioning Production
3 Credits
Focus on the production of captions using steno or voicewriting technology. Build endurance and accuracy in realtime writing.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): C&CR-2480 Using Captioning Technology, or departmental approval.

C&CR-2550 Writing for Captioning and CART
2 Credits
Focuses on building realtime writing endurance in the Captioning and Communication Access Real-time Transcription (CART) environments. Centers on accurate realtime translation and display of English text.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): C&CR-2510 CART Production and C&CR-2520 Captioning Production; or departmental approval.

C&CR-2602 Technical Terminology
3 Credits
Designed to expose students to much of the subject matter court reporters encounter. Emphasis on medical and technical terminology with material duplicated from real-life situations.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM, or concurrent enrollment.

C&CR-2660 Registered Professional Reporter Examination Preparation
1 Credit
Provides preparation for national certification exam. Speedbuilding at 160-180 wpm level. Utilization and expansion of machine-writing theory. Practical procedures on stenotype machine to develop skill levels on questions and answer testimony, jury charge and literary materials. Minimum exit speed is 180 wpm. Stenotype machines and access to a computer with Internet is required.
Laboratory: 2 hours
Prerequisite(s): C&CR-1300 Realtime Theory or departmental approval.

C&CR-2820 Independent Advanced Study in Captioning and Court Reporting
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

C&CR-282H Honors Advanced Independent Study in Captioning and Court Reporting
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and eligibility for ENG-1010 College Composition I or eligibility for ENG-101H Honors College Composition I, and must have earned an A or B in at least 3 honors courses.

C&CR-2841 Internship
2 Credits
Provides student with 75 hours of actual writing time during on-the-job training using voicewriting technology or machine shorthand technology along with a variety of professional-level tasks. Includes additional practice activities and a practice designed to support students in successfully completing tasks assigned at internship site.
Laboratory: 3 hours
Other Required Hours: Directed practice: 5 hours per week.
Prerequisite(s): C&CR-2401 Speedbuilding and Transcription at 180 WPM; or concurrent enrollment in C&CR-2451 Speedbuilding and Transcription at 225 WPM, and C&CR-2470 Advanced Technology.

C&CR-2910 Internship for Captioning and CART
1 Credit
Provides student with 50 hours of actual writing time during on-the-job training using voicewriting technology or machine shorthand technology in the Captioning and Communication Access Real-time Transcription (CART) environment. Provides student with 30 hours of research and dictionary preparation during on-the-job training in Captioning and CART environments.
Other Required Hours: 80 hours of directed practice per semester (five hours a week of directed practice for 16 weeks).
Prerequisite(s): C&CR-2451 Speedbuilding and Transcription at 225 WPM, or concurrent enrollment; and C&CR-2510 CART Production and C&CR-2520 Captioning Production.

Chemistry (CHEM)

CHEM-1000 Everyday Chemistry
3 Credits
Intended for non-science majors. Basic survey of chemistry as related to environment, health and nutrition, and applications that effect everyday life. Includes basic concepts and applications of chemistry including consumer chemistry, acids and bases, medicines and drugs, pollution, and conservation. To fulfill laboratory science requirement, student should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test; or departmental approval.
OAN Approved: TMNS.

CHEM-100L Everyday Chemistry Laboratory
1 Credit
Intended for non-science majors. Exercises on measurements, separation and synthesis methods, reaction rates, water analysis, household chemistry, forensic and environmental issues, and other related chemistry topics. Laboratory activities complement and enrich related lecture course.
Laboratory: 3 hours
Prerequisite(s): CHEM-1000 Everyday Chemistry or concurrent enrollment; or PSCI-1020 Chemistry or concurrent enrollment.
OAN Approved: TMNS.
CHEM-1010 Introduction to Inorganic Chemistry
4 Credits
Introduction to atomic structure and bonding as basis for understanding valence, formulas, compounds and chemical reactions. Measurement, stoichiometry, states of matter, solutions, ionization, equilibria, acids, bases and pH, and health careers, scientific studies, and applications in daily life.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or appropriate score on Math placement test.
OAN Approved: TMNS.

CHEM-101H Honors Introduction to Inorganic Chemistry
4 Credits
Introduction to the fundamental principles of chemistry including states of matter, atomic structure, bonding, chemical reactions, thermodynamics, ionization, equilibria, gas laws, solutions, acid-base chemistry, and nuclear chemistry. The principles of chemistry will be applied to medicine, nutrition, and the environment. Laboratory work will illustrate chemical theories.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I; or ENG-1010 College Composition I with a grade of "B" or higher; and MATH-0955 Beginning Algebra or appropriate score on Math placement test; or departmental approval.
OAN Approved: TMNS.

CHEM-1020 Introduction to Organic Chemistry and Biochemistry
4 Credits
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry, or CHEM-101H Honors Introduction to Inorganic Chemistry, or sufficient score on Chemistry Assessment test.
CHEM-102H Honors Introduction to Organic Chemistry and Biochemistry
4 Credits
Study of the structure, properties, and function of carbon-based compounds. Introduction to biochemistry including structure, properties, and metabolism of proteins, carbohydrates, and lipids. Roles and structures of enzymes, vitamins, chemical messengers, deoxyribonucleic acid (DNA), and ribonucleic acid (RNA) in cellular function. Principles of structure and function will be applied to medicine and nutrition.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): CHEM-101H Honors Introduction to Inorganic Chemistry, or departmental approval.

CHEM-1080 Herbal Medicines and Natural Products
3 Credits
The course is designed for those interested in education in the areas of natural products and herbal remedies. Definition of the term "natural product", the regulatory dilemma and the marketing of herbal products, the use, risk and safety of herbal preparations, common herbs found in the market and their efficacy and interactions are covered. How to make and guide a rational decision regarding the choice and use of natural herbal products is covered.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, or departmental approval.

CHEM-1300 General Chemistry I
4 Credits
Study of fundamental principles of chemistry emphasizing atomic theory and structure, chemical bonding, periodic trends, thermochemistry, nuclear chemistry, aqueous solutions, stoichiometry, and the gaseous state of matter. To fulfill the laboratory science requirement, students should enroll in the related laboratory course.
Lecture: 4 hours
Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry, or sufficient score on Chemistry assessment test; and MATH-0965 Intermediate Algebra* or sufficient score on Math Placement Test; or departmental approval: equivalent knowledge or skills. Note: MATH-1200 taken prior to Fall 2013, or MATH-1270 or MATH-1280 taken prior to Fall 2016 will also be accepted to fulfill prerequisite requirements.
OAN Approved: TMNS, OSC008 (Course 1 of 2, both must be taken), and OSC023 (Course 1 of 4, all must be taken).

CHEM-130H Honors General Chemistry I
5 Credits
Study of fundamental principles of chemistry emphasizing atomic theory, periodic trends, structure and bonding, chemical reaction and stoichiometry, energy, and the states of matter. Perform laboratory experiments designed to demonstrate chemical concepts and support theoretical phenomena. Honors General Chemistry I combines lecture and laboratory into one course.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry, or CHEM-101H Honors Introduction to Inorganic Chemistry, or sufficient score on Chemistry assessment test; and MATH-1530 College Algebra and MATH-1540 Trigonometry; or MATH-1580 Precalculus, or sufficient score on Math assessment test; or department approval: equivalent knowledge or skills.
OAN Approved: TMNS, OSC008, OSC023 (1 of 2 courses, both must be taken).

CHEM-130L General Chemistry Laboratory I
1 Credit
Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry I. Emphasis on techniques and procedures.
Lecture: 3 hours
Prerequisite(s): CHEM-1300 General Chemistry I or concurrent enrollment, or departmental approval: equivalent knowledge or skills.
OAN Approved: TMNS, OSC008 (Course 2 of 2, both must be taken), OSC023 (course 2 of 4, all must be taken).

CHEM-1310 General Chemistry II
4 Credits
Emphasis on kinetics, equilibrium concepts, electrochemistry, thermodynamics, liquids and solids and phase transitions, solutions, and descriptive chemistry, including periodic patterns of chemical properties and reactivities. To fulfill laboratory science requirement, students should enroll in related laboratory course.
Lecture: 4 hours
Prerequisite(s): CHEM-1300 General Chemistry I, or CHEM-130H Honors General Chemistry I; or departmental approval: equivalent knowledge or skills.
OAN Approved: TMNS, OSC009 (Course 1 of 2, both must be taken), and OSC023 (Course 3 of 4, all must be taken).
**CHEM-131H Honors General Chemistry II**

**5 Credits**

Study of the fundamental principles of chemistry emphasizing chemical and nuclear kinetics, thermodynamics, and equilibrium. Introduction and study into the specific branches of chemistry: electrochemistry, coordination, organic, nuclear, and environmental chemistry. Perform laboratory experiments designed to demonstrate chemical principles and support theoretical phenomena. Honors General Chemistry II combines lecture and laboratory into one course.

**Prerequisite(s):** CHEM-130H Honors General Chemistry I, or departmental approval: equivalent knowledge or skills.

**OAN Approved:** OSC009, OSC023, (2 of 2 courses, both must be taken)

**CHEM-131L General Chemistry Laboratory II**

**1 Credit**

Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry II. Emphasis on technique and procedures.

**Laboratory:** 3 hours

**Prerequisite(s):** CHEM-130L General Chemistry Laboratory I, and CHEM-1310 General Chemistry II or concurrent enrollment; or departmental approval: equivalent knowledge or skills.

**OAN Approved:** TMNS, OSC009 (Course 2 of 2, both must be taken), OSC023 (4 of 4, all must be taken).

**CHEM-179H Honors Contract in Chemistry**

**1 Credit**

Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).

**Lecture:** 1 hours

**Prerequisite(s):** Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

**CHEM-1820 Independent Study/Research in Chemistry**

**1-3 Credits**

Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

**Lecture:** 1-3 hours

**Prerequisite(s):** Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

**CHEM-182H Honors Independent Study/Research in Chemistry**

**1-3 Credits**

Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

**Lecture:** 1-3 hours

**Prerequisite(s):** Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

**CHEM-182S Independent Laboratory Study/Research in Chemistry**

**1-3 Credits**

Independent two-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

**Laboratory:** 2-6 hours

**Prerequisite(s):** Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

**CHEM-182T Independent Laboratory Study/Research in Chemistry**

**1-3 Credits**

Independent three-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

**Laboratory:** 3-9 hours

**Prerequisite(s):** Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II.

**CHEM-2000 Analytical Chemistry**

**5 Credits**

An introduction to the theoretical principles of quantitative and instrumental analysis. Emphasis on experimental methods, sampling techniques, statistics, error theory, chemical equilibrium, stoichiometry, and volumetric and gravimetric procedures as applied to quantitative determinations. Provides an introduction to spectroscopic, electroanalytical, and chromatographic methods of analyses. Provides hands-on experience to students by completion of laboratory experiments related to these principles. Emphasis on development of laboratory techniques.

**Lecture:** 3 hours. **Laboratory:** 6 hours

**Prerequisite(s):** CHEM-1310 General Chemistry II and CHEM-131L General Chemistry Laboratory II; or CHEM-131H Honors General Chemistry II.

**CHEM-2300 Organic Chemistry I**

**5 Credits**

Functional group chemistry of aliphatic compounds covering nomenclature, structural-reactivity, and synthetic reactions. Theoretical concepts, structural bonding, stereochemistry and reaction mechanisms emphasized. Use of various spectrometric techniques for identification of compounds introduced.

**Lecture:** 3 hours. **Laboratory:** 6 hours

**Prerequisite(s):** CHEM-1310 General Chemistry II, and CHEM-131L General Chemistry Laboratory II; or CHEM-131H Honors General Chemistry II; or departmental approval: equivalent knowledge or skills.

**OAN Approved:** OSC010 (1 of 2 courses, both must be taken).
CHEM-2310 Organic Chemistry II
5 Credits
Continuation of Organic Chemistry I. Common functional groups with emphasis on aromatic and carbonyl containing molecules, and selected topics such as heterocyclic compounds, macromolecules, and biomolecules introduced.
Lecture: 3 hours. Laboratory: 6 hours
Prerequisite(s): CHEM-2300 Organic Chemistry I.
OAN Approved: OSCO010 (2 of 2 courses, both must be taken).

CHEM-2820 Independent Advanced Study/Research in Chemistry
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

CHEM-282H Advanced Honors Independent Study/Research in Chemistry
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Chinese (CHIN)

CHIN-1011 Beginning Chinese Language and Culture I
4 Credits
Introduction to standard Chinese (Mandarin) through listening, speaking, reading, writing, and interpersonal communication activities. Includes introduction to Pinyin, tones, radicals, character structures, sentence structures, and culture awareness to be able to perform real-world communicative tasks in culturally appropriate ways.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.

CHIN-1021 Beginning Chinese Language and Culture II
4 Credits
Continued study of standard Chinese with expansion of vocabulary. Practice in conversation on given subjects and transition from speaking to reading.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): CHIN-1011 Beginning Chinese Language and Culture I, or departmental approval.

CHIN-1820 Independent Study/Research in Chinese
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. (See Credit Schedule of classes for current offerings).
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

CHIN-182H Honors Independent Study in Chinese
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

CHIN-2820 Independent Advanced Study/Research in Chinese
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. (See Credit Schedule of classes for current offerings.)
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

CHIN-282H Advanced Honors Independent Study/Research in Chinese
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
Cisco (ZCIS)

ZCIS-1000 CCNA: Interconnecting Cisco Networking Devices (ICND1) V.3 3.2 CEU’s

This comprehensive course will help you develop your basic CCNA routing and switching skills. It will lay the foundation of understanding the network layers 1-3 which apply to core routing and switching. You will gain hands-on experience to develop basic networking skills to configure, monitor and troubleshoot Cisco networks. You will use Cisco ISR 4300/3560/3850/C9300/4506 series routers and switches to apply the Cisco IOS (Internetwork Operating System). Other topics to be covered include: understanding the interactions and network functions of firewalls, wireless controllers and access points, IPv6 and basic network security. ICND1 is the first step in a two-part path to achieve the CCNA Routing and Switching certification. The second step is, ICND2 (CCNA Bootcamp) which delves further into the topics started in ICND1.

Contact hours: 32
Not financial aid eligible.

ZCIS-1002 CCNA: Interconnecting Cisco Networking Devices: CCNA Routing and Switching v3 (bootcamp) 4 CEU’s

This course expands on your knowledge to install, configure (EIGRP and OSPF in IPv4 and IPv6), operate and troubleshoot medium-size routed and switched networks, including implementation and verification of connections to remote sites in a WAN. Also covered will be Quality-of-Service (QoS) elements and their applicability. Through hands-on labs and lectures you prepare for the second step on your path to CCNA Routing and Switching certification Exam.

Contact hours: 40
Not financial aid eligible.

ZCIS-1006 CCNP Series: Implementing Cisco IP Routing (ROUTE v2.0) 4 CEU’s

The Implementing Cisco IP Routing class will prepare you for the ROUTE 300-101 exam. You will learn to use advanced IP addressing and routing to implement scalable and highly secure Cisco routers that are connected to LANs, WANs, and IPv6. Through the hands-on lab component of the class, you will develop an understanding of how to implement scalable routed networks. Your knowledge and skills will be developed while focusing on routing protocols for both IPv4 and IPv6: EIGRP and OSPF for an enterprise and BGP for enterprise Internet connectivity.

Contact hours: 40
Not financial aid eligible.

ZCIS-1007 CCNP Series: Implementing Cisco IP Switched Networks (Switch v2.0) 4 CEU’s

The Implementing Cisco IP Switched Networks class will prepare you for the SWITCH 300-115 exam while learning to plan, configure and verify the implementation of complex enterprise switching solutions that use the Cisco Enterprise Campus Architecture. Through the hands-on lab component of the class, you will develop the knowledge and skills needed to create an efficient and expandable enterprise network. The course will focus on Layer 2 and multilayer switch functions, including VLANs, trunks, inter-VLAN routing, port aggregation, spanning tree, first hop redundancy, as well as network security and high availability features.

Contact hours: 40
Not financial aid eligible.

ZCIS-1014 CCNP Security: Implementing Cisco Secure Mobility Solutions (SIMOS) 4 CEU’s

This course prepares the student to protect data navigating a public or shared infrastructure, such as the Internet, by employing and maintaining Cisco VPN solutions. Thru hands-on labs, the student will gain experience with configuring and troubleshooting remote access and site-to-site VPN solutions, using Cisco ASA adaptive security appliances and Cisco IOS routers.

Contact hours: 40
Not financial aid eligible.

ZCIS-1016 CCDA: Cisco Certified Design Associate 4 CEU’s

This course provides the student with the knowledge and skills to develop and design integrated network solutions. Be able to examine a company’s current and future network needs and develop a network solution that meets and exceeds requirements for performance, security, capacity and scalability.

Contact hours: 40
Not financial aid eligible.

ZCIS-1019 CCNP Security: Implementing Cisco Secure Access Solutions (SISAS) 3.5 CEU’s

In this course the student learns to configure various advanced Cisco security solutions for mitigating outside threats and securing devices connected to the network. This course prepares the student for the exam by covering how to reduce the risk to your IT infrastructures and applications using Cisco’s Identity Services Engine (ISE) appliance feature. Also included are the fundamental concepts of BYOD thru the use of ISE.

Contact hours: 35
Not financial aid eligible.

ZCIS-1021 CCNP Security: Implementing Cisco Threat Control Solutions (SITCS) 3.5 CEU’s

This course prepares the student to implement and manage security on Cisco ASA firewalls utilizing access and identity policies. Thru hands-on labs, the student will gain experience with configuring various advanced Cisco security solutions. Also covered is how to reduce the risk to IT infrastructures and applications using Cisco’s Next Generation Firewall (NGFW) security appliance feature and provide operational support for Intrusion Prevention Systems (IPS), Web (Cloud) email security, and web-based security appliances.

Contact hours: 35
Not financial aid eligible.

ZCIS-1022 Cisco Wireless Security 3.2 CEU’s

In this hands-on course, the student will learn to lessen WLAN attacks, explore computer hacking, Cisco SAFE software, basic security configuration, and 802.11 security risks. Also, you’ll learn to use a wireless sniffer, capture packets, analyze WLAN traffic, explore authentication and association processes, and perform deployment exercises. You will be introduced to Cisco ACS RADIUS, ACU for LEAP, PEAP, and EAP-FAST.

Contact hours: 32
Not financial aid eligible.
ZCIS-1024 CCNP/Voice Series: CVOICE - Implementing Cisco Unified Communications Voice over IP and QoS v8.0
3.5 CEU's
This course prepares the student to take the CVOICE v8.0 exam, which is one of the qualifying exams for Cisco Certified Network Professional Voice (CCNP Voice). The student will learn about voice gateways, characteristics of VoIP, implementation of dial plans and IP phones, Cisco Unified Communications Manager Express, and information about gatekeepers and Cisco Unified Border Element. Also the following will be part of the class: Addressing design, planning, and deployment practices, hands-on experience in configuring and implementing VoIP networks, and how to configure Quality of Service (QoS) to support real-time traffic.
Contact hours: 35
Not financial aid eligible.

ZCIS-1025 CCVP Series: IP Telephony
3.5 CEU's
This course prepares the student to take the IP Telephony exam, which is one of the qualifying exams for the Cisco Certified Voice Professional certification. Presented in this class will be the information and skills necessary to describe, install, configure and support Cisco Call Manager products in a Cisco network, including such features as security and video. Also covered will be VoIP, PSTN, and CCM.
Contact hours: 35
Not financial aid eligible.

ZCIS-1026 CCVP Series: IP Telephony Troubleshooting
3.5 CEU's
This course prepares the student to take the IP Telephony Troubleshooting exam, which is one of the qualifying exams for the Cisco Certified Voice Professional certification. Presented in this class will be the information and skills necessary to troubleshoot Enterprise CallManager, Unity, and IP network deployments. Also presented will be design/planning practices and hands-on experience in configuring, deploying, and troubleshooting AVVID solutions.
Contact hours: 35
Not financial aid eligible.

ZCIS-1027 CCVP Series: Cisco Voice Gateways and Gatekeepers
3.5 CEU's
This course prepares the student to take the Voice Gateway Gatekeeper exam, which is one of the qualifying exams for the Cisco Certified Voice Professional certification. Presented in this class will be the information and skills necessary to implement Cisco gateways and gatekeepers to integrate a VoIP network to both PSTN and TDM equipment, including the implementation of dial plans and advanced gateway features such as SRST and DSP resources. Also covered will be applying gatekeepers and directory gatekeepers to provide hierarchical dial plan resolution and call admission control.
Contact hours: 35
Not financial aid eligible.

ZCIS-1028 CCNP Voice Series: CAPPS - Integrating Cisco Unified Communication
3.5 CEU's
This course prepares the student to take the Integrating Cisco Unified Communications Applications (CAPPS) v8.0 exam, which is one of the qualifying exams for Cisco Certified Network Professional Voice (CCNP Voice). Presented in this class will be Cisco Unified Presence, Cisco Unity Express, and Cisco Unity Connection. These describe voice messaging deployment, Cisco Unified Presence, and troubleshooting. Through hands-on labs the student will configure and integrate the call management and voice mail systems of Cisco. The student will also learn about Cisco Unity Connection, Cisco Unified Communications Manager (CUCM), Cisco Unity Express, CUCM Express, Cisco Unified Personal Communicator (CUPC) client with desk phone control, and Unity Connection for CUPC access.
Contact hours: 35
Not financial aid eligible.

ZCIS-1035 CCDP Series:Designing Cisco Network Service Architectures (ARCH)
4 CEU's
In the Designing for Cisco Internetwork Solutions (DESGN) v2.0 course, the students will learn additional aspects of modular campus and edge network design, including high availability, security quality of service (QoS), network management, data center, and IP multicast. In addition, the students will be able to design solutions for the network that are strategic to small, medium, and large enterprises, including virtual private networking, wireless, and IP telephony.
Contact hours: 40
Not financial aid eligible.

ZCIS-1036 CCNA Security: Cisco Certified Security Associate (IINS)
4 CEU's
With a CCNA Security certification, the network professional should be able to demonstrate the skills required to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats. The CCNA Security curriculum emphasizes core security technologies, the installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices, and competency in the technologies that Cisco uses in its security structure. In this course, the student will learn the necessity of a comprehensive security policy and how it affects the strength of the network. The student will also learn to perform basic tasks to secure a small office network using Cisco IOS security features available through web-based GUIs (SDM) and CLI on Cisco routers and switches.
Contact hours: 40
Not financial aid eligible.
CZIS-1039 CCNP/Voice Series: Implementing Cisco Unified Communications Manager Part 1 v8.0 (CIPT1)
3.5 CEU's
This course prepares the student to take the 464-447 Implementing Cisco Unified Communications Manager, Part 1 v8.0 (CIPT1 v8.0) exam, which is one of the qualifying exams for Cisco Certified Network Professional Voice (CCNP Voice). Presented in this class will be Cisco Unified Presence, Cisco Unity Express, and Cisco Unity Connection. These describe voice messaging deployment, Cisco Unified Presence, and troubleshooting. Through hands-on labs the student will learn to configure a Cisco Unified Communications Manager (CUCM) solution in a multisite environment. CUCM v7.x/8.x will also be presented and the student will learn to configure users and associate them with phones.

Contact hours: 35
Not financial aid eligible.

CZIS-1040 CCNP/Voice Series: Implementing Cisco Unified Communications Manager, Part 2 v8.0 (CIPT2 v8.0)
3.5 CEU's
This course prepares the student to take the 464-457 Implementing Cisco Unified Communications Manager, Part 2 v8.0 (CIPT2 v8.0) exam, which is one of the qualifying exams for Cisco Certified Network Professional Voice (CCNP Voice). The hands-on course will focus on Cisco Unified Communications Manager (CUCM) v7.0 and v8.0 in global and multisite networks. The student will learn how to use local route groups and global transformations to simplify the dial plan. Also covered will be globalization call routing, Cisco Service Advertisement Framework (SAF) and Call Control Discovery (CCD), tail-end hop-off (TEHO), Cisco Unified Survivable Remote Site Telephony (SRST), and mobility features such as Cisco Device Mobility and Cisco Extension Mobility.

Contact hours: 35
Not financial aid eligible.

CZIS-1041 CCNA Wireless: Implementing Cisco Wireless Networking Fundamentals
3.5 CEU's
With a Cisco Certified Network Associate Wireless (CCNA Wireless) certification, network professionals can configure, monitor and troubleshoot the basic tasks of a Cisco WLAN in SMB and Enterprise networks. This course is designed to help you prepare for the CCNA Wireless certification. CCNA Wireless recognizes the critical importance of professionals supporting wireless LANS including Networking Associates/Administrators, Wireless Support Specialists, and WLAN project managers.

Contact hours: 35
Not financial aid eligible.

CZIS-1042 CCNP Series: Troubleshooting and Maintaining Cisco IP Networks v2.0
4 CEU's
The Troubleshooting and Maintaining Cisco IP Networks class will prepare the student for the TSHOOT 300-135 exam while learning to plan and perform regular maintenance on complex enterprise routed and switched networks. Through the hands-on lab component of the class the student will develop the knowledge and skills needed to use technology-based practices and troubleshooting methods, approaches, procedures, and tools. Also, as a part of the curriculum, a series of different organizations are introduced for each set of troubleshooting scenarios that are presented.

Contact hours: 40
Not financial aid eligible.

CZIS-1043 CCNA Voice: Introducing Cisco Voice and UC Administration v8.0 (COMM)
3.5 CEU's
The course prepares the student to take the Implementing Cisco IOS Unified Communications exam (IUCI 640-460 exam). Students will learn the skills for basic IP telephony installation, configuration, and maintenance within small to medium sized IP Telephony situations using Cisco Unified Communications Manager Express, Cisco Unity Express, and the UC500 Smart Business Communications System solutions. The student will learn the basics of traditional telephony along with Voice over IP (VoIP) fundamentals, including various VoIP protocols. The student will learn to configure Cisco Unified Communications Manager Express (CUCME) and implement and troubleshoot Cisco Unity Express (CUE). The configuration of the Cisco Smart Business Communications System (UC500 Series) will also be explored. With the CCNA Voice certification you have the skills for jobs as voice technologies administrator, voice engineer, and voice manager.

Contact hours: 35
Not financial aid eligible.

CZIS-1044 Network Support Technician: Cisco Technical
15.2 CEU's
The Network Support Specialist program prepares individuals to pass four industry-standard Cisco certification exams: CCENT (Cisco Certified Entry Networking Technician), CCNA (Cisco Certified Networking Associate), CCNP Wireless (Cisco Certified Networking Associate Wireless) and CCSA (Cisco Certified Security Associate) and a career in the networking, security and telecommunication industries. Skills and certifications acquired during the program will provide a base of Cisco networking experience that can be built upon in the future. CISCO certification ensures high standards of technical expertise. Achieving CISCO certification at any level means joining the ranks of skilled network professionals who have earned recognition and respect in the industry.

Contact hours: 152
Not financial aid eligible.

CZIS-1046 CCNA Series: Building Cisco Service Provider Next-Generation Networks, Part 1 (SPNGN1)
3.5 CEU's
In this course the student will learn the fundamentals of networking as it relates to service providers (SPs). Also, IP Next Generation Network (IP NGN) architecture is introduced. IP Next Generation Network (IP NGN) helps service providers build modern, scalable and reliable networks. Hands-on labs will be used to gain practical skills in deploying basic Cisco IOS/IOS XE and Cisco IOS XR features to operate and support service provider network. It is recommended that students take Building Cisco Service Provider Next Generation Networks, Part 2 (SPNGN2) as well, to be better prepared for the exam.

Contact hours: 35
Not financial aid eligible.
ZCIS-1047 CCNA Series: Building Cisco Service Provider Next-Generation Networks, Part 2 (SPNGN2)
3.5 CEU's
In this course, the student will gain the knowledge and skills necessary to implement and support a service-provider network. This will be done by focusing on the use of Cisco switches and Cisco routers that are connected in LANs and WANs, and are typically found in the service-provider network. Also, learning to configure, verify, and troubleshoot the various Cisco networking devices will be covered. Through hands-on labs, the student will gain practical skills on deploying Cisco IOS/IOS XE and Cisco IOS XR features to operate and support service provider network.
Contact hours: 35
Not financial aid eligible.

ZCIS-1048 CCNPService Provider series: Deploying Cisco Service Provider Network Routing (SPROUTE)
3.5 CEU's
Cisco Certified Network Professional Service Provider (CCNP Service Provider) certification validates that you have the knowledge and skills to deliver a scalable carrier-grade infrastructure capable of expanding rapidly to support introduction of new managed services and ongoing customer requirements.
Contact hours: 35
Not financial aid eligible.

ZCIS-1049 CCNPService Provider series: Deploying Cisco Service Provider Advanced Network Routing V1.0 -SPAdvR
3.5 CEU's
By focusing on using Cisco routers that are regularly used in the service provider network the student will learn the skills needed to implement and support service provider networks. This course will prepare the student to configure, verify, and troubleshoot advanced Border Gateway Protocol (BGP) configuration, IP multicasting, and IPv6 transition mechanisms. Hands-on labs will give the student practical experience in deploying Cisco IOS, IOS XE, and IOS XR Software features to operate and support the service provider network.
Contact hours: 35
Not financial aid eligible.

ZCIS-1050 CCNPService Provider series: Implementing Cisco Service Provider Core Network Services (SPCORE)
3.5 CEU's
The Implementing Cisco Service Provider Next-Generation Core Network Services (SPCORE) v1.0 course is designed to help students prepare for Cisco CCNP® Service Provider certification. This course is a component of the CCNP SP curriculum. In this course the student is introduced the concepts of Multiprotocol Label Switching (MPLS) and its implementation. Also, MPLS Traffic Engineering (MPLS TE) services is introduced. Students will use the technology principles of basic quality of service (QoS), and QoS with MPLS, to implement advanced features and functions. The focus of the course is on the technology issues of MPLS and on best practices for implementing QoS from the service provider perspective, as well as how to configure some of those features and functions in an existing routed environment. Hands-on labs done in class are useful to gain practical skills on deploying Cisco IOS, IOS XE, and IOS XR features to operate and support the service provider network.
Contact hours: 35
Not financial aid eligible.

ZCIS-1051 CCNPService Provider series:Implementing Next-Generation Edge Network Services
4 CEU's
The course is designed to provide service provider professionals with information on the use of service provider VPN solutions and to implement Virtual Private Networks (VPNs) within their networks and how to enable service provider point of presence (POP) to provide Layer 2 and Layer 3 VPNs.
Contact hours: 40
Not financial aid eligible.

ZCIS-1052 Introducing Cisco Data Center Networking (DCICN)
3.5 CEU's
This course prepares the student to take the Introducing Cisco Data Center Networking exam (640-911), one of the exams associated with the CCNA Datacenter Certification. Through hands-on labs, the focus will be on fundamental information on how a Data center network works, how to configure virtualization in the network, addressing schemes, troubleshooting and configuration skills. This course is targeted for individuals that will perform only basic configuration tasks.
Contact hours: 35
Not financial aid eligible.

ZCIS-1053 Introducing Cisco Data Center Technologies (DCICT)
3.5 CEU's
This course prepares the student to take the Introducing Cisco Data Center Technologies exam (640-916), one of the exams associated with the CCNA Datacenter Certification. Through hands-on labs, the focus will be on verifying configurations, making configuration changes, and designing new topologies. The introductory level of knowledge in this course is targeted for individuals who can perform only the more basic configuration tasks.
Contact hours: 35
Not financial aid eligible.

ZCIS-1054 Securing Cisco Networks with Threat Detection and Analysis (SCYBER)
3.5 CEU's
This course prepares the student to take the Securing Cisco Networks with Threat Detection and Analysis (SCYBER) exam. This course combines lab-intensive training with lecture materials that allows the student to learn to recognize specific threats and attacks on your network. The course is designed for professional security analysts and the exam covers essential areas of skills, including monitoring, analyzing, responding to security threats.
Contact hours: 35
Not financial aid eligible.
ZCIS-1055 CCNA: Cisco Certified Network Associate Industrial (CCNA INDUSTRIAL)
4 CEU’s
This course prepares the student to successfully implement and troubleshoot the most common industry-standard protocols, along with wireless and security technologies, in today’s converged IT and industrial networks. The focus will be on achieving competency and the skills needed to configure, maintain, and troubleshoot industry standard network protocols as well as wireless and security technologies. Through classroom instruction and hands-on labs the student will learn how to use current infrastructures while developing a converged platform for flexibility to support future business outcomes. IMINS2 exposes students to multiple industrial network technologies while preparing for the Managing Industrial Networks for Manufacturing with Cisco Technologies (200-601 IMINS2) certification exam
Contact hours: 40
Not financial aid eligible.

ZCIS-1056 CCNA Cloud: Understanding Cisco Cloud Fundamentals (CLDFND)
4 CEU’s
This course prepares the student to take the Understanding Cisco Cloud Fundamentals (CLDFND) exam. It is designed to provide students with the required knowledge, skills and abilities to perform tasks that are the foundation of Cloud computing and the deployment models of a Cloud network.
Contact hours: 40
Not financial aid eligible.

ZCIS-1057 CCNA Cloud: Introducing Cisco Cloud Administration (CLDADM)
4 CEU’s
This course prepares the student for the Introducing Cisco Cloud Administration (CLDADM) certification, an associate-level certification specializing in Cloud technologies. This course is designed to provide students with the necessary knowledge and skills to perform the essentials of Cloud administration and operations.
Contact hours: 40
Not financial aid eligible.

ZCIS-1058 CCNA: Cisco CCNA Cybersecurity Fundamentals (SECFND) v1.0
4 CEU’s
In preparation for the CCNA Cybersecurity Fundamentals (SECFND) v1.0 exam the students will learn beginning-level skills of basic threat analysis, event correlation, identifying malicious activity, and acquire the core skills needed for the more advanced associate-level materials in the second required exam, “Implementing Cisco Cybersecurity Operations (SECOPS).”
Contact hours: 40
Not financial aid eligible.

ZCIS-1059 CCNA: Cisco CCNA Cyber Ops (SECOPS) V1.0
4 CEU’s
In preparation for the CCNA Cyber Ops (SECOPS) v1.0 exam the students will learn Beginning-level skills of basic threat analysis, event correlation, identifying malicious activity, and how to use a playbook for incident response and be on their way to becoming a Security Operations Center (SOC) Analyst at the associate level.
Contact hours: 40
Not financial aid eligible.

ZCIS-1060 Cisco CCNA Cybersecurity Operations (SECOPS) v1.0
4 CEU’s
Start your journey toward a career in security operations center (SOC) analysis by preparing for the CCNA Cybersecurity Operations (SECOPS) v1.0 exam. Gain beginner-level skills in basic threat threat analysis, event correlation, identifying malicious activity and using a playbook for incident response.
Contact hours: 40
Not financial aid eligible.

ZCIS-1061 Cisco CCNA Cybersecurity Fundamentals (SECFND) v1.0
4 CEU’s
In preparation for the CCNA Cybersecurity Fundamentals (SECFND) v1.0 exam, students will learn beginner-level skills in basic threat threat analysis, event correlation and identifying malicious activity. They will acquire the core skills needed for the more advanced associate-level materials in the second required exam, Implementing Cisco Cybersecurity Operations (SECOPS).
Contact hours: 40
Not financial aid eligible.

ZCIS-1062 Securing CISCO Networks with Threat Detection/Analysis (SCYBER)
4 CEU’s
This course prepares students for the Securing CISCO Networks with Threat Detection and Analysis (SCYBER) exam associated with CISCO Cybersecurity Specialist certification. Designed for professional security analysts, this course combines lab-intensive training with lecture materials that help the student learn to recognize specific threats and attacks on a network. The SCYBER exam covers essential skills including event monitoring and analyzing and responding to security threats within a network.
Contact hours: 40
Not financial aid eligible.

ZCIS-ZCIS Cisco Certified Network Associate (CCNA) Voice
4 CEU’s
This course prepares students for the CCNA Voice exam (IIUC 640-460). Students will develop the skills needed to perform basic IP telephony installation, configuration and maintenance using Cisco Unified Communications Manager Express, Cisco Unity Express and the UC500 Smart Business Communications System solutions. Individuals with CCNA Voice certification are prepared for jobs as voice technology administrators, voice engineers and voice managers.
Contact hours: 40
Not financial aid eligible.

Cisco Academy (ZCIA)

ZCIA-1007 Cisco Academy Support Center Continuing Education Training
1.6 CEU’s
Cisco Regional Networking Academy. Instructor training for Local Academies.
Contact hours: 16
Not financial aid eligible.
**College Student Resources (ZGEN)**

ZGEN-1003 New Student Convocation

**0 Contact Hours**

New Student Convocation celebrates the beginning of your Cuyahoga Community College journey and is a formal introduction to your campus community. You will learn about campus life and College expectations, and connect with campus resources, faculty and other students. New Student Convocation is an essential part of the First Year Experience. There is no cost to attending New Student Convocation.

Contact hours: 3

Not financial aid eligible.

**Communication Studies (COMM)**

COMM-1000 Fundamentals of Interpersonal Communication

**3 Credits**

Define and explain basic terms, principles, and theories of interpersonal communication. Examine and adjust communication behaviors with the goal of improving one's own communication skills. Critically apply interpersonal theories in a variety of contexts and demonstrate an understanding of following aspects of interpersonal relationships: verbal, nonverbal, listening, perception, conflict, power, influence, and culture.

Lecture: 3 hours

Prerequisite(s): None.

OAN Approved: OCM002.

COMM-1010 Fundamentals of Speech Communication

**3 Credits**

Effective speech communication. Application of principles of speech content and delivery to a variety of practical speaking and listening situations.

Lecture: 3 hours

Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

COMM-101H Honors Speech Communication

**3 Credits**

In-depth study and application of effective speech communication. Includes principles of speech content and delivery in a variety of speaking and listening situations. Research in the origins and history of speech including classic Greek, Roman, and contemporary models. Emphasis on speaking and speech evaluation.

Lecture: 3 hours

Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

COMM-1050 Voice and Articulation

**3 Credits**

Practical course in application of both theory and technique to conscious vocal control and development of articulation and pronunciation standards. Individual and group practice. Performance through exercises and readings.

Lecture: 3 hours

Prerequisite(s): None.

COMM-1210 Small Group Communication

**3 Credits**

Basic elements of communications and small group theory as employed in typical small group situation. Emphasis placed on individual's responsibility in discussion setting, focusing on development of leadership abilities within each group. Analysis of group interaction in problem-solving process for task-oriented groups.

Lecture: 3 hours

Prerequisite(s): None.

OAN Approved: OCM003.

COMM-2000 Introduction to Communication Theory

**3 Credits**

Introduction to theories of human communication. Analyzing the communication process by examining the process of building communication theory, as well as addressing theories in a variety of communication contexts such as interpersonal, group, public, organizational, influence, mass media, and cultural. Attention to the application of communication theory in achieving a better understanding of the process of human communication.

Lecture: 3 hours

Prerequisite(s): COMM-1000 Fundamentals of Interpersonal Communication or COMM-1010 Fundamentals of Speech Communication or COMM-101H Honors Fundamentals of Speech Communication; and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

OAN Approved: OCM001.

COMM-2020 Interviewing

**3 Credits**

This course is designed to teach you how to incorporate communication skills relating to professional interviewing including interview structures, questioning techniques and formats, and a range of interview types. Specific practice will focus on workplace interviewing in the 21st century.

Lecture: 3 hours

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and COMM-1010 Fundamentals of Speech Communication, or COMM-101H Honors Fundamentals of Speech Communication.

COMM-2050 Oral Interpretation

**3 Credits**

Introduction to the oral communication of various forms of fiction and non fiction for live performance. Involves the analysis of literary works in preparation for performance with an emphasis on the development of delivery skills for interpretive reading.

Lecture: 3 hours

Prerequisite(s): COMM-1010 Fundamentals of Speech Communication, or COMM-101H Honors Fundamentals of Speech Communication and ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

COMM-2110 Argumentation and Debate

**3 Credits**

Introduces students to the basic principles of argumentation and debate as a tool for inquiry and advocacy, while emphasizing the development of research, critical thinking, and written and oral presentation skills. Strategies for advocating and arguing contested positions will be sharpened as reasoning and evidence in speeches, conversations, essays, and group deliberations are practiced and examined.

Lecture: 3 hours

Prerequisite(s): COMM-1010 Fundamentals of Speech Communication, or COMM-101H Honors Fundamentals of Speech Communication, or departmental approval: comparable knowledge or skills.
COMM-2150 Introduction to Speech Pathology  
3 Credits  
Survey of the profession of speech-language pathology and introduction to various organic and functional speech disorders including deviant articulation, delayed speech-language development, and stuttering. Techniques for diagnosis and treatment are explored.  
Lecture: 3 hours  
Prerequisite(s): COMM-1050 Voice and Articulation or departmental approval.

COMM-2160 Intercultural Communication  
3 Credits  
 Covers barriers to intercultural communication, dimensions of cultural differences, conflict, verbal and nonverbal issues, and the theories of communication concepts operating between people of different cultures.  
Lecture: 3 hours  
Prerequisite(s): COMM-1000 Fundamentals of Interpersonal Communication or departmental approval.

COMM-2180 Principles of Phonetics  
3 Credits  
Study of the theory, principles and practices that are employed to describe the sounds of spoken English. Introduction to the International Phonetic Alphabet (IPA) and its application in transcribing the sounds of normal, deviant and accented speech. Course content is relevant to the disciplines of speech and hearing science, education, linguistics and theatre.  
Lecture: 3 hours  
Prerequisite(s): COMM-1050 Voice and Articulation, or departmental approval.

COMM-2813 Special Topics: Speech and Language Development  
3 Credits  
This course is designed to provide an understanding of the process of normal speech and language acquisition (comprehension and production) from birth through the teen years. Speech and Language Development information will include an overview of the major milestones in phonology, semantics, syntax, morphology, pragmatics and metalinguistic components. An understanding of these components of communication will provide a basis for approaching assessment and intervention in persons with speech and language disorders.  
Lecture: 3 hours  
Prerequisite(s): COMM-2150 Introduction to Speech Pathology or departmental approval.

**Computer Numerical Control (ZCNC)**

**ZCNC-1006 CNC Fundamentals**  
3.2 CEU's  
Computer Numerical Control (CNC) is the key technology driving today's manufacturing tools and processes. CNC machine tools have become critical for American manufacturers wanting to improve productivity and quality. Form a firm foundation for your work with fundamental concepts of CNC, including machine layout, coordinate systems, basic tooling, offsets, speeds and feeds. You'll review basic shop math, metrology and blueprint reading.  
Contact hours: 32  
Not financial aid eligible.

**ZCNC-1007 CNC Technologies**  
3.2 CEU's  
Take a closer look at the tools and technology involved in CNC machining. Learn how drills, taps, reamers, end mills, and carbide insert tools are used on CNC machines. Get the basics of the Pythagorean Theorem and an introduction to trigonometry, which is essential in all CNC work. Basic CNC lathe and mill program formats are also covered.  
Contact hours: 32  
Not financial aid eligible.

**ZCNC-1008 CNC Lathe - Advanced**  
3.2 CEU's  
If you are ready to learn more about programming CNC lathes, this course is for you. Take an in-depth look at CNC lathes from process planning to basic programming. Learn how to program circular cuts, threads, chamfers, and tapers. Canned cycles are also covered.  
Contact hours: 32  
Not financial aid eligible.

**ZCNC-1009 CNC Mill - Advanced**  
3.2 CEU's  
Take an in-depth look at CNC mills from process planning to basic programming. Learn how to program holes, slots, pockets, threads and periphery cuts. If you are ready to learn more about programming CNC mills, this course is for you.  
Contact hours: 32  
Not financial aid eligible.

**ZCNC-1012 CNC Mill Lab 1**  
1.25 CEU's  
Learn the basic setup and operational skills you will need as a CNC machining center operator, such as mounting tools on the machine, setting tool lengths, locating program zero, loading programs, running programs, editing programs and controlling part size with wear offsets. You will set up and run three part programs to create a part to take with you. Class size is limited to maximize hands-on time. Reserve your seat today!  
Contact hours: 12.5  
Not financial aid eligible.

**ZCNC-1013 CNC Lathe Lab 1**  
1.25 CEU's  
Learn the basic setup and operational skills you will need as a CNC lathe operator, such as mounting tools, setting tool geometry offsets, locating program zero, loading programs, running programs, editing programs and controlling part size with wear offsets. You will set up and machine three parts to take with you. Class size is limited to maximize hands-on time. Reserve your seat today!  
Contact hours: 12.5  
Not financial aid eligible.
ZCNC-1016 CNC Mill Lab 2
1.25 CEU's
Put your theory to work in this hands-on lab. Work as a member of a team by using a blueprint to program, set up and machine parts on a CNC mill. Learn the job tasks, and if you're already employed in the industry, you can put them into practice each day as your knowledge grows.
Contact hours: 12.5
Not financial aid eligible.

ZCNC-1017 CNC Lathe Lab 2
1.25 CEU's
To be a productive machinist, there is more to learn than the theory of the CNC control. In this hands-on lab, you will work as a member of a team putting theory to work. Each team will be given a blueprint to work from to program, set up, and machine parts on a CNC lathe. Learn the job tasks, and if you're already employed in the industry, you can put them into practice each day as your knowledge grows.
Contact hours: 12.5
Not financial aid eligible.

ZCNC-1038 MasterCAM - Basic Lathe
3.2 CEU's
Modern machine shops rely on Computer-Aided Manufacturing (CAM) software to generate part programs for their CNC machines. In this class, you will learn how to use MasterCAM software to create computer models of parts and generate tool paths to machine parts on a CNC Lathe. You will use 3D graphics to verify the machining process and generate a machine specific G & M code part program with a post processor.
Contact hours: 32
Not financial aid eligible.

ZCNC-1060 CNC Mill and Lathe Operations - Right Skills Now
50 CEU's
Cohort-based training program covering setup and operations of CNC mills and lathes. Program includes a 320-hour internship at a local manufacturing company with an opportunity to earn NIMS CNC lathe and CNC mill operator credentials.
Contact hours: 500
Not financial aid eligible.

ZCNC-1065 MasterCAM Basic Mill Lab
1.25 CEU's
In this hands-on lab, students setup and machine the projects from MasterCAM Basic Mill class.
Contact hours: 12.5
Not financial aid eligible.

ZCNC-1066 CNC Lathe Live Tooling
1.8 CEU's
This course covers the setup, programming and operation of live tooling on a CNC Lathe.
Contact hours: 18
Not financial aid eligible.

ZCNC-1067 MasterCAM Basic Lathe Lab
1.25 CEU's
Hands-on lab in which students set up and machine the projects from MasterCAM Basic Lathe class.
Contact hours: 12.5
Not financial aid eligible.
CNST-1750 Construction Safety
3 Credits
The theories and principles of construction safety and health applied to real-world setting. Upon completion of course materials and required attendance hours, students receive their OSHA 30 certification.
Lecture: 3 hours
Prerequisite(s): None. CTAN Approved: CTCON002.

CNST-2110 Basic Survey Practices
3 Credits
Study of construction site engineering using survey instruments for elevation contours, drainage, and grading for construction. Laser-levels, transits, and total stations will be utilized. Emphasis on instrument applications and field data recording.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1540 Trigonometry and CNST-1731 Construction Print Reading; or departmental approval.
OAN Approved: OET015.

CNST-2131 Construction Methods and Materials
3 Credits
Study of common construction principles that affect jobsite performance, material selection and testing, and the general properties of traditional materials used. There will be focus on sustainability of materials and an introduction to non-traditional materials used in building assemblies.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment, or concurrent enrollment; and eligibility for MATH-0955 Beginning Algebra; or departmental approval.
OAN and CTAN Approved: OET016 and CTCON003.

CNST-2150 Building Enclosures
3 Credits
Analysis of wall, roof, and floor assemblies for residential and light commercial construction with a concentration in thermal, air, and moisture control. Includes laboratory activities for constructing a building enclosure with non-traditional techniques and materials, including structural insulated panels, engineered lumber, fiber cement siding, composite decking, and insulated concrete forms.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment, or departmental approval.

CNST-2201 Introduction to Building Information Modeling
3 Credits
Introduction into building information modeling (BIM). 3-dimensional software will be used to generate a building model and related drawings used in a set of contract documents. BIM software also used to determine material take-off quantities for to create estimates.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): CNST-1731 Construction Print Reading; or departmental approval.

CNST-2210 Mechanical and Electrical Systems
3 Credits
Study of mechanical and electrical systems for building construction, water supply, waste and sanitation. Heat loss, heat gain and hydronic heating systems; forced air and solar heating systems used in buildings; electrical systems of power distribution and lighting for commercial buildings among the topics covered.
Lecture: 3 hours
Prerequisite(s): CNST-2131, Construction Methods and Materials or concurrent enrollment; and eligibility for MATH-0955 Beginning Algebra; or departmental approval.

CNST-2250 Advanced Construction Print Reading
3 Credits
Advanced print reading for commercial construction drawings. Interpreting drawing details in accordance to project manual, and material quantity take-off. Constructability review processes will be used to determine effective design and sustainability.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-1731 Construction Print Reading, or departmental approval.

CNST-2330 Construction Scheduling
3 Credits
Capstone course that involves time management of construction activities. Use of Gantt charts, activity on arrow diagrams, PERT techniques, and critical path method. Computer scheduling software will be used throughout the course.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-2131 Construction Methods and Materials, or departmental approval.

CNST-2410 Principles of Structural Design
3 Credits
Study of building design structural systems. Topics include steel beams, columns, base plates, fasteners and weldments. Emphasis on tension and compression for engineered building products and concrete structures.
Lecture: 3 hours
Prerequisite(s): MET-1601 Technical Statics.

CNST-2510 Introduction to Asset Management
3 Credits
Introduction to asset management with a focus on utility systems spread over a geographic region. Covers principles of cartography and methods for presenting geographic information. Coordinate systems, map projections, scale, topographic mapping, thematic mapping, spatial analysis methods, and mapping accuracy are expanded upon from introductory course. Use Geographic Information Systems (GIS) to analyze and model engineering systems. Probability models and ways to achieve levels of service within an overall system will be covered. Laboratory element with case studies incorporated.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2430 Engineering Probability and Statistics; and CNST1740 Fundamentals of Geographic Information Science.
CNST-2631 Construction Management Systems
3 Credits
Study of construction management practices including general contracting, subcontracting, project delivery, cost control, change processes and procurement. Introduction into lien implications, safety, quality and jobsite labor relations.
Lecture: 3 hours
Prerequisite(s): CNST-2131 Construction Methods and Materials.

CNST-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application.

CNST-2990 Construction Estimating & Cost Analysis
3 Credits
Capstone course in Construction Engineering Technology program. Includes construction cost estimates, cost forecasting, and cost reports for a construction project using computer software.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-2131 Construction Methods and Materials or concurrent enrollment.

Criminal Justice (CJ)

CJ-1000 Introduction to Criminal Justice
3 Credits
History and philosophy of criminal justice in America; review system, identification of the subsystems, role expectations, and relationships. Theory of crime, punishment, and rehabilitation. Ethics, education, and training required in law enforcement, nature of formal and informal decision-making in criminal justice, sociology, politics, economics, and law of criminal justice.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OSS031. CTAN Approved: CTCJ001.

CJ-1010 Computers in Criminal Justice
2 Credits
Introduction to uses and applications of computer technology in the criminal justice field. Includes discussions of basic terminology; common applications in database, word processing, and spreadsheet uses; and an introduction to the forensic software. Comprehensive examination of computer crimes and procedures, techniques, and legal constraints which apply.
Lecture: 2 hours
Prerequisite(s): None.

CJ-1070 Introduction to Corrections
3 Credits
Introduction to processes, procedures and issues in contemporary corrections. History and evolution of various elements of juvenile and adult correction systems.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OSS033

CJ-1050 Introduction to Homeland Security
2 Credits
As part of the Basic Police Academy certified by the Ohio Peace Officer Training Commission, this course will provide a basic overview into the topic of Homeland Security. Topics will include Hazmat and WMD Awareness for the First Responder and Bombs, Explosives and Incendiary Devices.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admitted to OPOTA Basic Police Academy.

CJ-11050 Introduction to Security
2 Credits
Historical perspective on development of security with definition of current role and function. Studies in fundamental principles of risk assessment, physical plant security, defense systems, internal security, fire prevention and disaster preparedness in the security field.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or concurrent enrollment; or appropriate score on English Placement Test.

CJ-1020 Introduction to Corrections
3 Credits
Introduction to processes, procedures and issues in contemporary corrections. History and evolution of various elements of juvenile and adult correction systems.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OSS031. CTAN Approved: CTCJ001.

CJ-1111 Constitutional Law for Police
3 Credits
Development of the Federal Constitution and history of Bill of Rights. In-depth analysis of First, Fourth, Fifth, Sixth, Eighth and Fourteenth Amendments. Impact of recent court decisions on these amendments and their implications for criminal justice officials.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or concurrent enrollment; or appropriate score on English Placement Test.

CJ-1120 Criminal Court Procedures
2 Credits
Exploration of U.S. adversary system of criminal justice. Examines components including legislature, police, prosecution, courts and corrections. Comprehensive review of procedures, beginning with arrest through post-trial motions and sentencing.
Lecture: 2 hours
Prerequisite(s): None.

CJ-1130 Criminal Evidence
2 Credits
Overview of trial procedures: classification of evidence, proof, presumptions, relevance, eyewitness identification, testimonial privileges, character, hearsay, impeachment, scientific evidence, collection and preservation of evidence.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or concurrent enrollment; or appropriate score on English Placement Test.
CJ-1200 Economic Crime Investigation
3 Credits
Examines conduct of individuals, corporations, institutions and government agencies as it relates to economic crime. Ethical dilemmas will be analyzed using critical thinking to build and manage criminal cases for successful prosecution.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-1300 Patrol Operations
4 Credits
Examination of techniques required in performing patrol operations. Covers preparation, vehicle patrol, foot patrol, crimes in progress, prowler calls, building searches, performance of stops and approaches, vehicle identification, and prisoner booking and handling. Incorporates report writing required of police officers. Discussion of various types of forms and reports necessary and methods for accurate completion. Use and structure of field notes, investigative report form and content, and use of proper grammar in narrative reports.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to the Basic Police Academy. CTAN Approved: CTBPO001 (2 of 7 courses, all must be taken).

CJ-1310 Traffic Enforcement and Investigation
3 Credits
Examination of traffic accident investigation, motor vehicle law enforcement, crimes, and other control procedures utilized in highway transportation system. Comprehensive study of enforcement principles, problems, and procedures and how accident investigation relates to overall community safety.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: comparable knowledge or skills. CTAN Approved: CTBPO001 (3 of 7 courses, all must be taken).

CJ-1320 Ethics in Criminal Justice
2 Credits
Police conduct is examined relative to ethical and legal principles. Application of federal and state, civil, criminal and administrative law. Sources of potential ethical lapses for law enforcement are analyzed and strategies are formulated to address them both proactively and administratively.
Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment.

CJ-1330 Criminal Law
3 Credits
Nature of the criminal act, essential elements for prosecution and defense, legal theories of responsibility, overview of common law offenses, and identification of emerging trends in law.
Lecture: 3 hours
Prerequisite(s): None.

CJ-1400 Assets Protection
4 Credits
In-depth study of principles of loss prevention with emphasis on risk management. Examination of concepts of physical security with management systems; physical security requirements; alarm systems; planning and vulnerability assessments and interaction with law enforcement.
Lecture: 4 hours
Prerequisite(s): ENG-1010 College Composition I.

CJ-1500 Community Intervention Resources
4 Credits
Analysis of community-based resources designed for intervention, prevention and control or rehabilitation of juvenile or adult offender.
Lecture: 4 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2200 Interviews & Interrogations
3 Credits
Development of the skills necessary to elicit information from potential witnesses and/or offenders. Topics include deception detection, the art of interviewing, and the use of proven interrogation techniques.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2210 Organized Crime
3 Credits
History and legal analysis of criminal enterprises in America, including their pragmatic operation and the criminal justice response using investigative techniques, and court sentencing to disrupt illegal operations.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2230 Undercover Operations
3 Credits
History and techniques of undercover operations, both long and short term infiltration. Includes theoretical aspects of undercover work as well as the practical aspects via role-playing and actual field exercises.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2300 Juvenile Delinquency
2 Credits
Juvenile delinquency as it negatively affects a family, community and how the police and court structure and reintegrate youthful offenders into society.
Lecture: 2 hours
Other Required Hours: Practicum: 8 hours per week; Seminar: 1 hour per week.
Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: comparable knowledge or skills.

CJ-2360 Community Oriented Policing
3 Credits
Analysis and effectiveness of neighborhood style policing efforts to reduce crime and disorder.
Lecture: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval.

CJ-2370 Fire Arms Techniques
3 Credits
Units of study include safety techniques, handgun and related equipment, basic fundamentals of pistol craft, one-hand techniques, multiple targets, low light level conditions, use of protective cover, and shotgun training.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval: successful completion of Basic Police Academy at Cuyahoga Community College. CTAN Approved: CTBPO001 (4 of 7 courses, all must be taken).
CJ-2380 Defensive Driving
2 Credits
Emergency vehicle operation under strenuous conditions for law enforcement.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): Departmental approval: admission to the Basic Police Academy. CTAN Approved: CTBPO001 (5 of 7 courses, all must be taken).

CJ-2390 The Investigative Process
4 Credits
Overview of investigative methods including databases and background checks. In-depth look at the criminal investigation process with a focus on crime scene, reports and evidence identification. Specific investigative methods for particular crime types are analyzed.
Lecture: 4 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval: admission to the Basic Police Academy.

CJ-2400 Security Management
4 Credits
Comprehensive examination of the organization, staffing, supervision and administration of the security function. Focuses on general security management, supervision and operational management along with public relations.
Lecture: 4 hours
Prerequisite(s): CJ-1050 Introduction to Security or departmental approval: prior knowledge or experience.

CJ-2410 Security Investigation
3 Credits
Intensive examination of investigative function as it relates to private security. Criminal and non-criminal investigations. Study of databanks, surveillance methods, interviews, backgrounds, and report preparation.
Lecture: 3 hours
Prerequisite(s): CJ-1050 Introduction to Security departmental approval: prior knowledge or experience.

CJ-2420 Legal Aspects of Private Security
3 Credits
Study of various Federal and State laws and impact on security management process. In-depth examination of state criminal code as applied to private security.
Lecture: 3 hours
Prerequisite(s): CJ-1050 Introduction to Security or departmental approval: prior knowledge or experience.

CJ-2440 Protection Services
2 Credits
Examine the role of those tasked with protecting assets, including critical infrastructure identified by the Department of Homeland Security and other public and private property.
Lecture: 2 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: prior equivalent experience.

CJ-2510 Community Supervision and Aftercare
4 Credits
Examine various aspects of contemporary community-based corrections practices and aftercare programs to reintegrate criminal offenders into society in a constructive way.
Lecture: 4 hours
Prerequisite(s): CJ-1070 Introduction to Corrections or departmental approval: comparable knowledge or skills.

CJ-2530 Correctional Case Management
3 Credits
Application of counseling techniques applicable to the correctional offender involving field and clinical situations simulation for students to gain experience in interviewing, chronological recording, report writing, and oral presentation of cases.
Lecture: 3 hours
Prerequisite(s): CJ-1070 Introduction to Corrections or departmental approval: comparable knowledge or skills.

CJ-2812 Special Topics: Introduction to Medicolegal Death Investigation
3 Credits
This course will serve as an introduction to the Medicolegal Death Investigation process. The course will cover history, procedures, report writing, and medical terminology commonly found in the medicolegal field. Students will enhance their knowledge by conducting investigations of dynamic mock scenes and witnessing an autopsy.
Lecture: 3 hours
Prerequisite(s): None.

CJ-2830 Cooperative Field Experience
1-3 Credits
Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): Departmental approval: formal application into the Cooperative Education Program.

CJ-2840 Corrections: Principles and Practices
3 Credits
Students placed in appropriate criminal justice agency facility under guidance of experienced practitioner with a focus on application of corrections principles.
Lecture: 1 hour
Other Required Hours: Practicum: 8 hours per week. Seminar 1 hour per week.
Prerequisite(s): CJ-2510 Community Supervision and Aftercare.

CJ-2990 Issues in Supervision
4 Credits
Capstone Course in Criminal Justice. Comprehensive review of law enforcement processes, accomplished by looking at role of supervisor and his/her responsibility to the department and community. Further application of law enforcement principles by use of current readings in criminal justice.
Lecture: 4 hours
Prerequisite(s): Departmental approval: completed 20 credits in Criminal Justice.
Dance (DANC)

DANC-1100 Dance Appreciation
3 Credits
This course explores dance as it relates to artistic, cultural, religious, social and historical contexts. Through viewing recorded and live dance, reading, writing, discussing, and moving, students will explore dance as a mode of human expression and communication. Students will learn a basic history of dance allowing them to identify different styles, important contributors, and to develop a framework for discussing types of movement.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

DANC-1200 Conditioning for the Performing Artist I
1 Credit
Introduce and practice basic physical conditioning techniques and exercises to support training and performance. Focus on correct practice, experiential anatomy, alignment, control, balance, breath, and integrating the mind and body (somatics). Exercises are practiced on the floor, sitting, standing, and throughout the studio. Special equipment: Pilates/yoga mat and towel. May be repeated up to four times for credit.
Laboratory: 2 hours
Prerequisite(s): None.

DANC-1220 Theatre Dance/Stage Movement
3 Credits
Basic stage geography, and theatre dance: jazz, latin, waltz, polka, and musical staging for singers and actors. Non-theatre majors learn techniques to analyze and control non-verbal communication (body language). Control and organization of space, energy and time, including basic stage combat, applied to group activities.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

DANC-1401 African Dance I
1 Credit
First in a two-course sequence. Introduction to the fundamentals and basic movements of dances from West Africa. Experience traditional dances that celebrate rites of passage, harvest, courtship and healing/celebration of life. Through these traditional dances and rhythms, dancers will understand the commonalities of dance and music in world cultures and build mutually supportive relationships, reflective of actual dance in West African villages. Community is achieved through dance and collective work towards a final presentation.
Laboratory: 3 hours
Prerequisite(s): None.

DANC-1501 Dance Fundamentals
3 Credits
Introduction and practice of fundamental ballet, modern/contemporary, and jazz dance techniques. Creative exploration through basic dance improvisation and choreography. Emphasis on development of body and spatial awareness, strength, flexibility, and coordination within various dance forms. Exercises and basic dance combinations performed on the floor, at the ballet barre, and traveling through the studio space. Reflection on cultural and historical context. Discussion of related topics.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

DANC-1510 Dance II
3 Credits
Further study of secondary techniques of modern dance. Stresses dance as artistic form of self expression. Students identify variety of rhythms and perform secondary and intermediate dance combinations.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): DANC-1501 Dance Fundamentals, or departmental approval: comparable knowledge or skills.

DANC-1520 Ballet I
1 Credit
First in a three-course sequence. Covers the fundamentals of classical ballet to prepare students for further training in ballet. Emphasis will be placed on developing strength, flexibility, postural alignment, and endurance in the area of ballet technique and conditioning. Students will follow a typical ballet class structure with an emphasis on mastering basic barre exercises. May be repeated up to four times for credit.
Laboratory: 3 hours
Prerequisite(s): DANC-1501 Dance Fundamentals, or departmental approval: permission of instructor.

DANC-1530 Contemporary/Modern Dance I
2 Credits
First in a three-course sequence. Introduce and practice fundamental movement vocabulary and concepts of modern/contemporary dance. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Emphasis on body awareness, spatial awareness, and musicality. Discover the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary/modern dance training. May be repeated up to four times for credit.
Laboratory: 4 hours
Prerequisite(s): DANC-1501 Dance Fundamentals.

DANC-1540 Jazz Dance I
1 Credit
First in a two-course sequence. Introduces principles of jazz dance technique and styles. Covers the fundamentals through basic physical skills, terminology and history. The course is taught in progression, teaching basics in the beginning and each week building upon that foundation.
Laboratory: 3 hours
Prerequisite(s): DANC-1501 Dance Fundamentals, or departmental approval: permission of instructor.

DANC-1580 Independent Study in Dance
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
DANC-182H Honors Independent Study in Dance
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

DANC-2300 Dance III: Technique
2 Credits
Intermediate dance techniques, concepts and theories. Studio work challenges and nurtures students creative and interpretive ability and performance techniques.
Laboratory: 4 hours
Prerequisite(s): DANC-1510 Dance II, or departmental approval: comparable knowledge or skills.

DANC-2310 Dance IV: Technique
2 Credits
Advanced dance techniques emphasizing dynamic variety and challenging physical limitations and movement memory. Exploration of different modern techniques and dance accompaniment applied to studio work.
Laboratory: 4 hours
Prerequisite(s): DANC-2300 Dance III: Technique, or departmental approval: comparable knowledge or skills.

DANC-2400 African Dance II
1 Credit
Provides a deeper exploration of the fundamentals and basic movements of dances from West Africa. Experience traditional dances that celebrate rites of passage, harvest, courtship and healing/celebration of life. Through these traditional dances and rhythms, dancers will gain deeper understanding of the commonalities of dance and music in world cultures and build mutually supportive relationships. Dancers assume leadership and increase individual contributions to community by working towards a final presentation.
Laboratory: 3 hours
Prerequisite(s): DANC-1401 African Dance I.

DANC-2520 Ballet II
1 Credit
Second in a three-course sequence. Covers intermediate classical ballet technique to prepare students for more advanced training in ballet. Emphasis will be placed on mastery of fundamental ballet exercises at the barre, with intermediate-level execution of center floor combinations. Students will follow a typical ballet class structure with an emphasis on clarity of movement, and increased speed, and proper technique. May be repeated up to four times for credit.
Laboratory: 3 hours
Prerequisite(s): DANC-1520 Ballet I.

DANC-2530 Contemporary/Modern Dance II
2 Credits
Second in a three-course sequence. Continued practice of fundamental movement vocabulary and concepts of contemporary/modern dance. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Further emphasis on body awareness, spatial awareness, musicality, and clarity. Develop the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary/modern dance training. May be repeated up to four times for credit.
Laboratory: 4 hours
Prerequisite(s): DANC-1530 Contemporary/Modern Dance I, or departmental approval.

DANC-2540 Jazz Dance II
1 Credit
Second in a two-course sequence. Continuation of the principles of jazz dance technique and styles. Students will further explore the principles of basic physical skills, terminology and history of jazz at an intermediate level. The course is taught in progression, teaching basics in the beginning and each week building upon that foundation.
Laboratory: 3 hours
Prerequisite(s): DANC-1540 Jazz Dance I.

DANC-2600 Dance Improvisation and Choreography
1 Credit
Introduce theoretical and practical approaches to exploring movement (improvisation) and creating dances (choreography). Explore elements of the creative process, including movement studies, research and development, inspirational sources, intention, collaboration and presentation. This creative development course is appropriate for anyone in the performing arts.
Laboratory: 2 hours
Prerequisite(s): DANC-1501 Dance Fundamentals, or THEA-1500 Acting I, or THEA-1520 Improvisation and Performance I.

DANC-2620 Ballet III
1 Credit
Final class in a three course sequence. Building on the fundamentals of prior classes, students will apply technique to the execution of performing complex combinations across the floor. Development of spatial awareness, musicality, strength and flexibility will be incorporated with additional emphasis on movement dynamics. Proper jumping, leaping, and turning techniques will be emphasized. May be repeated up to four times for credit.
Laboratory: 3 hours
Prerequisite(s): DANC-2530 Ballet II.

DANC-2630 Contemporary/Modern Dance III
2 Credits
Last in a three-course sequence. Further practice of movement vocabulary and concepts of contemporary/modern dance with emphasis on increasing physical competence and application. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Further emphasis on body awareness, spatial awareness, musicality, clarity, and quality of movement. Utilize the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary dance training. May be repeated up to four times for credit.
Laboratory: 4 hours
Prerequisite(s): DANC-2530 Contemporary/Modern Dance II, or departmental approval.
**DANC-2730 Teaching Dance**  
**3 Credits**  
Introduction to the techniques, principles, philosophies, and methodologies of teaching dance. Covers the fundamentals of teaching dance in various settings. Recommended for individuals who have an interest in teaching dance.  
*Contact hours: 36*  
*Not financial aid eligible.*  
*Lecture: 2 hours. Laboratory: 2 hours*  
*Prerequisite(s): DANC-1100 Dance Appreciation, and DANC-1520 Ballet I, and DANC-1530 Contemporary/Modern Dance I, and DANC-1540 Jazz Dance I, or DANC-1401 African Dance I.*  

**DANC-2820 Independent Advanced Study in Dance**  
**1-3 Credits**  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.  
*Contact hours: 8*  
*Not financial aid eligible.*  
*Lecture: 1-3 hours*  
*Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.*  

**DANC-282H Advanced Honors Independent Study in Dance**  
**1-3 Credits**  
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
*Contact hours: 36*  
*Not financial aid eligible.*  
*Lecture: 1-3 hours*  
*Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.*  

**DANC-2940 Field Experience**  
**1-3 Credits**  
Experience in an approved work activity under supervision of worksite supervisor and faculty member or program manager. Work activity may be paid or unpaid and must be related to a student’s learning or occupational objectives. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester.  
*Other Required Hours: Field Experience: 12 hours per week for 15 weeks. 180 hours per semester.*  
*Prerequisite(s): Departmental approval.*

**Data Analytics (ZDTM)**  

**ZDTM-1007 Data Analytics for Business Transformation**  
**0.8 CEU's**  
Businesses are increasingly looking to take advantage of data analytics to be competitive. In addition to data scientists, organizations need data-savvy business leaders who can identify opportunities to solve business problems using advanced analytics and business intelligence to lead an analytical team. This course gives business leaders the skills and knowledge to better communicate, implement and manage analytical efforts for their business. It describes how to get started and what is required to effectively run projects which leverage data analytics.  
*Contact hours: 8*  
*Not financial aid eligible.*

**ZDTM-1011 Data Science and Big Data Analytics**  
**3.6 CEU's**  
This course provides practical, foundation-level training that enables immediate and effective participation in big data and other analytics projects. It includes an introduction to big data and the Data Analytics Lifecycle to address business challenges that leverage big data. The course provides grounding in basic and advanced analytic methods and an introduction to big data analytics technology and tools, including MapReduce and Hadoop. Labs offer opportunities for students to learn how these methods and tools can be applied to real-world business challenges from a practicing data scientist. The course takes an "open," or technology-neutral approach, and includes a final lab that addresses a big data analytics challenge by applying the concepts taught in the course in the context of the Data Analytics Lifecycle. The course prepares students for the Proven™ Professional Data Scientist Associate (EMCDSA) certification exam.  
*Contact hours: 36*  
*Not financial aid eligible.*

**ZDTM-1012 Advanced Methods in Data Science and Big Data Analytics**  
**3.6 CEU's**  
This course builds on skills developed in the Data Science and Big Data Analytics course. The main focus areas are Hadoop (including pig, Hive and HBase), natural language processing, social network analysis, simulation, random forests, multinomial logistic regression and data visualization. The course takes an "open," or technology-neutral, approach and utilizes several open-source tools to address big data challenges.  
*Contact hours: 36*  
*Not financial aid eligible.*

**Deaf Interpretive Services (DIS)**  

**DIS-1300 Interpreting Fundamentals**  
**3 Credits**  
History of interpreting and survey of the profession. Introduction to Registry of Interpreters of the Deaf’s (RID) Code of Ethics, and certification process. Orientation to Deaf community, language and culture. Introduction to basic interpreting settings. Research into variety of topics about the profession. Present the cognitive model of interpreting.  
*Lecture: 3 hours*  
*Prerequisite(s): None.*

**DIS-1310 Interpreting I**  
**2 Credits**  
First in two-course sequence. Theoretical and practical approach to sign language interpreting, including platform and interview-style interpreting. Practical application in rendering spoken messages into American Sign Language. Role-playing in various basic interpreting situations. Exposure to other communication systems.  
*Lecture: 1 hour. Laboratory: 3 hours*  
*Prerequisite(s): DIS-1300 Interpreting Fundamentals and departmental approval: admission to the program.*
DIS-2320 Educational Interpreting
3 Credits
Analysis and monitoring of students' understanding of interpreting/transliterating in educational setting. Application of Educational Code of Ethics, Ohio Guidelines for Educational Interpreters, manual code systems, and technical vocabulary. Study of history of Deaf Education, educational laws and support services, child development, and best practices in educational setting.
Lecture: 3 hours
Prerequisite(s): DIS-1300 Interpreting Fundamentals, and DIS-1310 Interpreting I.

DIS-2410 Voicing
2 Credits
Development of voicing skills needed in voice-to-sign interpreting for people who are deaf, with emphasis on public speaking, signing and performance techniques. Emphasis on vocabulary selection, vocal inflection, and register in multiple settings, as well as various sign systems.
Lecture: 1 hour. Laboratory: 3 hours

DIS-2420 Advanced Voicing
2 Credits
Advanced development of voicing skills needed in voice-to-sign interpreting for people who are deaf, with emphasis on public speaking, signing and performance techniques. Emphasis on in-depth analysis of vocabulary selection, vocal inflection, and register in multiple settings, as well as various sign systems.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): DIS-2410 Voicing, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and ASL-2420 Advanced American Sign Language II.
DIS-2740 Field Experience Lab II
1 Credit
Second in a two-course sequence. Companion course Field Experience II. Practical approach to advanced sign language interpreting, in a lab setting, with emphasis on the various and unique situations that occur in the field of interpreting. In-depth analysis of advanced interpreting skills and ethical choices as they relate to distinct scenarios and the Registry of Interpreters for the Deaf (RID) Code of Professional Conduct.
Laboratory: 3 hours
Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting, and DIS-2410 Voicing; and concurrent enrollment in DIS-2940 Field Experience II; and concurrent enrollment in DIS-2971 Field Experience Seminar II.

DIS-2820 Independent Advance Study/Research in Deaf Interpretive Services
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Score.

DIS-2940 Field Experience II
1 Credit
Second in a two-course sequence. Experience a variety of situations and concepts in actual work settings through observational and practical interpreting experiences. K-12 educational and community-based experiences required. Supervision by college-approved interpreters.
Other Required Hours: Field Experience: 12 hours per week (180 hours total)
Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-1402 American Sign Language Linguistics, and DIS-2310 Interpreting II, and DIS-2410 Voicing, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-2940 Field Experience II; and concurrent enrollment in DIS-2971 Field Experience Seminar II.

DENT-1300 Preventive Oral Health Services I
4 Credits
Introduction to dental hygiene practice including professionalism, infection control, medical history, vital signs, oral inspection, preventive oral health, oral accretions, technique for oral prophylaxis and medical emergencies.
Lecture: 2 hours. Laboratory: 6 hours
Prerequisite(s): Departmental approval: admission to program.

DENT-1311 Dental Anatomy, Histology & Embryology
2 Credits
Study of the form, function and comparative anatomy of primary and permanent teeth, tooth numbering, and dentition periods. Embryologic development of the face, neck, orofacial structures and teeth. Histologic study of the gingiva, oral mucosa and attachment apparatus.
Lecture: 2 hours
Prerequisite(s): Concurrent enrollment in DENT-1300 Preventive Oral Health Services I.

DENT-1320 Dental Hygiene Fundamentals
1 Credit
Reinforcement of first term clinical skills with an emphasis on radiographic technique, principles of instrumentation and patient assessment.
Laboratory: 2 hours
Prerequisite(s): Concurrent enrollment in DENT-1300 Preventive Oral Health Services I; and concurrent enrollment in DENT-1330 Radiology; and concurrent enrollment in DENT-1311 Dental Anatomy, Histology & Embryology; and departmental approval.

DENT-1331 Dental Imaging
3 Credits
History and development of the x-ray, its nature and properties. Biological effects of x-radiation with application of Safe Operating Procedures to protect the operator and patient. Theory and practice in fundamentals of oral imaging techniques including receptor placement, tube angulation, scanning, mounting and interpretation of images. Digital sensors and photostimulable phosphor plate receptors for periapical, bitewing, and occlusional intraoral exposures and localization techniques, and panoramic extraoral imaging techniques will be discussed. Students will expose image receptors on a manikin. Consists of lecture modules of instruction correlated with weekly laboratory modules.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Departmental acceptance and concurrent enrollment in DENT-1300 Preventive Oral Health Services I.

DENT-1341 Foundational Principles of Dental Hygiene Practice
1 Credit
Study of ethical, moral and professional topics in Dental Hygiene. Introduction to ethical theories and principles related to patient care and decision-making models. Exploration of ethical dilemmas through applied case scenarios. Discussion and application of required policies and procedures related to the health and safety of the dental hygienist and patient.
Lecture: 1 hours
Prerequisite(s): Departmental approval, or acceptance to the Dental Hygiene program.
DENT-1400 Preventive Oral Health Services II
5 Credits
Implementation of preventative oral health. Students provide oral health treatments to clients in the dental hygiene clinic. Topics include the special needs of patients with oral rehabilitation, pain management, geriatric concerns, oral cancer, handicaps, mental disorders, cardiovascular disease and diabetes.
Lecture: 1 hour. Laboratory: 12 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1410 Current Concepts in Dental Materials
2 Credits
Physical properties of dental materials and basic principles of their preparation. Application of principles of dental materials by manipulating gypsum, cements, bases, liners, resin, composite, impression materials, and pit and fissure sealant materials in the laboratory and/or clinical setting.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1420 Periodontics I
2 Credits
Lecture: 2 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1431 Head and Neck Anatomy
2 Credits
Study of structure and function of head and neck. General anatomy of the skull, related muscles, vascular and nerve supply and lymphatics of the region considered. Focus on muscles of mastication and their relationship to the temporomandibular joint; facial and trigeminal nerves and their relationship with dental injections. Discussion on spread of infection and its clinical manifestations.
Lecture: 2 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1440 General and Oral Pathology
2 Credits
General principles of pathology including, inflammation, neoplasia, metabolic and endocrine disturbances, and other systemic diseases affecting the general and oral health of the patient.
Lecture: 2 hours
Prerequisite(s): DENT-1311 Dental Anatomy, Histology & Embryology and DENT-1300 Preventive Oral Health Services I.

DENT-2100 Dental Hygiene Clinical Skills Reinforcement
1-2 Credits
Designed for students desiring to improve dental hygiene clinical skills. Emphasis on the reinforcement of assessment, instrumentation, calculus detection and removal, radiographic techniques and medical emergency situations. Possible offsite clinical outreach experience included. Also appropriate for licensed hygienist returning to the workforce or students requiring remediation of skills prior to sitting for a clinical board examination.
Laboratory: 3-6 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I, or departmental approval.

DENT-2200 Local Anesthesia and Pain Management
2 Credits
Study of the anatomy, pharmacological and psychological aspects, systemic complications and medical emergencies related to pain management in the dental environment. Laboratory experience in the administration of local anesthesia and nitrous oxide.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): DENT-1431 Head and Neck Anatomy, or departmental approval.

DENT-2300 Preventive Oral Health Services III
5 Credits
Continuation of the study and clinical application of the principles involved in the provision of oral prophylaxis and periodontal treatment, exposure of dental images, application of preventive therapeutics and the development of individualized self-care education plans. Students will develop and present a dental case in both oral and written form.
Lecture: 1 hour. Laboratory: 12 hours
Prerequisite(s): DENT-1400 Preventive Oral Health Services II.

DENT-2321 Periodontics II
1 Credit
Study of advanced non-surgical and surgical treatment modalities and treatment planning for periodontal diseases. Additionally, presentation on dental implants, occlusal effects on the periodontium, periodontal emergencies and the human immunodeficiency virus and its clinical manifestations.
Lecture: 1 hour
Prerequisite(s): DENT-1420 Periodontics I, and BIO-2500 Microbiology, or departmental approval.

DENT-2332 Pharmacology and Therapeutics
2 Credits
Discussion of pharmacological effects of drugs and anesthetics, adverse reactions, and their usual indications and contraindications for preoperative and postoperative client care. Overview of agents used specifically for pain management and medical emergencies presented, referencing the health history and dental hygiene assessment for treatment protocols.
Lecture: 2 hours
Prerequisite(s): DENT-1400 Preventive Oral Health Services II, and BIO-2500 Microbiology.

DENT-2340 Community Oral Health I
1 Credit
Lecture: 1 hour
Prerequisite(s): DENT-1400 Preventive Oral Health Services II.

DENT-2400 Preventive Oral Health Services IV
5 Credits
Continuation of clinical experience integrating social and basic sciences within the scope of dental hygiene practice. Emphasis on professionalism, time management, and advanced dental hygiene techniques. Incorporation of dietary analysis procedures.
Lecture: 1 hour. Laboratory: 12 hours
Prerequisite(s): DENT-2300 Preventive Oral Health Services III, and DIET-1220 Nutrition for Dental Hygiene.
DENT-2440 Community Oral Health II
1 Credit
Review of concepts introduced in Community Oral Health I. Revision of principles of public health dentistry. Concepts of program planning, epidemiology, and organization of dental care delivery system. Research design as it relates to the planning, implementing, and evaluating a community outreach project. Community service exit requirement for graduation from Dental Hygiene program.
Lecture: 1 hour
Prerequisite(s): DENT-2340 Community Oral Health I.

DENT-2820 Independent Study/Research in Dental Hygiene
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DENT-2990 Dental Hygiene Practice
1 Credit
Capstone course in Dental Hygiene. Preparation for entry into the dental hygiene profession. Topics include seeking and preparing for employment, obtaining a dental hygiene license, legal and ethical concerns of dental hygiene practice, aspects of practice management and planning for the future.
Lecture: 1 hour
Prerequisite(s): DENT-2300 Preventive Oral Health Services III.

Diagnostic Medical Sonography (DMS)

DMS-1071 Concepts of Physics in Diagnostic Sonography
2 Credits
Introduction to general physical concepts and related mathematics. Motion, major laws of physics, properties of matter, thermodynamics, basic electricity and electromagnetism, light properties, sound properties, and nuclear physics and their relationship to diagnostic ultrasound discussed.
Lecture: 2 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test to enroll in MATH-1530 College Algebra, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-1303 Introduction to Sonography
2 Credits
Introduction to the profession of Diagnostic Medical Sonography. Topics focus on professionalism, sonographic terminology, anatomical scanning planes, standard presentation and annotation of ultrasound images, body mechanics, and ergonomics with an overview of diagnostic related imaging specialties.
Lecture: 2 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I or concurrent enrollment; and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-1311 Initial Sonographic Scanning
2 Credits
Application of transducer manipulations, instrumentation controls, body mechanics, sonographic scanning techniques, interpersonal communication, recognition of anatomic structures, and practice of patient care skills in laboratory setting under personal supervision of Registered Diagnostic Medical Sonographer.
Laboratory: 6 hours
Prerequisite(s): MA-1010 Introduction to Medical Terminology or concurrent enrollment; or MA-1020 Medical Terminology I or concurrent enrollment; and concurrent enrollment in DMS-1401 Abdominal Sonography I, or DMS-1500 Gynecologic and Obstetrical Sonography; or DMS-1602 Echocardiography I, or DMS-1701 Vascular Sonography I, or departmental approval: admission to Diagnostic Medical Sonography program.

DMS-1320 Introduction to Sonographic Scanning
1 Credit
Introduction to and evaluation of dexterity, visual acuity and sensitivity required to create a sonographic image essential to Diagnostic Medical Sonography. Demonstration through application and manipulation of instrumentation, body mechanics, image annotation and recognition of anatomic structures.
Lecture: .5 hours. Laboratory: 1.5 hour
Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography, or concurrent enrollment; and DMS-1303 Introduction to Sonography, or concurrent enrollment.

DMS-1351 Patient Care Skills
1 Credit
Discussion, demonstration and practice of patient care skills and practical application of basic medical techniques in a lab setting. Introducing principles of patient care including professional communication with diverse populations, safe transferring skills, assessing and attending to patient needs and infection control.
Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

DMS-1381 Cardiac Diagnostic Procedures
3 Credits
Lecture: 2.5 hours. Laboratory: 1.5 hour
Prerequisite(s): None.

DMS-1401 Abdominal Sonography I
4 Credits
Study of adult and pediatric normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of the upper abdomen, peritoneal and retroperitoneal cavity including potential spaces, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature as visualized by ultrasound. Doppler and color Doppler applications for the liver, gallbladder, pancreas, urinary system, gastrointestinal system, portal system, and great vessels. Correlation to other imaging modalities.
Lecture: 4 hours
Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.
DMS-1500 Obstetrical Sonography
4 Credits
Study of normal anatomy and anatomic variants, physiology, pathology, and pathophysicsiology of female pelvis (non-pregnant, post-partum and postmenopausal) and female reproductive system as related to sonography. Includes monitoring infertile patient. Anatomy, physiology, anomalies, and pathology of maternal, embryo, and fetal anatomic structures during the first trimester studied. Delineates purpose and appropriateness of transabdominal versus transvaginal scanning approaches with associated patient and ethical issues. Doppler and color Doppler applications and biometrics of non-gravid uterus and ovaries discussed. Includes demonstration of transabdominal examination.
Lecture: 4 hours
Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1602 Echocardiography I
4 Credits
Theory of echocardiography. Study of normal anatomy, anatomic variants, physiology, pathology, and pathophysicsiology of the heart with ultrasound. Visual pathology recognition and identification on transthoracic examination with an understanding of etiologies of cardiovascular diseases and their affects. Basic understanding of physical concepts and how ultrasound is created and used in an echocardiogram.
Lecture: 4 hours
Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1701 Vascular Sonography I
4 Credits
Specialized study of cerebrovascular and peripheral arterial vascular system as related to ultrasound imaging. Focus on anatomy, hemodynamics, pathology and sonographic appearance of normal and diseased arteries. Discussion of direct/indirect testing methods and the sonographic findings. Explanation of medical and surgical interventions used in the treatment of vascular disease.
Lecture: 4 hours
Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1820 Independent Study in Diagnostic Medical Sonography
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-1940 Field Experience I
1 Credit
Supervised practical application of sonography scanning techniques in clinical setting under personal supervision of registered diagnostic medical sonographer, or qualified physician. Emphasis on simple-level scanning skills. Student develops skills related to departmental processes, procedures, protocols, and patient care. Clinical experiences in an ultrasound lab.
Other Required Hours: 192 hours per semester offering.
Prerequisite(s): DMS-1311 Initial Sonographic Scanning.

DMS-1950 Field Experience II
2 Credits
Supervised practical application of sonography scanning techniques in clinical setting under personal and direct supervision of registered diagnostic medical sonographer or qualified physician. Emphasis on intermediate-level scanning skills. Continued performance of basic-level procedures. Student continues skill development related to departmental processes, procedures, protocols, and patient care. Clinical experience in an ultrasound lab.
Other Required Hours: Field Experience: 360 hours per semester offering.
Prerequisite(s): DMS-1940 Field Experience I.

DMS-2301 Intermediate Sonographic Scanning
2 Credits
Advanced application of transducer manipulations, body mechanics, sonographic scanning techniques, interpersonal communication, recognition of anatomic structures, and practice of patient care skills in laboratory setting under personal supervision of Registered Diagnostic Medical Sonographer. Continue competency in scanning basic exams. Develop scanning skills of intermediate sonographic procedures.
Laboratory: 6 hours
Prerequisite(s): DMS-1311 Initial Sonographic Scanning; and concurrent enrollment in DMS-2401 Abdominal Sonography and concurrent enrollment in DMS-2500 Obstetrical Sonography; or concurrent enrollment in DMS-2602 Echocardiography II; or concurrent enrollment in DMS-2702 Vascular Sonography II.

DMS-2330 Sonographic Pathology
3 Credits
Specialized study of common disease processes relevant to sonographic imaging. Discussion of differences between inflammatory and infectious diseases, congenital, acquired, and hereditary diseases, and benign, malignant, and metastatic neoplasia in the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.
Lecture: 3 hours
Prerequisite(s): BIO-2341 Anatomy and Physiology II; and DMS-1303 Introduction to Sonography; and MA-1010 Introduction to Medical Terminology, or MA-1020 Medical Terminology I; and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-2350 Sonographic Instrument/Physics
3 Credits
Physics and related mathematics as applied to ultrasound including the study of acoustical principles, sound transmission, signal processing, transducer construction, ultrasound instrumentation, quality assurance, and bioeffects of diagnostic ultrasound on soft tissue. Study of resolution, display modes, hemodynamics, Doppler principles and related instrumentation as it relates to ultrasound. Modular courses DMS-235A and DMS-235B will also meet the requirements for this course.
Lecture: 3 hours
Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
DMS-235A Sonographic Principles, Performance, and Safety  
2 Credits  
Physics and related mathematics as applied to ultrasound including the study of acoustical principles, sound transmission, signal processing, transducer construction, ultrasound instrumentation, quality assurance, and bioeffects of diagnostic ultrasound on soft tissue.  
Lecture: 2 hours  
Prerequisite(s): DMS-1071 Physical Concepts in Diagnostic Sonography; and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

DMS-235B Doppler Principles and Instrumentation  
1 Credit  
Study of resolution, display modes, hemodynamics, Doppler principles and related instrumentation as it relates to ultrasound.  
Lecture: 1 hours  
Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-2401 Abdominal Sonography II  
4 Credits  
Continuation of normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of various anatomic structures and organ systems as visualized by ultrasound including: adrenal glands, spleen, breast, neck, thyroid, musculoskeletal, male reproductive system, carotid artery and lower extremity venous vasculature. Also covers the normal anatomy and anatomic variants, physiology, pathology and pathophysiology of pediatric hip, spine, and head as visualized by ultrasound. Study of Doppler and color Doppler applications of above mentioned organs and systems. Correlation to other imaging modalities.  
Lecture: 4 hours  
Prerequisite(s): DMS-1401 Abdominal Sonography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2450 Breast Sonography  
2 Credits  
In-depth study of breast sonography. Study of breast anatomy and physiology as it pertains to medical ultrasound. Detailed discussion of breast pathologies, anatomic variants, benign and malignant lesions, and their anatomic variants, benign and malignant lesions, and their sono graphic appearances. Sonographic physic pertinent to the breast ultrasound exam will be incorporated. Overview of related breast imaging modalities, breast surgical procedures, and breast pathology treatments.  
Lecture: 2 hours  
Prerequisite(s): DMS-1950 Field Experience II or departmental approval.

DMS-2500 Obstetrical Sonography  
4 Credits  
Study of normal anatomy and anatomic variants, physiology, pathology and pathophysiology of the gravid pelvis and fetus during second and third trimesters as related to sonography. Focus on fetal biometry, fetal size and age assessment, fetal maturity of second and third trimester, conditions involving multiple gestations, fetal abnormalities, and effects of maternal disease on the pregnancy. Also includes sono graphic procedures for amniocentesis, chorionic villus sampling, Doppler and color Doppler applications of uterine artery, umbilical cord and fetal aorta. Ethical issues in obstetric sonography and support of parental-fetal bonding discussed.  
Lecture: 4 hours  
Prerequisite(s): DMS-1500 Gynecologic and Obstetrical Sonography; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2602 Echocardiography II  
4 Credits  
Introduction to physical signs symptoms, and indications for an echocardiogram reviewed for each major pathology. History and physical examination, laboratory tests, invasive and non-invasive hemodynamic evaluations used to assess various cardiovascular pathologies. Theory and manipulation of Doppler echocardiography with an introduction to interrogation of technical findings. Determination of blood flow within the normal and diseased heart using Doppler echocardiography and applying principles of hemodynamic effects learned. Color and spectral Doppler techniques discussed as applied to clinical transthoracic and transesophageal echocardiographic examinations as well as stress echocardiography.  
Lecture: 4 hours  
Prerequisite(s): DMS-1602 Echocardiography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2650 Pediatric Cardiac Sonography  
3 Credits  
Study of normal and abnormal cardiac anatomy, fetal heart development and perinatal circulation specific to congenital cardiovascular defects. Focus on pediatric echo protocol, exam considerations for the patient population with congenital heart abnormalities (pediatric and adults). Discussion and case study review of simple to complex congenital heart abnormalities. Sonographer’s role in the operating room and catheterization lab.  
Lecture: 3 hours  
Prerequisite(s): DMS-1950 Field Experience II or departmental approval.

DMS-2702 Vascular Sonography II  
4 Credits  
Specialized study of peripheral venous system and abdominal vessels as related to ultrasound imaging. Focus on anatomy, venous hemodynamics, pathology, sonographic appearance of normal and diseased vessels, testing methods and sonographic impressions. Discussion of penile sonography, test validation/statistics and the correlation of related diagnostic imaging modalites.  
Lecture: 4 hours  
Prerequisite(s): DMS-1701 Vascular Sonography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2750 Principles of Vascular Imaging for Abdomen and Cardiac Sonographers  
3 Credits  
Course designed for sonographers experienced in scanning abdomen and cardiac ultrasound exams. Specialized advanced study of selected vascular examinations in the cerebrovascular, peripheral arterial and peripheral venous systems. Examinations include: carotid, arterial physiologic lower extremity, venous duplex upper and lower extremity. Focus on anatomy, hemodynamics, pathology, sono graphic appearance of normal and diseased vessels, specific testing methods and sonographic impressions. This course is not intended to fulfill the requirements necessary to take the credentialing examination for vascular technology.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): DMS-1950 Field Experience II or departmental approval.
DMS-2760 Transcranial Doppler Sonography
1 Credit
Specialized advance study of intracranial circulation using Transcranial Doppler (TCD) and Transcranial Duplex Imaging (TCI). Focus on anatomy, pathology, applications of TCD/TCI, sonographic scanning technique and interpretation of TCD and TCI.
Lecture: .5 hours. Laboratory: 1.5 hour
Prerequisite(s): DMS-2301 Intermediate Sonographic Scanning, or concurrent enrollment.

DMS-281S Special Advanced Laboratory Topics in Diagnostic Medical Sonography
1-3 Credits
Specialized two-hour lab per credit focusing on advanced topics or current issues in Diagnostic Medical Sonography (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics courses may be applied toward elective and/or program graduation degree requirements.
Laboratory: 2-6 hours
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

DMS-2820 Independent Advanced Study
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DMS-2940 Field Experience III
3 Credits
Supervised practical application of sonography scanning techniques in clinical setting under direct supervision of registered diagnostic medical sonographer or qualified physician. Independent scanning of all levels of procedures with emphasis on accuracy and exam duration. Student focuses skill development of professional and technical accuracy and speed. Clinical experience in an ultrasound lab.
Other Required Hours: Field Experience: 576 hours per semester.
Prerequisite(s): DMS-1950 Field Experience II.

DMS-2950 Field Experience IV
1 Credit
Supervised practical application of sonography scanning techniques in clinical setting under direct supervision of registered diagnostic medical sonographer or qualified physician. Independent scanning of all levels of procedures with emphasis on accuracy and exam duration. Student focuses skill development of professional and technical accuracy and speed. Clinical experience in an ultrasound lab.
Other Required Hours: Field Experience: 192 hours per semester.
Prerequisite(s): DMS-2940 Field Experience III.

DMS-2960 Supplemental Field Experience
2 Credits
Supervised practical application of sonography scanning techniques in clinical setting under personal supervision of registered diagnostic medical sonographer or qualified physician. Emphasis on intermediate scanning skills in the supplemental sonographic specialty. Student develops skills specific to the specialty as related to departmental processes, procedures, protocols, and patient care. Experience in a clinical sonography lab setting.
Other Required Hours: Field Experience: 360 hours per semester offering.
Prerequisite(s): DMS-2950 Field Experience IV

DMS-2981 Specialty Registry Review
1 Credit
Global review of anatomy, physiology, and pathology in relation to sonography. Test taking skills, image identification, and procedural scenarios covered. Special focus on exam content outline topics to assist student preparing to take national credentialing examinations for sonography.
Lecture: 1 hours
Prerequisite(s): DMS-2301 Intermediate Sonographic Scanning.

DMS-2983 Supplemental Specialty Registry Review
1 Credit
Global review of anatomy, physiology, and pathology in relation to the specific sonographic specialty. Test taking skills, image identification, and procedural scenarios covered. Special focus on the specialty exam content outline topics to assist student preparing to take supplemental national credentialing examinations for sonography.
Lecture: 1 hours
Prerequisite(s): DMS-2301 Intermediate Sonographic Scanning.

DMS-2985 Physics Review
1 Credit
Global review of physics in relation to sonography. Test taking skills, image identification, and physical concept scenarios covered. Special focus on exam content outline topics to assist student preparing to take national credentialing examinations for sonography.
Lecture: 1 hours
Prerequisite(s): DMS-235A Sonographic Principles, Performance, and Safety or concurrent enrollment; and DMS-235B Doppler Principles and Instrumentation or concurrent enrollment, or DMS-2350 Sonographic Instruments and Physics, or concurrent enrollment.

DMS-2991 Sonography Capstone
1 Credit
Capstone course in Diagnostic Medical Sonography. Assessment of one's integration of the coursework, knowledge, experience and skills as Diagnostic Medical Sonography student. Preparation for employment interview and presentation of qualifications through a portfolio. Importance of credentialing, profession involvement and continuing education stressed.
Lecture: 1 hours
Prerequisite(s): DMS-1950 Field Experience II.
Dietetic Technology (DIET)

DIET-1050 Sports Nutrition
3 Credits
Nutrition implications for human physical and athletic performance including energy and specific nutrients. Emphasis on food selection to enhance performance and nutrition recommendations with regard to varying athletic activities. Calculation of individual energy needs based on weight and activity level. Assessment of body composition and appropriate use of ergogenic aids. Designed for the causal exerciser, elite athlete, coaches, trainers, and persons recognizing the importance of nutrition to fitness.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DIET-1200 Basic Nutrition
3 Credits
A scientific study of nutrition designed for nursing students, other health care providers and educators. Students will investigate the roles of the nutrients in the functioning of the human body. Overview of nutrient recommendations, food sources and functions of the nutrients, energy requirements, weight control, vegetarianism, and supplement use. Dietary recommendations and food patterns applied to culture, and prevention of nutrition related diseases in a changing society.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

DIET-1220 Nutrition for Dental Hygiene
2 Credits
Nutrition principles related to personal and client care. Dental hygiene students will learn how to apply sound nutrition principles to assessing, diagnosing, planning, implementing and evaluating total care of clients, and how to contribute to nutrition well-being of client.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

DIET-1310 Introduction to Dietetics
2 Credits
Explore information literacy, professionalism, ethics, educational requirements, and governance of the dietetics profession. Includes application of communication, research, and self-assessment practices.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

DIET-1320 Nutrition Applications
1 Credit
Students will create a variety of regular and modified menus using current evidence-based practice tools, and evaluate food choices and existing menus.
Lecture: 1 hour
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test, and DIET-1200 Basic Nutrition or concurrent enrollment.

DIET-1331 Food Production Fundamentals
4 Credits
Application of scientific principles, techniques, and methods of food production for normal and therapeutic meals. Use of food production equipment appropriate for different food service systems. Application of nutrition criteria and quality assurance standards.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher, and DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications.

DIET-1580 Cost Control Procedures
1 Credit
Study of basic food cost control procedures, financial statements and budget preparation as they relate to nutrition services.
Lecture: 1 hour
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math placement test.

DIET-1590 Purchasing Procedures
1 Credit
Applied Management principles required to deliver food and nutrition programs and services including continuous quality management of food and nutrition services. Topics include: food specifications, procurement systems, and receiving and inventory processes.
Lecture: 1 hour
Prerequisite(s): MATH-1100 Mathematical Explorations or higher, or MATH-1240 Contemporary Mathematics.

DIET-1600 Introduction to Supervision
3 Credits
Introduction to principles and concepts employed in supervision of nutrition services delivery departments. Emphasis on planning, organizing, communicating and decision-making skills.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and departmental approval: admission to Dietetic Technology Program.

DIET-1820 Independent Study/Research in Dietetic Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

DIET-182H Honors Indep. Study in DIET
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
DIET-1850 Food and Nutrition Systems Practicum

4 Credits

Application of techniques in food production; equipment use and care; employee management; information flow; documentation; sanitation regulations; food service personnel recruitment, training and retention; and quality assurance in a health care facility. Activities provide students opportunity to demonstrate application of knowledge acquired in previous and concurrent nutrition and diet therapy courses.

Lecture: 2 hours
Other Required Hours: Practicum: 14 hours per week. Seminar: 02 hours per week.
Prerequisite(s): DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications; or DIET-1300 Principles of Nutrition Care.

DIET-1940 Dietary Managers Field Experience

1 Credit

Supervised work experience. Twelve clock hours per week gaining practical hands-on-work experience supervising a food service department and conducting initial nutritional assessments on patients. Program manager and/or dietetic technology instructor must approve the student work experience sites. Student spends a minimum of 50 hours under the direct supervision of a registered dietitian. Recommended for healthcare food and nutrition personnel.

Other Required Hours: Field Experience: 12 clock hours per week.
Prerequisite(s): DIET-1331 Fundamentals of Food production or concurrent enrollment; and departmental approval: worksite approval: Food service in Hospital, Long Term Care or health care facility, with approval from Registered Dietitian and Administrator at site. The site must be approved by the Program Manager.

DIET-2301 Medical Nutrition Therapy I

3 Credits

Basic nutrition knowledge applied to medical nutrition therapy and the nutrition care process. Apply medical nutrition therapy using evidence based practice with practice cases.

Lecture: 3 hours
Prerequisite(s): DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications

DIET-2311 Medical Nutrition Therapy II

3 Credits

Application of nutrition knowledge to specialized medical nutrition therapy. Moderate to high nutrition risk factors examined. Internal medical and renal disease examined.

Lecture: 3 hours
Prerequisite(s): DIET-2301 Medical Nutrition Therapy I

DIET-2320 Medical Nutrition Therapy III

2 Credits


Lecture: 2 hours
Prerequisite(s): DIET-2311 Medical Nutrition Therapy II, or concurrent enrollment, or departmental approval.

DIET-2410 Life Cycle Nutrition - Pregnancy and Lactation

1 Credit

The study of special nutritional needs, physiology, and health concerns of during preconception, pregnancy, lactation and infancy. Examine evidence-based practices and nutrition tools, promotion of health, and nutrition intervention to reduce risk of nutrition-related concerns during each of the life cycle phases.

Lecture: 1 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

DIET-2420 Life Cycle Nutrition - Nutrition for Children

1 Credit

The study of special nutritional needs, physiology, and nutrition related health concerns: the toddler years through adolescence. Examine evidence-based practices and nutrition tools, promotion of health, and nutrition intervention to reduce risk of nutrition-related concerns.

Lecture: 1 hours
Prerequisite(s): None.

DIET-2430 Life Cycle Nutrition - Nutrition through Adulthood

1 Credit

Explore the adulthood nutrition life cycle. Includes assessments, health concerns, including cardiovascular disease and diabetes, obesity, alternative and complementary care, community nutrition programs and support for low income persons. Introduction to geriatric nutrition and nutritional requirements for the elderly.

Lecture: 1 hours
Prerequisite(s): DIET-1200 Basic Nutrition.

DIET-2501 Nutrition Application in Long Term Care

2 Credits

Concepts and application of nutrition care management processes in the long term care setting. Assessment and documentation of nutritional status according to current regulatory standards. Discussion of quality of life issues specific to nutritional care of long term care resident. Other topics include food/drug interactions, special feeding, alternative feeding, and the interprofessional team approach to care.

Lecture: 2 hours
Prerequisite(s): Concurrent enrollment in DIET-2862 Geriatric Nutrition Practicum. and departmental approval: admission to program.

DIET-2820 Advanced Independent Study/Research in Dietetic Technology

1-3 Credits

Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.
DIET-2850 Medical Nutrition Care Practicum
2 Credits
Application of dietetic technician skills required in medical nutrition care of patients or residents in acute or long-term care facilities under supervision of registered dietitian. Application and documentation of care plans and patient education. Course provides forum for discussion of practicum experience.
Lecture: 1 hour
Other Required Hours: Practicum: 7 hours per week. Seminar: 1 hour per week.
Prerequisite(s): DIET-1850 Food and Nutrition Systems Practicum; and concurrent enrollment in DIET2311 Medical Nutrition Therapy II.

DIET-2862 Geriatric Nutrition Practicum
2 Credits
Practicum experience under the supervision of a registered dietitian. Delivery of nutrition care services in a long term care setting. Nutrition assessment, intervention and health promotion.
Lecture: 1 hour
Other Required Hours: Practicum 112 hours per semester; Seminar 15 hours per semester.
Prerequisite(s): Concurrent enrollment in DIET-2501 Nutrition Applications in Long Term Care, and completion of DIET-2430 Life Cycle Nutrition-Nutrition Through Adulthood.

DIET-2863 Community Nutrition Practicum
2 Credits
Practicum experience under the supervision of a registered dietitian. Delivery of nutrition care services to community based agencies, wellness settings, or social service agencies. Nutrition intervention, assessment and health promotion. Other Required Hour(s): Practicum 7 hours per week. Seminar 1 hour per week.
Lecture: 1 hour
Prerequisite(s): DIET-2410 LCN-Pregnancy and Lactation or concurrent enrollment, DIET-2420 Life Cycle Nutrition - Nutrition for Children, or concurrent enrollment, and DIET-2430 Nutrition Through Adulthood or concurrent enrollment.

DIET-2990 Dietetic Technology Professional Development Skills
2 Credits
Capstone course in Dietetic Technology. Integration of knowledge acquired in basic, technical and non-technical areas in preparation for professional roles and life-long professional growth and development.
Lecture: 2 hours
Prerequisite(s): DIET2501 Nutrition Applications in Long Term Care or concurrent enrollment.

Early Childhood Education (ECED)

ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs
4 Credits
Introduction to child development and philosophy of early childhood education, including developmentally appropriate practices in a variety of child care settings. Identification of effective multicultural and inclusive early childhood learning environments. Recognition of the importance of integrated curriculum as teaching strategy for young children. Introduction to role of the early childhood teacher as facilitator, and the development of effective family/center relationships. Observations in early childhood education settings.
Lecture: 4 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; and departmental approval: completion of required background check. Fee for background check will be charged.
OAN Approved: OED010.

ECED-1301 Language and Literacy in an Integrated Curriculum
3 Credits
Overview of spoken and written language development of young children. Theories and research related to language and literacy development and the role of the teacher in facilitating this development. Planning, implementing, and evaluating developmentally appropriate multicultural materials and experiences for language discovery and learning. Selection and integration of appropriate inclusive literature in early childhood settings. Students participate in lecture/lab setting learning how to listen, talk and read to young children. Five hours of Service Learning required.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs.

ECED-1311 Art and Creative Expression in an Integrated Curriculum
3 Credits
Exploration of planning, organizing, implementing, and evaluating a developmentally appropriate curriculum that fosters the creative and aesthetic development of young children. Preparation, organization, and maintenance of early childhood environment emphasized. Students in lecture/lab setting experience extensive variety of art media suitable for young children. Five hours of service learning required.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs.

ECED-1321 Math and Science Inquiry in an Integrated Curriculum
3 Credits
Introduction to extensive variety of curricular experiences which enhance young children's intellectual curiosity and critical thinking skills. Role of teacher in facilitating science, math, problem solving experiences, scientific methods/learning process and constructivist theory explored. Students participate in lecture/lab setting with variety of hands on problem solving activities. Five hours of Service Learning required.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.
ECED-1331 Music and Movement in an Integrated Curriculum
3 Credits
Exploration of appropriate methods and materials for implementation of music in early childhood curriculum. Impact of music experience on cognitive, socio-emotional and physical/motor development examined. Connections between emergent literacy, music and brain development and constructivism explored. Includes creative self expression using movement, sounds, songs, musical instruments, selection of recordings, multicultural experiences in music and use of community resources. Five hours of service learning required.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs.

ECED-1400 Administration and Leadership in Early Childhood
4 Credits
Overview of major administrative principles, types of child care centers, legislative mandates, center policies and procedures, insurance ramifications, design of physical facilities, purchasing, budgeting, recordkeeping, and professional public relations. Programmatic formats as related to philosophical assumptions, educational theories and environmental design with respect to infants, toddlers, preschool and school age settings. Modes of staff support and management including problem solving and conflict resolution surveyed.
Lecture: 4 hours
Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs or concurrent enrollment.

ECED-1820 Independent Study/Research in Early Childhood
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ECED-182H Honors Independent Study in Early Childhood Education
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test. and must have earned an A or B in at least 3 honors courses.

ECED-1860 Experience with Young Children in Early Childhood Settings
3 Credits
Supervised teaching experience at an assigned early childhood site(s). Students introduced to developmentally appropriate care and education of young children within assigned setting. Preparation, organization and maintenance of an educational environment, responsive interaction and communication strategies, and planning and presentation of experiences for young children emphasized. Experience provided in relating to wide array of individuality among children. Cultural, familial and developmental diversity, adjustment of children to group setting and development of positive work relationships emphasized.
Lecture: 1 hour
Other Required Hours: Practicum: 7 hours per week; Seminar: 1 hour per week.
Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs; and ECED-1301 Early Language and Literacy Development: Integrated Curriculum; and ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and instructor approval.

ECED-2300 Child Behavior and Guidance
3 Credits
Examination of positive strategies to guide young children, based on developmentally appropriate practices. Emphasis on preparing, organizing and maintaining physically and psychologically safe environments that support children’s pro-social behavior. Course study includes appropriate behavioral expectations based on child development, strategies for supporting children’s social and emotional development and the consequences of stress and trauma on child development and behavior. Skills strengthened include observing and assessing child behavior. Observations in a childcare center required.
Lecture: 3 hours
Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs and ECED-1301 Early Language and Literacy Development: Integrated Curriculum; and ENG-1010 College Composition I.

ECED-2401 Families, Communities, Schools
3 Credits
Explores educational considerations for teachers including the policies, theories, practices, and skills, and knowledge of home, school, and community partnerships. Candidates will examine: the multiple influences on the whole child; accessibility of community services and supports; ethical practical, and culturally competent decisions to foster family engagement; and knowledge and skills needed to address family structure, socio-cultural and linguistic backgrounds, identities and customs, and advocacy for children and families.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I; and ECED-1010 Introduction to Early Childhood Education: Children’s Development and Program.
OAN Approved: OED006.
ECED-2500 Infant/Toddler Development, Relationships, and Programs
3 Credits
Comprehensive coverage of broad areas of infant and toddler development and care with special emphasis on developmentally appropriate practices for adults who work with children ages birth to three. Major developmental milestones in infant and toddler growth; creation of safe, healthy, and supportive learning environments for children under three. Selection of materials and equipment for center or home-based care; analysis of professional standards for high quality interactions between adults and very young children. Observations in early childhood education settings.
Lecture: 1-3 hours
Prerequisite(s): ENG-1010 College Composition I; and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs. CTAN Approved: CTECE003.

ECED-2600 Child Development Associate Professional Portfolio
1 Credit
Focus on professional development and learning experiences that are demonstrated through a collection of resources, reflective statements of competence, and written professional philosophy to utilize as a tool throughout early childhood education career.
Lecture: 1 hour
Prerequisite(s): ENG-1010 College Composition I; and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-2820 Advanced Independent Study/Research in Early Childhood Education
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ECED-2820H Advanced Honors Independent Study in Early Childhood Education
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ECED-2870 Early Childhood Education Student Teaching Practicum
2 Credits
Capstone course in early childhood education. Participation in assigned early childhood education settings under college supervision to develop effective skills with young children, families, and staff. Integration of principles of child development in designing and implementing developmentally appropriate curriculum, assessment and professionalism. Creation of inclusive environments through physical design and respectful, sensitive interactions. Each student will spend 240 hours per semester in field experience.
Other Required Hours: Practicum: 16 hours per week.
Prerequisite(s): ECED-1311 Art and Creative Expression in an Integrated Curriculum, ECED-1321 Math and Science Inquiry in an Integrated Curriculum, ECED-1331 Music & Movement in an Integrated Curriculum, ECED-1860 Experience with Young Children in Early Childhood Settings; concurrent enrollment in ECED-2990 Early Childhood Education Student Teaching Seminar, and departmental approval: students must meet with a faculty coordinator prior to registration.

ECED-2990 Early Childhood Education Student Teaching Seminar
3 Credits
Capstone course in early childhood education. Student will focus on consolidation and integration of the knowledge, skills and dispositions associated with becoming an effective, knowledgeable lead/group teacher of young children. Focus includes planning, implementing and assessing curriculum, creating appropriate learning environments, developing professional conduct, and recognizing ethical issues.
Lecture: 2 hours
Other Required Hours: Seminar: 1 hour per week.
Prerequisite(s): ECED-2300 Child Behavior and Guidance, or concurrent enrollment; ECED-2401 Families, Communities & Schools, or concurrent enrollment; ECED-2500 Infant/Toddler Development, Relationships, and Programs, ECED-2870 Early Childhood Education Student Teaching Practicum, and departmental approval: students must meet with a faculty coordinator prior to registration.

Earth Science (ESCI)

ESCI-1030 Earth
3 Credits
Survey of geology of Earth and its impact on the environment. Earth's structure and composition, earthquakes, plate tectonics, hydrologic cycle, weather, resources and energy alternatives, and current related issues. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Other Required Hours: Laboratory: 3 hours per semester in field experience.
Prerequisite(s): ESCI-1030 Survey of Earth or concurrent enrollment.
OAN Approved: TMNS.

ESCI-103L Earth Laboratory
1 Credit
This course is cross-listed as PSCI-103L. Credit can only be earned once for either course. Intended for non-science majors. Exercises on rocks and minerals, soils, weather, plate tectonics, energy and may include other related earth science activities. Laboratory activities complement and enrich related lecture course.
Lecture: 3 hours
Laboratory: 3 hours
Prerequisite(s): ESCI-1030 Survey of Earth or concurrent enrollment.
ESCI-1040 Weather Studies
3 Credits
An integrated science course that covers current facts, theories, and technological methods regarding the study of the weather and climate. Weather prediction and real-time weather data analyses are important facets of this course.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

ESCI-1050 Introduction to Ocean Studies
3 Credits
Introduction to Ocean Studies will focus on the world's oceans, emphasizing both the physical and chemical properties, circulation, and interaction between the ocean and other components of the Earth system. This course is for general science majors and non-majors, and will expose the student to the world's oceans and the vital role in the earth system.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; and MATH-0990 Math Literacy for College Students or concurrent enrollment, or MATH-0955 Beginning Algebra or concurrent enrollment; or appropriate score on Math Placement Test.

ESCI-1310 Physical Geography
3 Credits
Introductory study of physical elements of geography. Includes earth-sun relationships, maps, atmospheric components and interactions, elements and controls of weather and climate, water resources and their distribution, vegetation associations, animal associations, ecological relationships, soil types, landforms, and plate tectonics. World distribution, causal relationships and significance to man are stressed. To fulfill laboratory science requirements, students should also enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; and MATH-0990 Math Literacy for College Students or concurrent enrollment, or MATH-0955 Beginning Algebra or concurrent enrollment; or appropriate score on Math Placement Test.
OAN Approved: TMNS and OSS006 (Course 1 of 2. Both must be taken).

ESCI-131L Lab in Physical Geography
1 Credit
Laboratory studies include the scientific method, map interpretation and construction, remote sensing, energy transfers, weather components, climate classification, hydrology, pedology, ecology, plant and animal geography, and plate tectonics.
Laboratory: 3 hours
Prerequisite(s): ESCI-1310 Physical Geography or concurrent enrollment. OAN Approved: TMNS and OSS006 (Course 2 of 2. Both must be taken.).

ESCI-1410 Physical Geology
3 Credits
Topics include materials and structures of the earth; processes and agencies which change earths crust. Mineral composition of rocks; work of gravity, water, winds, and glaciers as agents of erosion; volcanoes and earthquakes as forces which change earths surface. To fulfill laboratory science requirements, students should also enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
OAN Approved: TMNS and OSC025 (Course 1 of 2; Both must be taken).

ESCI-141H Honors Physical Geology
3 Credits
Honors course in Physical Geology covers materials and structures of the Earth; processes and agencies by which the Earth's crust has been and is being changed; rocks and their mineral composition; the work of gravity, water, winds, and glaciers as agents of erosion; and volcanoes and earthquakes as forces which change the surface of the Earth. Emphasis on effects geological events and resources have had on human civilization, with a strong focus on inquiry-based learning as the basis of scholarly research. To fulfill laboratory science requirements, students should also enroll in Laboratory in Physical Geology.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-101H Honors College Composition I. OAN Approved: TMNS and OSC011 (course 1 of 2, both must be taken).

ESCI-141L Lab in Physical Geology
1 Credit
Laboratory studies include minerals, rocks, volcanoes, geologic dating, topographic maps and determination of depositional and erosional features, earthquake epicenter locations, folds and faults, interpretation of geologic maps, plate tectonic processes and boundaries, and field work to become familiar with local geology. Regularly scheduled field trips are integral part of this course.
Laboratory: 3 hours
Prerequisite(s): ESCI-1410 Physical Geology or concurrent enrollment; or ESCI-141H Honors Physical Geology or concurrent enrollment. OAN Approved: TMNS and OSC025 (course 2 of 2, both must be taken).

ESCI-1510 Historical Geology
3 Credits
Historical geology focuses on the evolution of land forms and life-forms through geologic time. The course includes a study of evolutionary changes occurring in plant and animal life as documented by fossil remains and the interpretation of geologic forces by means of topographic and geologic maps. Topics include plate tectonics, relative and absolute dating, fossils and fossilization, rocks and their significance as indicators of the environmental past. Emphasis will be placed on North America, dealing with the growth of continents and mountain building. To fulfill the laboratory science requirement, students should also enroll in a Historical Geology laboratory course.
Lecture: 3 hours
Prerequisite(s): ESCI-1510 Historical Geology or concurrent enrollment; or ESCI-1410 Physical Geology or concurrent enrollment. OAN Approved: TMNS and OSC011 (course 1 of 2, both must be taken).

ESCI-151L Lab in Historical Geology
1 Credit
Laboratory studies include mineral and rock identification, significance of rock type, relative and absolute dating, stratigraphy, fossilization, fossil identification and significance, evolutionary patterns, cladistics, geology and paleontology of major geologic time divisions, and field work. Field work and field trips are an integral part of this course.
Laboratory: 3 hours
Prerequisite(s): ESCI-1510 Historical Geology or concurrent enrollment. OAN Approved: TMNS
ESCI-1610 Geology of the National Parks
3 Credits
Studies of each park will include reasons why each area was set apart as a park, its geologic history, its present lithology and topography, and influences of lithology and topography on climatic and biotic factors (and vice versa). Ecological and geologic problems that have arisen because of presence of humans in parks or in adjacent areas also considered. To fulfill laboratory science requirement, students should also enroll in related laboratory course.
Lecture: 1-3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English Placement Test.
OAN Approved: TMNS.

ESCI-161L Lab in Geology of the National Parks
1 Credit
Laboratory studies include use of topographic maps, aerial photos, remote sensing images, and geologic maps; volcanism and earthquakes, physiographic provinces; identification of igneous, sedimentary and metamorphic rocks and structures; studies of depositional and erosional features of streams, winds, glaciers, and waves; fossil identification; analyses of climatic and biological data; plate tectonics; investigations into ecological problems of many national parks. Field work required.
Laboratory: 3 hours
Prerequisite(s): ESCI-1610 Geology of the National Parks or concurrent enrollment.
OAN Approved: TMNS.

ESCI-1820 Independent Study/Research in Earth Science
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ESCI-182H Honors Independent Study in Earth Science
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ESCI-282H Honors Independent Study in Earth Science
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Economics (ECON)

ECON-1210 Survey of Economics
3 Credits
Overview of economic principles and problems designed to provide general understanding of structure, organization and operation of our economy. Relationship of economy to our social and political welfare and its determination of the fundamental standard of living, on both macro and micro levels.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

ECON-1220 Economic Development of the American Economy
3 Credits
Evolutionary development of American economic system. Review of changes in economic and organizational structure, emphasizing application of fundamental economic explanation of change.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

ECON-179H Honors Contract in Economics
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Departmental approval: must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract.

ECON-1820 Independent Study/Research in Economics
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ECON-182H Honors Independent Study/Research in Economics
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ECON-282H Honors Independent Study/Research in Economics
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals I or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
ECON-2000 Principles of Microeconomics
3 Credits
This course uses the basic tools of microeconomics to study the economic decisions of households and business firms in a market-based economic system with some government involvement.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra I or appropriate score on Math placement test to enroll in a 1000-level Mathematics course.

ECON-2010 Principles of Macroeconomics
3 Credits
This course introduces the language, tools, and basic models used to study the aggregate economy, including the impact of fiscal policy and monetary policy. It is recommended that students take ECON-2000 prior to taking this course.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math Placement test to enroll in 1000-level Mathematics.

ECON-2700 The Economics of Money, Banking, and Financial Markets
3 Credits
Examines the economic roles played by financial markets, financial institutions, and money in the determination of business and consumer behavior, personal wealth, and the performance of the economy. Studies key markets, including the bond and stock markets; key institutions, including banks and the Federal Reserve. Monetary theory and policy discussed.
Lecture: 3 hours
Prerequisite(s): ECON-2610 Principles of Macroeconomics, and ECON-2620 Principles of Microeconomics.

ECON-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Economics complements and exceeds requirements and expected outcomes for an existing Economics 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hour
Prerequisite(s): Must be taken concurrently with a 2000-level course in Economics, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

ECON-2820 Advanced Independent Study/Research in Economics
1,3 Credit
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ECON-282H Honors Advanced Independent Study in Economics
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Education (EDUC)

EDUC-1011 Introduction to Education
3 Credits
Designed to introduce the student to the broad and complex field of public education. Emphasis on personal and professional characteristics required for successful teaching. This course also requires 18 hours of field observation in primary and/or secondary school classrooms within the term.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test. OAN and CTAN Approved: OED007 and CTEDU007.

EDUC-1020 Educational Technology
3 Credits
Identify, select, evaluate, use, and troubleshoot instructional technology, electronic media, operating and utility software to meet curricular goals. Use instructional design and integration strategies to design and produce developmentally and culturally appropriate materials that align with Interstate Teacher Assessment and Support Consortium/Ohio standards.
Lecture: 3 hours
Prerequisite(s): None.

EDUC-1411 Individuals with Exceptionalities
3 Credits
This is a survey course to prepare all educators to teach diverse learners, including those with exceptionalities. It covers developmental characteristics, assessment methods, intervention strategies, and ethical principles for students in education and community settings.
Lecture: 3 hours
Prerequisite(s): EDUC-1011 Introduction to Education. OAN Approved: OED009.

EDUC-182H Honors Independent Study/Research in Education
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
EDUC-2050 Human Diversity in Education
3 Credits
Relationships between a variety of socio-cultural patterns of students
and communities and abilities to instruct. Development of strategies for
increasing the educational potential of all students.
Lecture: 3 hours
Prerequisite(s): EDUC-1011 Introduction to Education or ECED-1010
Introduction to Early Childhood Education: Children’s Development and
Programs.
EDUC-282H Advanced Honors Independent Study/Research in Education
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set
forth in the Honors Course Checklist used to approve regular honors
courses. Study/research title and specific content arranged between
instructor and student. May be repeated for a maximum of six credits of
different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990
Language Fundamentals II or appropriate score on English Placement Test,
and must have earned an A or B in at least 3 honors courses.

Electrical/Electronic Engineering
Technology (EET)

EET-1015 Introduction to Computer Maintenance and Repair
3 Credits
Introduction to the field of personal computer maintenance and repair.
Overview of hardware and software components associated with
personal computer systems. Survey of techniques and methods used
by technicians to maintain, repair, troubleshoot and upgrade personal
computers. Coverage of both interpersonal as well as technical abilities
necessary for success in this industry. Survey of the history and evolution
of the personal computer.
Lecture: 3 hours
Prerequisite(s): IT-1090 Computer Applications or concurrent enrollment.
EET-1035 Operating Systems and Software for PC Technicians
4 Credits
Hands-on course provides both theoretical and practical training
with computer operating system setup, maintenance, upgrading,
troubleshooting and support. Lab activities provide direct experience
with techniques and tools used to install, configure, operate, secure and
troubleshoot operating system software in desktop and mobile devices.
Fundamental career training for computer service technicians.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): EET-1015 Introduction to Computer Maintenance and Repair,
or concurrent enrollment.
EET-1055 Computer Hardware Support
4 Credits
Assemble computer components, install, configure and maintain devices
and PCs, properly and safely diagnose, resolve and document common
hardware issues while applying troubleshooting skills. Focuses on
providing appropriate customer support. Designed in conjunction with
industry standard training and certification guidelines.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): EET-1015 Introduction to Computer Maintenance and Repair.
EET-1081 Computer User Support
1 Credit
Overview of techniques and skills necessary for career opportunities in
computer user support fields, with particular emphasis on process of
microcomputer service and repair. Coverage of both interpersonal and
technical abilities necessary for success in this industry. Problem-solving
strategies for common user support issues, customer service skills, help
desk operation, documentation requirements and information resources
for user support.
Lecture: 1 hour
Prerequisite(s): Recommend IT-1090 Introduction to Computer Applications or
proficiency in Windows and MSOffice.
EET-1100 Introduction to Robotics
2 Credits
Introduction to direct current circuits and supporting mathematics,
binary and hexadecimal numbering systems, and learning a programming
language that is constrained to an embedded training platform.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.
EET-1130 Basic Audio Electronics
3 Credits
Basic DC and AC circuits, amplifier theory, audio distortion, electronic test
equipment operation and soldering techniques. Designed for non-EET
majors.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher level math,
or departmental approval.
EET-1140 Productivity Tools for Engineering
2 Credits
Productivity Tools for Engineering exposes students to word processing,
spread sheets and CAD (Computer Aided Design) programs directed at
the electronic engineering technology environment.
Laboratory: 4 hours
Prerequisite(s): ENG-1010 College Composition I; and eligibility for
MATH-0965 Intermediate Algebra; or departmental approval.
EET-1150 Basic Robotics with Math
2 Credits
The course provides an introduction to embedded control principals using
C programming with an emphasis on mathematics.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.
EET-1161 Direct Current Circuits
3 Credits
Introduction to direct current circuits that includes engineering notation,
the meaning of voltage, current, resistance (including color code),
electrical units, power dissipation, the American Wire Gauge (AWG)
table, Ohm’s law, Kirchoff’s Voltage Law (KVL), Kirchoff’s Current Law
(KCL), series circuits, parallel circuits, series/parallel circuits, component
troubleshooting, resistance capacitance (RC) and resistance inductance
(RL) circuits (charge, discharge and time constants). Circuit theorems
include Thevenin and Norton equivalent circuits, mesh and nodal
analysis.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or concurrent enrollment;
appropriate Math placement score; or departmental approval. OAN and CTAN
Approved: OET001 and CTEET001.
EET-1180 Surface Mount Soldering
1 Credit
Develop skills using surface mount technology (SMT), through hole technology (THT), and connectors using soldering equipment and techniques to facilitate design, construction and rework of circuit boards.
Laboratory: 2 hours
Prerequisite(s): None.

EET-1185 Single Board Computers and Applications
3 Credits
An introductory course on Single Board Computers (SBC) with an emphasis on embedded applications. Topics include standard interface devices like keyboards, High-Definition Multimedia Interface (HDMI), Universal Serial Bus (USB), General Purpose Input and Output (GPIO) ports, conventional serial communications. Communicating with external sensors, like Global Positioning System (GPS), infrared transmission and detection, accelerometers, etc., are discussed from the aspect of programming. Lab work includes use of circuit simulation software.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1100 Introduction to Robotics or EET-1150 Basic Robotics with Math or departmental approval.

EET-1190 Printed Circuit Layout
2 Credits
Examines use of contemporary program(s) to lay out printed circuit board in single and multiple layers. Design rules, current return paths, crosstalk and other anomalous conditions are explored.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): EET-1161 Direct Current Circuits or concurrent enrollment.

EET-1195 Unmanned Aerial Vehicles
3 Credits
Addresses the emerging market for unmanned aerial vehicle (drones), their ethical use, safety issues, legal issues, electrical and mechanical components, on-board control systems, software and remote control.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1100 Introduction to Robotics or EET-1150 Basic Robotics with Math or departmental approval.

EET-1210 AC Electric Circuits
3 Credits
Fundamentals of alternating current (AC) circuits involving resistance, capacittance, and inductance. Sinusoidal voltage, current power, phase, resonance, and frequency response of basic circuit elements in series, parallel, and series-parallel connections as analyzed using Kirchhoff's laws, Mesh, Nodal, and Bridge Network analysis, Delta-Wye conversions, Superposition, Thevenin’s, Norton’s and Maximum Power Transfer theorems. Decibels, filters, Bode plots, Fourier series, polyphase transformers, and system analysis are studied. Computer simulation and practical laboratory experience using AC instrumentation for measuring series-parallel networks to observe and verify theory and concepts presented during lectures.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1161 Direct Current Circuits; and EET-1180 Surface Mount Soldering, or concurrent enrollment; and MATH-0965 Intermediate Algebra or concurrent enrollment; or appropriate Math placement score; or departmental approval.
OAN Approved: OET003

EET-1220 Circuits and Electronics
3 Credits
An introductory course to practical electricity that involves Direct-Current (DC) and Alternating-Current (AC) circuit fundamentals and supporting topics. An emphasis is placed on practical applications found in residential and commercial locations. Additionally motors, transformer, lighting, high voltage and low voltage circuits are included with emphasis on safety.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-1530 College Algebra or concurrent enrollment; or MATH-153H Honors College Algebra or concurrent enrollment; or departmental approval.

EET-1241 Digital Fundamentals
3 Credits
Introductory course to digital circuits. Logic and arithmetic operations are studied, designed and tested in a laboratory environment using discrete integrated circuit gates and programmable logic devices (PLD). Base 2 (binary) and base 16 (hexadecimal) number systems are used in conjunction with Boolean algebra and other theorems. Foundation for continued study of microprocessors/microcontrollers.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1161 Direct Current Circuits, or concurrent enrollment; or departmental approval.
OAN Approved: OET002; CTAN approved: CTEET002.

EET-1250 FAA Drone Certification Test Preparation
3 Credits
This course prepares students for the Federal Aviation Administration's (FAA) drone certification test.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

EET-1302 Cisco I: Basic Networking Technologies
3 Credits
Introduction to architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum which enables students to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes to provide a foundation for the curriculum.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2300 Networking Fundamentals. CTAN Approved: CTIT007.

EET-1312 Cisco II Basic Routing and Switching
3 Credits
Covers the architecture, components, and operations of routers and switches in a small network. Ability to configure a router and a switch for basic functionality, including preparing students to troubleshoot and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing, in both IPv4 and IPv6 networks.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1302 Cisco I Basic Networking Technologies, or concurrent enrollment. CTAN Approved: CTIT008.
EET-1814 Special Topics: FAA Drone Certification Preparation
3 Credits
The Federal Aviation Administration (FAA) requires passing a certification test to operate drones in certain restricted areas. This course prepares students for the certification test.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

EET-1820 Independent Study/Research in Electrical/Electronic Engineering Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG=0990 Language Fundamentals II or appropriate score on English Placement Test.

EET-182S Independent Study/Research Lab in Electrical/Electronic Engineering Technology
1,3 Credit
Independent two-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Laboratory: 2-6 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

EET-1910 Directed Practice Electrical Utility Technology I
4 Credits
Supervised practical applications of electrical substation worker job duties in a setting under personal supervision of FirstEnergy personnel. Emphasis on safety practices and regulations, using substation vehicles and equipment, and procedures and tasks related to use and maintenance of an electrical substation.
Other Required Hours: Directed Practice: 20 hours per week (300 hours per semester)
Prerequisite(s): EET-1161 Direct Current Circuits, and departmental approval: admission to the Electric Utility Technology program.

EET-1915 Directed Practice Substation Utility Technology I
4 Credits
Supervised practical applications of electrical substation worker job duties in a setting under direct supervision of FirstEnergy personnel. Emphasis on safety practices and regulations, using substation vehicles and equipment, and procedures and tasks related to use and maintenance of an electrical substation.
Other Required Hours: Directed Practice: 20 hours per week (300 hours per semester)
Prerequisite(s): Concurrent enrollment in ISET-1410 Applied Electricity I, and departmental approval: admission to Electrical Utility Technology Program.

EET-1920 Directed Practice Electrical Utility Technology II
4 Credits
Supervised practical applications of electrical overhead line worker job duties in a setting under personal supervision of FirstEnergy personnel. Emphasis on skills required to perform work on secondary voltage circuits. Emphasis on the installation of services, street lighting, and secondary circuits, bucket truck familiarization and bucket rescue. Overview of distribution electrical systems, and Occupational Safety and Health Administration (OSHA) rules. Safety topics include: Work Zone Traffic Control; Minimum Approach Distances; Rubber Protective Equipment; and Knowledge of UD Excavation/Trenching/Shoring.
Other Required Hours: Directed Practice: 20 hours per week (300 hours per semester).
Prerequisite(s): EET-1910 Directed Practice Electric Utility Technology I, and EET-1210 AC Electric Circuits, or concurrent enrollment; or departmental approval.

EET-1925 Directed Practice Substation Utility Technology II
4 Credits
Second in a four part series providing the student with a broader skill set as well as enhanced knowledge and skill level necessary to safely assist in the performance of routine repairs on distribution and power transformers, bushings, circuit breakers, disconnect switches, control equipment and other de-energized electrical equipment used in the distribution of electrical energy.
Other Required Hours: Directed Practice: 20 hours per week (300 hours per semester)
Prerequisite(s): EET-1915 Directed Practice Substation Utility Technology I, and concurrent enrollment in ISET-1420 Applied Electricity II.

EET-2111 Industrial Electronics I
3 Credits
Construction, theory of operation, performance characteristics relative to the application of DC motors, AC Single phase motors, AC single phase transformers, AC three phase transformers, AC three phase motors, specification and characteristics of power switching devices like triacs and silicon controlled rectifiers, Metal Oxide Semiconductor Field Effect Transistors (MOSFETS), power factor, opto-isolators, power supplies, linear and switch-mode regulators, Pulse Width Modulation (PWM), ground fault circuit interrupters (GFCI), relays, and safety.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1210 AC Electric Circuits.

EET-2120 Electronics I
3 Credits
Course includes the most common solid-state devices used in electronic circuits: silicon and germanium diodes, zener diodes, Light Emitting Diodes (LEDs) Bipolar Junction Transistors (BJTs), and Field Effect Transistors (FETS). Graphical and analytical DC and AC analysis of various electronic circuits used. Computer circuit analysis program MultiSim used to predict DC voltages and currents and frequency response of different circuits. Laboratory experiments reinforce topics studied in lecture.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1210 AC Electric Circuits; or departmental approval.
EET-2131 Digital Communication Fundamentals  
3 Credits  
A continuation of Signal Analysis course that expands on elementary digital modulation techniques, types of binary signals, speech coding, signal analysis and network theory. Topics include sampling, coding, bandwidth for baseband digital signals, data communications protocol including TCP/IP and error correction/detection techniques.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2170 Signal Analysis, or concurrent enrollment.  

EET-2160 Surface Mount Soldering  
1 Credit  
Surface mount soldering uses surface mount soldering equipment and techniques to facilitate design, construction and rework of circuit boards.  
Laboratory: 2 hours  
Prerequisite(s): EET-2170 Signal Analysis, or departmental approval: prior work experience.  

EET-2170 Signal Analysis  
3 Credits  
Introduces bandwidth, frequency response, noise, modulation, spectrum analysis and distortion and how they apply to design, troubleshooting and circuit operation of audio and radio frequency circuits.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1210 AC Electric Circuits.  

EET-2180 EET Applied Calculus  
3 Credits  
An introductory course to calculus with an emphasis on electrical/electronic applications. Topics include: limits; differentiation and graphical applications of the derivative; and indefinite and definite integration and applications. Emphasis on technology as a tool through use of graphing calculator/computer.  
Lecture: 3 hours  
Prerequisite(s): EET-2120 Electronics I and MATH-1540 Trigonometry, or concurrent enrollment; or MATH-154H Trigonometry or concurrent enrollment.  

EET-2220 Electronics II  
3 Credits  
Continuation of electronic circuits. Includes study of operational amplifiers, instrumentation amplifiers, voltage comparators, active filter circuits, Analog-to-Digital and Digital-to-Analog converters, and an introduction to applied calculus.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2120 Electronics I.  

EET-2231 Wired & Wireless Communication  
3 Credits  
Final course in electronic communications series. Provides an in-depth study of fiber optic microwave, broadband wired and cellular communication systems.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2131 Digital Communication Fundamentals.  

EET-2242 C and ASM Programming with Embedded Applications  
3 Credits  
Introduces microprocessor and microcontroller internal and external hardware components. Assembly language (ASM) programing is introduced to illustrate the internal working of a microcontroller. The C programming language is taught in a regular (C++) and embedded environment.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1241 Digital Fundamentals, or departmental approval.  

EET-2250 Industrial Electronics II  
3 Credits  
Overview of common industrial power control circuits and devices including thyristors, unijunction transistors, relays and transient suppression devices. Introduction to relay logic and operation, and programming of programmable controller.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2220 Electronics II or concurrent enrollment.  

EET-2290 Electrical Design Project  
2 Credits  
Capstone course for Electrical-Electronic Engineering program. Designed to allow students opportunity to demonstrate and apply capabilities and skills acquired during their previous engineering technology coursework. Students will choose an approved electronic project compatible with their interest and background. Project will include research, documentation, construction and testing, and conclude with a report and presentation of results.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): EET-2242 C and ASM Programming with Embedded Applications.  

EET-2302 Cisco III Intermediate Routing and Switching  
3 Credits  
Covers the architecture, components, and operations of routers and switches in a larger and more complex network. Includes how to configure routers and switches for advanced functionality. Configuration and troubleshooting routers and switches to resolve common issues with OSPF, EIGRP, STOP and VTP in both IPv4 and IPv6 networks. Develop the knowledge and skills needed to implement DHCP and DNS operations in a network.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1312 Cisco II Basic Routing and Switching. CTAN Approved: CTIT009.  

EET-2312 Cisco IV Basic Wan Technologies  
3 Credits  
The WAN technologies and network services required by converged applications in a complex network. Understanding the selection criteria of network devices and WAN technologies to meet network requirements. Configure and troubleshoot network devices and resolve common issues with data link protocols. Develop the knowledge and skills needed to implement IPSEC and virtual private network (VPN) operations in a complex network.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2302 Cisco III Intermediate Routing and Switching, or concurrent enrollment. CTAN Approved: CTIT010.  

EET-2400 Biomedical Instrumentation I  
3 Credits  
First course in the Biomedical Engineering Technology Instrumentation sequence. Study of general hospital equipment such as safety analyzers, medtesters, ECGs, patient monitors, simulators, and centrifuges. Determine performance of equipment and verify that the equipment performs to specifications using simulators and analyzers. Equipment is evaluated using preventative maintenance procedures and operating procedures found in the equipment manuals.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2120 Electronics I or concurrent enrollment.
EET-2410 Biomedical Instrumentation II  
3 Credits  
Continuation of biomedical program. Study of general hospital equipment such as Safety Analyzers, Medtesters, IV Pumps, Defibrillators, Electrical Surgery Units, and Ventilators. Determine performance of equipment and verify that the equipment performs to specifications using simulators and analyzers. Equipment is evaluated using preventative maintenance procedures and operating procedures found in the equipment manuals.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-2400 Biomedical Instrumentation I, and EET-2220 Electronics II or concurrent enrollment.

EET-2490 Biomedical Design Project  
2 Credits  
Capstone course for Biomedical Engineering program. Designed to allow students to demonstrate and apply capabilities and skills acquired during their previous engineering technology coursework. Students are provided with a biomedical project compatible with their interest and background. Project includes research, documentation, construction and testing, and concludes with a report and presentation of results.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): EET-2220 Electronics II or concurrent enrollment, and EET-2410 Biomedical Instrumentation II or concurrent enrollment.

EET-2500 Instrumentation and Control  
3 Credits  
Concepts and practice in measurement and control of mechanical process variables in industry. Introduction to methods of instrumentation, characteristics of instruments, sensors, data acquisition and presentation, measurement and analysis of basic dimensions, force, motion, pressure, temperature, fluid flow and fluid viscosity.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): EET-1220 Circuits and Electronics; or EET-2120 Electronics I; or departmental approval.

EET-2520 Programmable Logic Controllers  
3 Credits  
Introduction to programmable logic controller terminology, architecture, input/output modules and memory. Relay schematics and ladder logic diagrams and programming of programmable logic controllers are covered and reinforced in practical laboratory experiments. Sensing devices as limit switches, on/off electrical devices, temperature switches, timing and counting devices as well as event-driven and time-driven sequences are also included.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1220 Circuits and Electronics; or EET-1210 AC Electric Circuits and EET-1241 Digital Circuits/Microprocessors I. OAN and CTAN Approved. CET022 and CTEET003.

EET-2591 Communications Design Project  
2 Credits  
Capstone course for the Digital Communications concentration in the Electronic Engineering Technology program. Designed to allow students to demonstrate and apply capabilities and skills acquired during previous engineering technology coursework. Students choose approved communications project compatible with their interest and background or can use a default project. Project includes research, documentation, construction and testing, and concludes with a report and an oral presentation of results.  
Laboratory: 4 hours  
Prerequisite(s): EET-1180 Surface Mount Soldering and EET-1240 Digital Fundamentals and EET-2220 Electronics II, or concurrent enrollment, and EET-2231 Wired and Wireless Communications, or concurrent enrollment.

EET-279H Sophomore Honors Contract  
1 Credit  
Sophomore Honors Contract in Electrical Engineering Technology complements and exceeds requirements and expected outcomes for an existing EET 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).  
Lecture: 1 hours  
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in EET, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

EET-2813 Special Topics: Cisco CCNA Networking Security  
3 Credits  
Provides next step skills enhancement for individuals with Cisco CCENT level skills in order to broaden their skills to meet the growing demand for network security professionals. Introduces core security concepts and skills needed to install, troubleshoot, and monitor network devices to maintain the integrity, confidentiality, and availability of devices and data. Develop skills required to develop a network security infrastructure, recognize threats and vulnerabilities in a network, and mitigate security threats. Prepares students for the Cisco 210-260 IINS CCNA Security certification exam and meets US National Security Agency and Committee on National Security Systems CNSS 4011 training standard.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1302 Cisco I Basic Networking Technologies and EET-1312 Cisco II Basic ROUTering and Switching, or departmental approval: current CCENT or CCNA certification.

EET-2830 Cooperative Field Experience  
1-3 Credits  
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.  
Other Required Hours: 180 clock hours of approved work per credit hour  
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application
EET-2901 Clinical Internship
3 Credits
Internship where students are expected to perform 360 hours of service at a local hospital or other biomedical facility. Students are expected to perform activities related to their biomedical technology field, including but not limited to repair of biomedical equipment, safety inspections, and calibration.
Other Required Hours: Practicum: 360 hours per semester/36 hours per week for 10 weeks.
Prerequisite(s): EET-2410 Biomedical Instrumentation II and EET-2220 Electronics II.

EET-2910 Directed Practice Electrical Utility Technology III
4 Credits
Supervised practical applications of electrical overhead line worker job duties in a setting under personal supervision of FirstEnergy personnel. Emphasis on skills required to identify, install, and maintain primary underground residential distribution (URD) equipment, including various methods of troubleshooting URD primary and secondary circuits. Grounding distribution circuits will also be learned. Students will develop the knowledge and skill to safely perform rubber gloving assignments utilizing the insulate and isolate techniques, will perform various tasks while working on an energized three-phase circuit under controlled conditions. Safety topics include: fire extinguisher safety, temporary protective grounds, stored energy devices, and utilities protective service.
Other Required Hours: Directed practice: 20 hours per week at site (300 hours per semester)
Prerequisite(s): EET-1920 Directed Practice Electric Utility Technology II.

EET-2915 Directed Practice Substation Utility Technology III
4 Credits
Third in a four part series providing the student with the advanced knowledge and skills necessary to safely work in a supervised capacity on energized equipment and in an unsupervised capacity on de-energized equipment employed in the production and distribution of electrical energy. This course also introduces the student to power transformer testing, troubleshooting, alarm systems, circuit breaker troubleshooting, reclosers and sectionalizers, OCB maintenance and voltage regulators.
Other Required Hours: Directed Practice: 20 hours per week at site (300 hours per semester)
Prerequisite(s): EET-1925 Directed Practice Substation Utility Technology II and concurrent enrollment in ISET-2240 Applied National Electric Code.

EET-2920 Directed Practice Electrical Utility Technology IV
4 Credits
Fourth in a four part series providing the student with the knowledge and skills to work safely and competently in a supervised or unsupervised capacity. The fourth series is the culmination of prior courses with the introduction of advanced knowledge and skills related to Motor Operates Air Brake Switch, electronic recloser controls, SF6 gas breakers, ACB maintenance, OCB timing and travel tests, calibration of various substation equipment, PT testing, phasing, switching procedures and the performance of energized primary work.
Other Required Hours: Directed Practice: 20 hours per week at site (300 hours per semester).
Prerequisite(s): EET-2910 Directed Practice Electrical Utility Technology III.

EET-2925 Directed Practice Substation Utility Technology IV
4 Credits
Fourth in a four part series providing the student with the knowledge and skills to work safely and competently in a supervised or unsupervised capacity. The fourth series is the culmination of prior courses with the introduction of advanced knowledge and skills related to Motor Operates Air Brake Switch, electronic recloser controls, SF6 gas breakers, ACB maintenance, OCB timing and travel tests, calibration of various substation equipment, PT testing, phasing, switching procedures and the performance of energized primary work.
Other Required Hours: Directed Practice: 20 hours per week on site (300 hours per semester).
Prerequisite(s): EET-2915 Directed Practice Substation Utility Technology III and concurrent enrollment in ISET-2250 Industrial Motor Controls.

Electroneurodiagnostic Technology (END)

END-1300 Introduction to Electroneurodiagnostic Technology
2 Credits
Introduction and orientation to health careers in field of electroneurodiagnostic including specific duties, certifications and licensure requirements, work setting and conditions, and career ladder opportunities. Overview of standards of practice of clinical neurophysiology with emphasis on neuroscience technique, instrumentation, terminology of electroneurodiagnostic practices and recording/monitoring techniques utilized in determination of treatment plans for neurological disorders, and basic medical terminology.
Lecture: 2 hours
Prerequisite(s): None.

END-1311 Cardiopulmonary Anatomy and Physiology
2 Credits
Anatomy and physiology of cardiovascular and pulmonary systems. Cardiovascular system anatomy and electrophysiology of the heart, electrocardiography (ECG) interpretation, blood flow characteristics and hemodynamics. Pulmonary system anatomy and physiology overview, principles of ventilatory control, diffusion, gas transport, and oxygenation.
Lecture: 2 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I, and departmental approval: admission to program.

END-1350 Introduction to Electroencephalography (EEG)
3 Credits
Provides basic knowledge of electroencephalography, understanding EEG concepts utilized for diagnosis of various cerebral disorders. Includes history, development, basic neurophysiology concepts of EEG, normal and abnormal brain wave patterns in adult and children, with emphasis on instrumentation and recording techniques.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I or concurrent enrollment, and concurrent enrollment in END-1300 Introduction to Electroneurodiagnostic Technology, and departmental approval: admission to program.
END-1450 Intermediate Electroencephalography (EEG)
3 Credits
Discussion of clinical significance of epileptiform patterns, pharmacological effects on EEG recordings; EEG correlation of infection; and vascular and structural disease. Presentation and discussion of criteria for special recordings techniques used in prolonged EEG recordings, specialized areas of the hospital, such as intensive care and operating room. Discussion of EEG signal analysis.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-1350 Introduction to EEG, or departmental approval.

END-1500 Basic Evoked Potentials
3 Credits
Basic discussion of evoked potential recording techniques. Emphasis on equipment, principles of operation, associated waves related to normal and abnormal waveforms, placement and calibration, obtaining clearly resolved and replicated obligated waveforms of brainstem auditory, visual, and somatosensory evoked potentials in adults and pediatric subjects.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-1450 Intermediate EEG or concurrent enrollment, or departmental approval.

END-1911 END Directed Practice I
3 Credits
Clinical electroencephalography experience in a selected neurodiagnostic lab or an affiliated health care facility under the direct supervision of an EEG technologist or physician. Emphasis on EEG concepts. Performance of EEG testing on clinical patients, medical record keeping, and clinical history taking.
Other Required Hours: Directed Practice: 15 hours per week for 15 weeks.
Prerequisite(s): END-1350 Introduction to Electroencephalography (EEG) and concurrent enrollment in END-1450 Intermediate Electroencephalography (EEG).

END-2300 Nerve Conduction Studies
3 Credits
Basic discussion of nerve conduction studies and electromyography. Emphasis on equipment, knowledge of placement stimulation sites, sources of error in nerve conduction studies, electronics, pathology (abnormal nerve conduction studies, anatomy as it pertains to entrapment sites and nerve conduction studies), waveforms identification and case presentation.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG), and concurrent enrollment in END-2911 END Directed Practice II, or departmental approval.

END-2320 Intermediate Nerve Conduction Studies
3 Credits
Advanced discussion of nerve conduction studies and electromyography. Emphasis on less routine nerve conduction studies (NCS), anomalous innervations, equipment, knowledge, placement stimulation sites, sources of error in nerve conduction studies, electronics, pathology, waveforms identification and case presentation.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-2300 Nerve Conduction Studies.

END-2400 Intraoperative Monitoring for Electroneurodiagnostic Technologists
2 Credits
Introductory discussion of intraoperative monitoring of entire nervous system structure and function integrity during surgical procedures. Types of recordings, technologists role, recording parameters, reasons for surgical monitoring, variables affecting monitoring, and critical parameters.
Lecture: 2 hours
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG), and END-1500 Basic Evoked Potentials, and BIO-2341 Anatomy and Physiology II or concurrent enrollment.

END-2412 Neurophysiology of Electroencephalography/Sleep Disorders
2 Credits
Analysis of the central and peripheral nervous system, electrophysiology, and nerve conducting velocities in health and disease. Includes discussion of neurophysiology of sleep and the role of the autonomic nervous system. Emphasis on respiratory and cardiovascular effects, regulation of sleep, circadian rhythms and maturation of the sleep stages addressing neonates to adults.
Lecture: 2 hours
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and END-1450 Intermediate Electroencephalography (EEG), or departmental approval.

END-2420 Intermediate Intraoperative Monitoring
2 Credits
Intermediate discussion of principles of intraoperative monitoring of the nervous system structure and function integrity during surgical procedures. Emphasis on various types of surgery, decision making on the modality, signal improvement, in-depth discussion of variables and co-morbidities, surgical outcomes.
Lecture: 2 hours
Prerequisite(s): END-2400 Intraoperative Monitoring for Electroneurodiagnostic Technologists; or departmental approval.

END-2451 Neonatal/Pediatric Electroencephalography
3 Credits
Discussion of neonatal and pediatric electroencephalography. Review the electrographic and clinical findings associated with neonatal and pediatric epilepsy syndromes and seizures. Discussion of long term epilepsy monitoring, pediatric epilepsy surgery and functional cortical mapping. Discussion of automatic seizure detection, artifact rejection and trending software.
Lecture: 3 hours
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG).

END-2510 Principles of Polysomnography
3 Credits
Overview of the field of Polysomnography including job responsibilities, credentialing, medical ethics and patient confidentiality. Normal and abnormal sleep patterns, integrating the physiologic functions of the nervous system. Emphasis on basic sleep sciences, physiology, monitoring, montages, electrical safety, diagnosis and treatment of sleep disorders, and PSG patient hook-up and monitoring procedures.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and END-1450 Intermediate Electroencephalography (EEG), and END-1911 END Directed Practice I.
END-2520 Intermediate Polysomnography I
3 Credits
Discussion of the classification of sleep disorders, and the physiological
effects of sleep disorders and ramifications/implications on patient
health. Discuss medication effects on sleep stages/patterns. Discussion
of various therapies for sleep disordered breathing, and other sleep
disorders. Discussion on monitoring of nocturnal seizures, and seizure
types. Laboratory section focus on PAP set-up, nocturnal O2, CO2
monitoring, as well as administration of nocturnal O2, and advanced set-
ups for nocturnal seizure monitoring.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-2510 Principles of Polysomnography, and
END-2911 END Directed Practice II, and END-2451 Neonatal/Pediatric
Electroencephalography.

END-2530 Intermediate Polysomnography II
3 Credits
Presentation and discussion of parameters, digital and technical
specifications of polysomnography, the staging and scoring of adult and
pediatric sleep patterns, and identification/classification of various forms
of sleep disordered breathing and movement disorders. Discussion of
sleep calculations and daytime sleep studies (MSLT/MWT). Discussion
on advanced PAP therapies (ASV) and esophageal pH and NPT testing.
Discussion of aspects of sleep disorders lab management, and Home
Sleep Testing (HST).
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-2412 Neurophysiology of Electroencephalography/Sleep
Disorders, and END-2520 Intermediate Polysomnography I, and END-2915
Polysomnography Directed Practice I.

END-2820 Advanced Independent Study/Research in
Electroneurodiagnostic Technology
1-3 Credits
Independent two-hour lab per credit. Directed individual study. Study/ research title and specific content arranged between instructor and
student (see Credit Schedule of classes for current offerings). May be
repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and
ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

END-2911 END Directed Practice II
2 Credits
Continuation of directed practice in clinical setting at neurology
laboratory or neurodiagnostics department. Departmental orientation,
policies and procedures, assist patient setup, performance and
discontinuance of neurodiagnostic activities performed at the assigned
clinical site.
Lecture: 1 hour
Other Required Hours: Directed Practice: 8 hours per week for 10 weeks (80
hours total).
Prerequisite(s): END-1500 Evoked Potentials and END-1911 END Directed
practice I, or departmental approval.

END-2915 Polysomnography Directed Practice I
3 Credits
Directed practice in the clinical setting in a sleep laboratory or a sleep
center. Departmental orientation, policies and procedures, individual
body mechanics and patient transfer techniques. Gather and analyze
patient information, perform testing preparation procedures, perform
polysomnographic procedures. Emphasis on performing overnight
diagnostic and therapeutic polysomnograms.
Other Required Hours: 15 hours per week Directed practice in a clinical
setting. (Two 7.5 hour days)
Prerequisite(s): END-2510 Principles of Polysomnography, and
END-2911 END Directed Practice II, and END-2451 Neonatal/Pediatric
Electroencephalography; and concurrent enrollment in END-2520
Intermediate Polysomnography I.

END-2921 END Directed Practice III
2 Credits
Clinical electroencephalography experience in a selected neurodiagnostic
lab in health care facility under direct supervision of an EEG technologist
or physician office. Emphasis on EEG testing in neonates, infants and
pediatric population, long-term monitoring, and critical care units, medical
record keeping and clinical history taking.
Lecture: 1 hour
Prerequisite(s): END-2911 END Directed Practice II, and END-2451 Neonatal/
Pediatric Electroencephalography; or departmental approval.

END-2931 END Directed Practice IV
3 Credits
Directed practice in clinical setting at neurology laboratory or
neurodiagnostics department. Departmental orientation, policies and
procedures, assist patient setup and discontinuance in monitoring of
electromyography (EMG) activities. Experience with nerve conduction
studies, and continuation of performance of EEG testing.
Prerequisite(s): END-2921 END Directed Practice III, and END-2300 Nerve
Conduction Studies; and concurrent enrollment in END-2320 Intermediate
Nerve Conduction Studies.

END-2990 Electroneurodiagnostic Capstone
1 Credit
Capstone course in Electroneurodiagnostic Technology. Assessment
of one’s knowledge, experience and skills as electroneurodiagnostic
technologist. Preparation and presentation of qualifications through
written resume and portfolio. Guidelines and preparation for employment
interview. Investigation into electroneurodiagnostic issues.
Lecture: 1 hours
Prerequisite(s): END-2921 END Directed Practice III, or END-2520 Intermediate
Polysomnography I.
Emergency Medical Technology (EMT)

EMT-1302 Emergency Medical Technician - Basic
6 Credits
Comprehensive study of basic life support skills of Emergency Medical Technician-Basic based on the U.S. Department of Transportation National Standard EMT-Basic Curriculum and the EMT-Basic curriculum, most current version. Includes recognition of nature and seriousness of patient’s condition or extent of injuries; and assessing requirements of emergency care, lifting, moving, handling and transporting patients as part of pre-hospital emergency care system. Successful completion of American Heart Association-Basic Life Support for the Healthcare Provider Course component of course required to successfully complete EMT-1302. Successful Completion of EMT-1302 and EMT-130L required for NREMT and State of Ohio EMT-Basic certification.
Lecture: 5 hours. Laboratory: 2 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English Placement Test; and MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate Math placement score, and departmental approval: admission to the program. CTAN Approved: CTEMS002 (1 of 2 courses, both must be taken).

EMT-130L EMT Basic Practical Lab
1 Credit
This course provides the simulation labs and directed practice to complete the requirements for National Registry of EMTs (NREMT) EMT-Basic certification. This is the primary requirement for State of Ohio EMT Basic Certification.
Laboratory: 1.5 hour
Other Required Hours: 37.5 Hours of directed practice performed in program approved external sites.
Prerequisite(s): EMT-1302 Emergency Medical Technician - Basic, or concurrent enrollment. CTAN Approved: CTEMS002 (2 of 2 courses, both must be taken).

EMT-1310 Cardiopulmonary Resuscitation
1 Credit
Designed to teach the skills of CPR for victims of all ages, ventilation with barrier devices, use of an automated external defibrillator (AED), and relief of foreign-body airway obstruction. Intended for participants who provide health care in a variety of settings. The course also provides first aid basics for the most common first aid emergencies. Upon successful completion of the course, including a written and skills test, students receive an American Heart Association Basic Life Support course completion card.
Lecture: 1 hour
Prerequisite(s): None. CTAN Approved: CTEMS004 (1 of 6 courses, all must be taken).

EMT-1320 Heavy Rescue
2 Credits
Techniques of heavy rescue, safe management of equipment used in heavy rescue, entrapment and patient extrication.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval: certified EMT-B; emergency workers must be in good health or have physicians verification, must be able to lift 75 pounds. CTAN Approved: CTF003 (5 of 5 courses, all must be taken)

EMT-1330 Defensive Driving - EMT
1 Credit
Principles and practices of defensive driving related to emergency rescue vehicles including laws, conditions of accidents and methods of avoiding accidents.
Laboratory: 2 hours
Prerequisite(s): Departmental approval: admission to program, or certified EMT-B, or working with safety forces; must have valid Ohio drivers license.

EMT-1401 Anatomy & Physiology for Paramedics
4 Credits
Basic structure and function of body systems and diseases of these systems to provide a foundation for EMT and paramedic certification.
Lecture: 4 hours
Prerequisite(s): None.

EMT-2330 Paramedic Theory I
6 Credits
Lecture: 4 hours. Laboratory: 4 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I, and BIO-2341 Anatomy and Physiology II; or EMT-1401 Anatomy & Physiology for Paramedics; and current Ohio Certified EMT-B, and departmental approval. CTAN Approved: CTEMS004 (2 of 6 courses, all must be taken).

EMT-2340 Paramedic Theory II
6 Credits
Principles and practices of paramedic based on the current Department of Transportation National EMS scope of practice model and education standards and the current State of Ohio Paramedic Curriculum. Includes airway management, physical examination, trauma systems with mechanism of injury, hemorrhage and shock, trauma assessment and management related to: soft tissue, musculoskeletal, head, face, spinal, thoracic and abdominal injuries including burns.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): EMT-2330 Paramedic Theory I, and departmental approval: current Ohio EMT-B certification. CTAN Approved: CTEMS004 (3 of 6 courses, all must be taken).

EMT-2350 Paramedic Theory III
6 Credits
Principles and practices of emergency medical technician paramedics based on the Department of Transportation National Standard Paramedic Curriculum, current to at least 2011, and the State of Ohio Paramedic Curriculum effective 2012. Includes anatomy and physiology of the pulmonary system, assessment and treatment of pulmonary emergencies, anatomy and physiology of cardiovascular system, assessment of cardiac and stroke patient, EKG interpretation, cardiac and stroke treatment modalities, cardiac treatment pharmacology, defibrillation, and advanced cardiac life support.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): EMT-2330 Paramedic Theory I, and departmental approval: Ohio EMT-B certification. CTAN Approved: CTEMS004 (4 of 6 courses, all must be taken).
EMT-2360 Paramedic Theory IV
6 Credits
Principles and practices of the paramedic based on current Department of Transportation National EMS scope of practice model and education standards, current State of Ohio Paramedic Curriculum. Management of endocrine, GI, renal/urological, toxicology, hematology, infectious, environmental and behavioral emergencies. Management of special needs patients (geriatric, pediatric, and neonatal) along with assessment and treatment of the OB/GYN patient and emergency field delivery procedures along with basic orientation in ambulance operations, hazardous materials, rescue awareness and crime scene awareness.
Lecture: 4 hours. Laboratory: 3 hours
Other Required Hours: Directed Practice: 112 hours per semester.
Prerequisite(s): EMT-2350 Paramedic Theory III, and current Ohio EMT-Basic certification. CTAN Approved: CTEMS004 (5 of 6 courses, all must be taken).

EMT-2371 Paramedic Capstone Course
5 Credits
Paramedic Capstone Course. Final course in sequence necessary for NREMTParamedic Certification and State of Ohio Paramedic certification. Integration of course knowledge and skills to demonstrate competence in American Heart Association Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS); American College of Surgeons or American College of Emergency Physicians approved trauma life support and National Association of EMT (NAEMT) medical life support standards. Additionally directed practice and field experience environment with demonstration of team leadership and integration with other medical professionals.
Lecture: 3 hours. Laboratory: 3 hours
Other Required Hours: Directed Practice and field experience: 112 hours per semester.
Prerequisite(s): EMT-2360 Paramedic Theory IV, and departmental approval: State of Ohio Certified EMT-Basic.

EMT-2400 Advanced Cardiac Life Support
1 Credit
Advanced cardiac life support (ACLS) emphasizes the importance of basic life support cardiopulmonary resuscitation (CPR) to patient survival, the integration of effective basic life support with advanced cardiovascular life support interventions, and the importance of effective team interaction and communication during resuscitation. Students engage in simulated clinical scenarios that encourage active, hands-on participation through learning stations where students will practice essential skills individually, as part of a team, and as team leader.
Lecture: 1 hours
Prerequisite(s): Departmental approval: valid current American Heart Healthcare Provider CPR certification required.

EMT-2819 Special Topics in Critical Care Paramedic
5 Credits
The CCEMTP program will assist the clinician in developing the necessary skills and knowledge to manage critical patients during a high risk transfer. Essentially, CCEMTP is “post graduate education” for the paramedic or nurse that attempts to standardize training and level of care in inter-facility transport.
Lecture: 4 hours. Laboratory: 2 hours
Prerequisite(s): Departmental approval: Paramedic requirements: a current professional license and a recommended minimum of one year experience in that role; or Nurse Requirements: A current professional license and a recommended minimum of one year experience in that role.

EMT-2820 Advanced Independent Study/Research in Emergency Medical Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

EMS Training (ZEMS)

ZEMS-1002 48 Hour Paramedic Refresher
4.8 CEU’s
This course meets the requirements of the Ohio Department of Public Safety (ODPS) 48-Hour Refresher Course, 4765-17-01.
Contact hours: 48
Not financial aid eligible.

ZEMS-1003 EMT Refresher - Basic
3 CEU’s
This course meets the requirements of the Ohio Department of Public Safety (ODPS) 30-hour EMT Basic Course, 4765-15-01.
Contact hours: 30
Not financial aid eligible.

ZEMS-1012 CCEMT-P Course
8 CEU’s
The course is designed to prepare paramedics and nurses to function as members of a critical care transport team. Participants will gain an understanding of the special needs of critical patients during transport, become familiar with the purpose and mechanisms of hospital procedures and equipment, and develop the skills to maintain the stability of hospital equipment and procedures during transport.
Contact hours: 80
Not financial aid eligible.

ZEMS-1015 EMS Instructor Course
8 CEU’s
This course is an EMS instructor training program which shall consist of eighty hours. This course is designed for individuals seeking certification as an EMS Instructor.
Contact hours: 80
Not financial aid eligible.

ZEMS-1020 Heartsaver/AED
0.3 CEU’s
Heartsaver AED course teaches the basic techniques of adult CPR and the use of the AED (automatic external defibrillator).
Contact hours: 3
Not financial aid eligible.
**ZEMS-1041 BLS for Healthcare**
0.45 CEU's
This course is designed to teach CPR skills, including barrier device, bag, mask device and oxygen, use of an automated external defibrillator (AED) and relief of foreign body airway obstruction. (FBAO) It is intended for individuals who provide healthcare to patients in a wide variety of settings.
Contact hours: 4.5
Not financial aid eligible.

**ZEMS-1044 Heartsaver CPR AED & First Aid**
0.75 CEU's
Heartsaver AED First Aid course teaches the basic techniques of adult CPR and the use of the AED and to effectively recognize and treat adult emergencies in the critical first minutes.
Contact hours: 7.5
Not financial aid eligible.

**ZEMS-1046 EMS Instructor — Bridge**
0.8 CEU's
This course is for any EMT or paramedic who must complete the National Registry psychomotor skills exam for the purpose of retesting and/or entrance into an EMS-I course.
Contact hours: 8
Not financial aid eligible.

**ZEMS-1047 EMS Skills Day**
0.8 CEU's
This course is for any EMT or paramedic who must complete the National Registry psychomotor skills exam for the purpose of retesting and/or entrance into an EMS-I course. Certificate valid for one year. Call for available dates.
Contact hours: 8
Not financial aid eligible.

**ZEMS-1048 Emergency Medical Responder CE 8.0**
0.8 CEU's
Continuing education course for emergency medical responders.
Contact hours: 8
Not financial aid eligible.

**ZEMS-1050 ACLS 8 Hour Refresher**
0.8 CEU's
ACLS is an advanced, instructor-led classroom course that highlights the importance of team dynamics and communication, systems of care and immediate post-cardiac arrest care. It also covers airway management and related pharmacology. In this course, skills are taught in large group sessions and small, group-learning and testing stations in which case-based scenarios are presented.
Contact hours: 8
Not financial aid eligible.

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**English (ENG)**

**ENG-0800 Developmental Special Topics in English**
1-3 Credits
Study of selected developmental topics of current issues in English. Provides student an opportunity to explore various topics in greater detail (see current semester Credit Schedule for offerings). Repeatable for different topics. May not be applied toward elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

**ENG-0900 Transition to College English**
1 Credit
Intensive practice in writing for the purpose of preparing students for college-level English. Successful completion permits a student to enroll in ENG-1010.
Lecture: 1 hours
Prerequisite(s): Appropriate placement test score or departmental approval.

**ENG-0980 Language Fundamentals I**
6 Credits
Emphasis on mastery of language fundamentals.
Lecture: 6 hours
Prerequisite(s): Appropriate score on English placement test; or departmental approval.

**ENG-0990 Language Fundamentals II**
6 Credits
Emphasis on basic essay writing skills, reading, study and test-taking skills.
Lecture: 6 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or placement by department.

**ENG-1001 Intensive College Reading & Writing**
3 Credits
Course provides support for students enrolled in ENG-1010 College Composition I through intensive instruction in academic writing, reading skills, study skills, grammar, mechanics, and test-taking strategies.
Lecture: 3 hours
Prerequisite(s): Appropriate placement score, and concurrent enrollment in ENG-1010 College Composition I, or departmental approval.

**ENG-1005 Reading for College Courses**
3 Credits
Improve reading skills so they can effectively read and use texts/resources in college classes. Texts/resources can include words, images, videos, charts, signs, or any object that can be read and interpreted.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English placement test, or departmental approval.
ENG-1010 College Composition I
3 Credits
Study of and practice in academic writing; reading and interpretation of selected texts. Course may be thematically organized.
Lecture: 3 hours
Prerequisite(s): Appropriate placement test score, or ENG-0900 Transition to College English; or ENG-0990 Language Fundamentals II; or ESL-1310 English as a Second Language: Grammar for Communication III and ESL-1321 ESL: Reading and Writing III, and ESL-1331 English as a Second Language: Speaking and Listening III; or ESL-1510 English as a Second Language: Accelerated Grammar II, and ESL-1520 English as a Second Language: Accelerated Writing II, and ESL-1530 English as a Second Language: Accelerated Speaking & Listening II, and ESL-1540 English as a Second Language: Accelerated Reading II; or departmental approval.
OAN Approved: TME001.

ENG-101H Honors College Composition I
3 Credits
Study and practice in academic writing; reading and interpretation of selected texts. Requires intensive critical/analytical thinking, writing and speaking. Course may be thematically organized. Note: Course meets the ENG-1010 graduation requirements.
Lecture: 3 hours
Prerequisite(s): Appropriate placement test score, or departmental approval.
OAN Approved: TME001.

ENG-1020 College Composition II
3 Credits
Study and practice of persuasive and argumentative writing with emphasis on analysis and research; reading and interpretation of selected texts. Course may be thematically organized. Note: Course meets the ENG-1020 graduation requirements.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.
OAN Approved: TME002.

ENG-102H Honors College Composition II
3 Credits
Study and practice of persuasive and argumentative writing with emphasis on analysis and research; reading and interpretation of selected texts. Requires intensive critical/analytical thinking, writing and speaking. Course may be thematically organized. Note: Course meets the ENG-1020 graduation requirements.
Lecture: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I; or ENG-1010 College Composition I and departmental approval.
OAN Approved: TME002.

ENG-179H Honors Contract in English
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

ENG-1820 Independent Study/Research in English
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ENG-182H Honors Independent Study/Research in English
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ENG-2010 Creative Writing
3 Credits
Practice in imaginative writing; exploration of creative potential. Emphasis on sources of creativity and forms of expression in selected literary genres.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.
OAN Approved: TME002.

ENG-2020 Women Writers on the Experiences of Women
3 Credits
An introduction to women's literature through the study of classic and contemporary readings. Involves analysis of theme, character, plot, setting, dramatic conflict, and writing style. Provides an opportunity to study literature by women authors that are not traditionally covered in most American and British literature survey courses.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.
ENG-2040 Poetry Workshop
3 Credits
Practice in imaginative writing, exploration of creative potential. Emphasis on sources of creativity and forms of expression in poetry and its subgenres.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II.

ENG-2151 Technical Writing
3 Credits
The role of writer and audience in the technical communication process; emphasis on the actual writing and evaluation of technical, business, and online documents; includes layout, design principles, and ethical issues as well as writing for diverse audiences. Requires individual and group writing projects and presentations.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors, or departmental approval.

ENG-2310 American Literature I
3 Credits
Survey of significant works of American prose and poetry from the pre-Columbian period through 1865.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH and OAH053.

ENG-2320 American Literature II
3 Credits
Survey of major works of American prose, poetry, and drama from 1865 to present.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH and OAH054.

ENG-2350 British Literature I
3 Credits
Survey of major works of British prose, poetry, and drama from early period to 1785.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH and OAH055.

ENG-2360 British Literature II
3 Credits
Survey of major works of British prose, poetry, and drama from 1785 to present.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH and OAH056.

ENG-2410 Introduction to Literature: Poetry
3 Credits
Critical analysis of selected works of poetry, designed to develop understanding and appreciation of poem as literary forms.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2420 Introduction to Literature: Fiction
3 Credits
Critical analysis of selected works of fiction, designed to develop understanding and appreciation of various modes of fiction as literary forms.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2430 Introduction to Literature: Drama
3 Credits
Reading, discussion, interpretation, and critical analysis of a variety of dramatic works. Designed to develop understanding and appreciation of drama as a literary form.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2450 Introduction to Literature: Science Fiction
3 Credits
This course surveys the historical roots, literary forms, major works, and subgenre of science fiction literature.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.

ENG-2510 African-American Literature I
3 Credits
Study of major works of African-Americans from colonial period to 1940.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2520 African-American Literature II
3 Credits
Study of major works of African-Americans from 1940 to present.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2601 Literature for Children and Adolescents
3 Credits
Reading, discussion, interpretation, and written analysis of a wide variety of literary works written for children and adolescents
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.
OAN Approved: TMAH.
ENG-2700 World Literature
3 Credits
Study of World's major authors, themes, and literary movements from earliest literature to modern literature. Emphasis is on writers from the non-Western world. Some works of Western authors may be used for comparative purposes and to demonstrate interconnectedness of world's various cultures.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2710 Shakespeare
3 Credits
Critical analysis of selected works of Shakespeare.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors, or departmental approval.
OAN Approved: TMAH.

ENG-2720 Survey of Biblical Literature
3 Credits
Critical analysis of selected books of the Bible with emphasis on those works that have been particularly influential in Western literary tradition.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.
OAN Approved: TMAH.

ENG-2730 Exploration of World Mythology
3 Credits
Reading and interpreting myths throughout history and from around the world including Africa, Asia, Australasia, Caribbean, Europe, Latin America, Middle East, and North America (emphasis on non-Western cultures). Practice of various analytical approaches essential to building interpretive arguments and for identifying patterns across diverse cultures.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors Composition II, or departmental approval.
OAN Approved: TMAH.

ENG-2740 Literature and Film
3 Credits
Analyze various interrelated film and literary texts. Examine film and literature as distinct but related media forms, explore thematic relationships between specific films and works of literature, and analyze filmic adaptations of literature.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.

ENG-2760 Detective Fiction: Mystery, Murder, and Malice
3 Credits
Study of detective fiction as a genre from the nineteenth century to the present day.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II, or departmental approval.

ENG-2770 Rhetorics of Gaming: Introduction to Video Game Analysis
3 Credits
An introduction to video game analysis, this course offers critical ways to understand games as complex narrative and cultural texts. The course explores theories of play, the history of gaming industries and game studies as an academic field, and a variety of analytical lenses through which to study this influential cultural form. Emphasizes playing, researching, and writing about video games and gaming culture in theoretically, rhetorically, and methodologically sound ways.
Lecture: 3 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II; or departmental approval.

ENG-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in English complements and exceeds requirements and expected outcomes for an existing English 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in English, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

ENG-2800 Special Topics: Creative Writing: The Memoir
1 Credit
The class will present the basics of memoir writing and will discuss the many different approaches to writing a memoir. The main focus of the class will be writing memoirs in a workshop environment with various formal and informal writing assignments. The class will also analyze published memoirs as models of effective memoir writing.
Lecture: 1 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

ENG-2820 Advanced Independent Study/Research in Literature
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
ENG-282H Advanced Honors Independent Study/Research in English Literature
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

English As A Second Language (ESL)

All courses (except ESL-1480) are in the English as a Second Language program sequence, which leads to English 1010 and is on a pathway to an academic course of study.

ESL-1020 English as a Second Language: Basic Reading and Writing
6 Credits
English for non-native speakers. Practice in reading beginning material. Practice in writing sentences, short answers, controlled compositions, and responses to picture stories.
Lecture: 5 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1030 English as a Second Language: Basic Grammar for Communication or concurrent enrollment; and placement by ESL assessment exam.

ESL-1030 English as a Second Language: Basic Grammar for Communication
6 Credits
English for non-native speakers. Understanding and practice of basic grammatical forms and functions of American English. Focus on form, meaning, and use in written and oral communication.
Lecture: 5 hours. Laboratory: 2 hours
Prerequisite(s): Placement by ESL assessment exam.

ESL-1110 English as a Second Language: Grammar for Communication I
4 Credits
English for non-native speakers. Understanding of basic grammar structures of American English and practice in producing them. Focus on form, meaning and use in oral and written communication.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1030 Basic Grammar for Communication and ESL-1020 Basic Reading and Writing; or placement by ESL assessment exam.

ESL-1121 English as a Second Language: Reading and Writing I
4 Credits
English for non-native speakers. Practice in reading high-beginning texts. Practice in writing narratives and personal expression paragraphs using basic sentence patterns and correct spelling and punctuation.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1030 English as a Second Language: Basic Grammar for Communication, and ESL-1020 English as a Second Language: Basic Reading and Writing; or placement by ESL assessment exam; and ESL-1110 English as a Second Language: Grammar for Communication I, or concurrent enrollment.

ESL-1131 English as a Second Language: Speaking and Listening I
4 Credits
High-beginning level communication for non-native speakers. Practice communicating by speaking and listening to American English. Develop competence and confidence in listening comprehension and conversational skills with supportive structured situations. Recognize and produce sounds, rhythm and intonation patterns at a high beginning level.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1020 English as a Second Language: Basic Reading and Writing, and ESL-1030 English as a Second Language: Basic Grammar for Communication; or placement by ESL assessment exam; and ESL-1110 English as a Second Language: Grammar for Communication I, or concurrent enrollment.

ESL-1210 English as a Second Language: Grammar for Communication II
4 Credits
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1110 Grammar for Communication I, ESL-1121 English as a second Language: Reading and Writing I, and ESL-1131 Speaking and Listening I or placement by ESL assessment Exam.

ESL-1221 English as a Second Language: Reading and Writing II
4 Credits
English for non-native speakers. Practice in reading intermediate texts. Practice in writing personal essays and responses to readings, using intermediate sentence patterns and correct spelling and punctuation.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1131 English as a Second Language Speaking and Listening I, and ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I; or placement by ESL assessment exam; and ESL-1210 English as a Second Language: Grammar for Communication II, or concurrent enrollment.

ESL-1231 English as a Second Language: Speaking and Listening II
4 Credits
Intermediate communication for non-native speakers. Practice communicating by speaking and listening to American English. Develop competence and confidence in listening comprehension, intermediate note-taking, and conversational skills within supportive, structured and non-structured situations. Recognize and produce sounds, rhythm, stress, and intonation patterns at an intermediate level.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 Speaking English as a Second Language: Reading and Writing I; or placement by ESL assessment exam; and ESL-1210 English as a Second Language: Grammar for Communication II, or concurrent enrollment.

ESL-1310 English as a Second Language: Grammar for Communication III
4 Credits
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1210 Grammar for Communication II, ESL-1221 Reading and Writing II, and ESL-1231 Speaking II; or placement by ESL assessment exam.
ESL-1321 English as a Second Language: Reading and Writing III  
4 Credits
English for non-native speakers. Analyze advanced reading texts and literary material. Compose essays, summaries, and personal responses to readings, using advanced sentence patterns and correct spelling and punctuation.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1210 English as a Second Language: Grammar for Communication II, and ESL-1221 English as a Second Language: Reading and Writing II, and ESL-1231 English as a Second Language: Speaking and Listening II; or placement by ESL assessment exam; and ESL-1310 English as a Second Language: Grammar for Communication III, or concurrent enrollment.

ESL-1331 English as a Second Language: Speaking and Listening III  
4 Credits
High-intermediate communication for non-native speakers. Develop critical listening and speaking skills and strategies, improve pronunciation, and utilize advanced vocabulary and grammatical structures for academic, professional, and social settings. Develop notetaking skills and strategies for academic purposes.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1210 English as a Second Language: Grammar for Communication II, and ESL-1221 English as a Second Language: Reading and Writing II, and ESL-1231 Speaking English as a Second Language II; or placement by ESL assessment exam; and, ESL-1310 English as a Second Language: Grammar for Communication III or concurrent enrollment.

ESL-1480 TOEFL Preparation  
3 Credits
English for non-native speakers. Practice in reading advanced texts and literary material in preparation for the Test of English as a Foreign Language (TOEFL). Practice writing essays, using advanced sentence patterns and punctuation. Practice listening to conversations and lectures and synthesizing information from oral and written passages into organized essays. Practice speaking and formulating extended oral responses to questions.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ESL-1310 English as a Second Language: Grammar for Communication III or concurrent enrollment; and ESL-1321 Speaking English as a Second Language III or concurrent enrollment; and ESL-1331 English as a Second Language: Speaking and Listening II or concurrent enrollment; or departmental approval.

ESL-1510 English as a Second Language: Accelerated Grammar II  
6 Credits
Accelerated English for non-native speakers. Understanding and application of intermediate to advanced grammar structures of American English and practice in producing them. Focus on form, meaning, and use in oral and written communication.
Lecture: 5 hours. Laboratory: 2 hours
Prerequisite(s): ESL Department approval.

ESL-1520 English as a Second Language: Accelerated Writing II  
3 Credits
Accelerated English for non-native speakers. Intermediate to high intermediate and advanced ESL writing. Writing skills and strategies to prepare students for academic courses with an emphasis on increased comprehension and written communicative skills.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ESL departmental approval.

ESL-1530 English as a Second Language: Accelerated Speaking & Listening II  
4 Credits
Accelerated English for non-native speakers. Intermediate to high-intermediate speaking, listening, and note-taking skills. Strategies and practice in oral skills to build fluency, in aural skills to increase comprehension, and in note-taking skills to increase speed and organizational skills.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ESL departmental approval.

ESL-1540 English as a Second Language: Accelerated Reading II  
3 Credits
Accelerated English for non-native speakers. Intermediate to high intermediate and advanced reading and ESL writing. Reading Skills and strategies to prepare students for academic courses with an emphasis on increased comprehension in reading skills.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ESL departmental approval.

ESL-1820 Independent Study/Research in English as a Second Language  
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Environment (ZENV)

ZENV-0104 Solid Waste Operations (Online)  
13.2 CEU's
This course will provide participants with a comprehensive look at solid waste management, combining the aspects of landfill, composting and household hazardous waste operations. This class will meet or exceed requirements for the educational components of certification and the licensing required for solid waste professionals.
Contact hours: 132
Not financial aid eligible.

ZENV-0107 Certified Indoor Environmentalist (CIE) (Online)  
3.2 CEU's
The CIE course covers a wide range of topics related to IAQ contaminants, health effects, building science, HVAC, equipment, assessments, standards and remediation.
Contact hours: 32
Not financial aid eligible.

ZENV-0108 Certified Microbial Investigator (CMI) (Online)  
2.8 CEU's
Are you looking for certification to perform mold inspections? The most reputable mold certifications in the marketplace come from the American Council of Accredited Certification (ACAC).
Contact hours: 28
Not financial aid eligible.
ZENV-0109 Certified Indoor Air Quality Manager (CIAQM) (Online)
2.8 CEU's
The Council-Certified Indoor Air Quality Manager (CIAQM) course is comprehensive in its scope, covering concepts in IAQ management, preventative maintenance, microbiology, chemistry, building science, physics, engineering, construction, medicine and law.
Contact hours: 28
Not financial aid eligible.

ZENV-0113 Wind Energy Technician Career Prep (Online)
26.5 CEU's
As the world shifts away from reliance on fossil fuels, the wind energy industry leads the way. In just a few short decades, wind energy has evolved dramatically. Technological advances now make wind energy a cost-effective solution for the world's ever-growing energy needs. The United States leads in the overall wind power capacity. As the wind energy industry continues to expand in the U.S. and around the globe, it will provide many opportunities for new careers. These careers extend beyond the wind farm to manufacturing plants, offices, construction, operations and maintenance. This course provides an overview of wind-energy history, basic concepts, costs and uses. It covers wind-energy conversion and applications of various wind-turbine systems.
Contact hours: 265
Not financial aid eligible.

ZENV-0114 Sustainable Management Career Prep (Online)
11 CEU's
Companies are changing their product life-cycle and making adjustments to their supply chain due to a changing market, environmental issues and government regulations. This sustainable management course explores, realistically and in detail, the world's enormous potential for human and ecological regeneration. It also explains why this potential has been suppressed or distorted by industrial institutions, thus creating economic crisis, growing inequality and environmental destruction.
Contact hours: 110
Not financial aid eligible.

ZENV-0115 Sustainable Supply Chain Management Career Prep (Online)
9 CEU's
As a sustainable supply chain manager, you will need to develop action plans and implement green supply chains. This course provides a firm foundation for supply change management and tips to help you implement green initiatives. In this course, you will learn to make solid supply chain decisions and identify lean and green savings for supply chains.
Contact hours: 90
Not financial aid eligible.

ZENV-0116 Stormwater I (Online)
8 CEU's
This course addresses the concept of unit processes and operations as applied to stormwater management. Students will learn a simplified framework for facilitating communication between stormwater management professionals and how to promote the development of a site-level stormwater management strategy that serves as a blueprint for the design process. The importance of basin volume and the five categories of stormwater controls will also be covered.
Contact hours: 80
Not financial aid eligible.

ZENV-0117 Stormwater II (Online)
8 CEU's
This course explores whole life costing (also known as life cycle cost analysis) and teaches participants how to effectively evaluate the performance of stormwater controls. It addresses the importance of municipal, industrial and watershed agencies to screen and select site-specific and feasible stormwater controls that will achieve technical and regulatory requirements in a cost-effective manner. This course examines recent challenges and specific considerations pertinent to the selection and application of analytical tools.
Contact hours: 80
Not financial aid eligible.

ZENV-0118 Stormwater Management Hydraulics And Hydrology I (Online)
10 CEU's
This course examines various aspects of modern stormwater management and reviews general principles of engineering design. It describes the differences among solid, liquid and gas; properties of water, including cohesion, adhesion and capillarity; and provides a method of calculating the weight and gravity of various liquids, as well as the viscosity of a fluid. Participants will quantify the pressure exerted by water on an imaginary submerged surface or on container walls and describe the flow of water from a higher location to a lower location. Methods of measuring the flow of water are discussed, and computations are provided for: The flow through an orifice, over a weir and under a gate The slope of a channel Normal depth in a channel or pipe, and normal depth in a stream (including overbanks) A basic hydraulic jump
Contact hours: 100
Not financial aid eligible.

ZENV-0119 Stormwater Management Hydraulics And Hydrology II (Online)
10 CEU's
This course highlights Manning's Equation, as well as channel, pipe and stream flow. It describes varied flow in channels, culvert hydraulics, fundamental hydrology and provides necessary calculations for runoff. Participants will explore designs for storm sewer, culvert and detention, and explain stormwater detention.
Contact hours: 100
Not financial aid eligible.
ZENV-0120 Stormwater Management Career Prep (Online)  
36 CEU's  
This bundle course includes the following courses: Stormwater I, Stormwater II, Stormwater Management Hydraulics And Hydrology I, Stormwater Management Hydraulics And Hydrology II. Upon completion of the course bundle, students will be prepared to take the American Public Works Association (APWA) Certified Stormwater Manager (CSM) certification exam. Stormwater I: Stormwater effects on receiving streams and the aquatic ecosystems in them is very important. Developing performance goals and design criteria for stormwater controls is a necessary step. This course addresses the concept of unit processes and unit operations as they apply to stormwater management. Stormwater II: Maintenance activity to preserve the intended water quality, and stormwater conveyance capacity of stormwater controls are critical to stormwater management. This course explores Whole life costing (also known as life cycle cost analysis) and teaches participants how to effectively evaluate the performance of stormwater controls. Stormwater Management: Hydraulics And Hydrology I: The main focus of this course is engineering hydraulics and hydrology of yesterday and today. The course takes a close look at the various aspects of modern stormwater management and reviews general principles of engineering design. Stormwater Management: Hydraulics And Hydrology II: In the past, stormwater was considered a nuisance. Today it is viewed as a beneficial resource with the ability to return to its natural pathways through distributed controls. This course highlights the Manning’s Equation, channel, pipe and stream flow.  
Contact hours: 360  
Not financial aid eligible.

ZENV-0121 Composting Operations (Online)  
2.5 CEU's  
This course provides a comprehensive look at composting. It meets or exceeds requirements for the educational components of certification and/or licensing for solid waste professionals.  
Contact hours: 25  
Not financial aid eligible.

ZENV-0122 Household Hazardous Waste Operations (Online)  
2.4 CEU's  
This course will provide participants with a comprehensive look at household hazardous waste operations, and will meet or exceed requirements for the educational components of certification and/or licensing required for solid waste professionals.  
Contact hours: 24  
Not financial aid eligible.

ZENV-0123 Landfill Operations (Online)  
2.5 CEU's  
This course will provide participants with a comprehensive look at landfill operations, and will meet or exceed requirements for the educational components of certification and/or licensing required for solid waste professionals.  
Contact hours: 25  
Not financial aid eligible.

ZENV-0124 HazWoper 24-Hour Moderate Risk (Online)  
2.4 CEU's  
This course provides 24 hours of interactive training online for those needing Moderate Risk certification (29 CFR 1910.120). Topics include exercises on PPE, regulations, site characterization, confined space and decontamination. The course consists of online text, interactive exercises, web links, self-grading quizzes and a final exam.  
Contact hours: 24  
Not financial aid eligible.

ZENV-0125 HAZWOPER Refresher (8 hours)  
0.8 CEU's  
This one-day training session complies with 29 CFR 1910.120 requirements regarding annual refresher training for hazardous waste site workers. Participants will brush up on typical safety, health and other hazards that may be present at sites, as well as work practices that can help minimize risk. The group will also discuss and critique pertinent incidents volunteered by participants. The instructional methods used in this course will not only provide education and encourage participant interaction, but will also generate a facilitated work session focused on results.  
Contact hours: 8  
Not financial aid eligible.

ZENV-0187 EPA Lead Safe Renovator: Refresher Training (Renovation, Repair and Painting) (RRP)  
0.4 CEU's  
This course is a refresher for those having to renew their Certified Renovator training (every five years). Review regulations, setup practices, prohibited practices, personal protective equipment, dust control, cleanup practices, cleaning verification and record keeping. You must take a refresher course before the five-year expiration date to keep your certification current and valid. If you do not, you are required to re-take the initial training.  
Contact hours: 4  
Not financial aid eligible.

ZENV-0188 EPA Lead Safe Renovator: Initial Training (Renovation, Repair and Painting) (RRP)  
0.8 CEU's  
This eight-hour course will teach you how to comply with the EPA Renovation, Repair and Painting (RRP) Rule and the HUD Lead Safe Housing Rule, and how to perform lead-safe work practices safely and effectively. Includes hands-on procedures and a required certification exam. EPA Certified Renovator status will allow you to perform lead-safe renovation, repair and painting work in pre-1978 housing, and in child-occupied facilities where work will disturb lead-based paint. Your certification is valid for five years from the date of completion of the course. To renew certification after five years, you must successfully complete an EPA-accredited Certified Renovator refresher course before your initial certification expires. Refresher training must be completed every five years to maintain certification. If the certified renovator training is not refreshed within five years of the previous training, you must retake this initial course to become certified again.  
Contact hours: 8  
Not financial aid eligible.
ZENV-1049 OSHA 10-hour Construction
1.2 CEU’s
Taught by an OSHA-authorized instructor, this course provides you and your employees with an introduction to and review of current topics in the field of occupational safety and health that relate to the construction industry.
Contact hours: 12
Not financial aid eligible.

ZENV-1074 OSHA 30 Hour General Industry Training
3 CEU’s
This course is intended to provide a variety of training to workers with some safety responsibility. Workers must receive additional training on hazards specific to their job. Training will emphasize hazard identification, avoidance, control and prevention, does not include OSHA standards. OSHA 30-hour general industry cards will be issued to students upon completion of course.
Contact hours: 30
Not financial aid eligible.

ZENV-1092 OSHA 24 Hour Hazardous Material Technicians Training
2.4 CEU’s
This course covers the hazardous waste operations and emergency response regulations and requirements set for by OSHA, USEPA and other regulatory bodies for the 24-hour Hazardous Materials Technician training.
Contact hours: 24
Not financial aid eligible.

ZENV-1093 OSHA 40-Hour Hazardous Waste and Emergency Response Operations
4 CEU’s
This course covers the hazardous waste operations and emergency response regulations and requirements set for the by OSHA, USEPA and other regulatory bodies for 40-hour HAZWOPER training.
Contact hours: 40
Not financial aid eligible.

ZENV-1096 OSHA 30 Hr. General Industry
3 CEU’s
This course is designed to educate workers on workplace and jobsite safety. Specifically, those who successfully complete this specialized training should become familiar with recognizing, avoiding, preventing and stopping potential jobsite hazards. It’s OSHA Education Center’s Mission to ensure that workers at all responsibility levels and across all industries receive education about potentially common workplace hazards with this training. Upon successful completion, students will receive an OSHA 30 hour card.
Contact hours: 30
Not financial aid eligible.

ZENV-1097 OSHA 10 Hr Construction
1 CEU’s
This course is intended to provide entry level construction workers general awareness on recognizing and preventing hazards on a construction site. The training covers a variety of construction safety and health topics which a worker may encounter at a construction site. OSHA recommends this training as an orientation to occupational safety and health. Workers must receive additional training on hazards specific to their job. Upon successfully completion, students will receive an OSHA 10 hour card. American Red Cross CPR and First Aid cards are also awarded as part of this course.
Contact hours: 10
Not financial aid eligible.

ZENV-1195 OSHA 10-Hour General Industry
1.2 CEU’s
This 10-hour course promotes awareness of common job-related safety and health hazards. Participants will be introduced to OSHA policies, procedures and standards as well as general industry safety and health principles. Taught by OSHA-authorized instructors, this course helps participants make sense of OSHA standards and understand how to apply them.
Contact hours: 12
Not financial aid eligible.

Environmental, Health and Safety Technology (EHST)

EHST-1301 Introduction to Environmental Technology
3 Credits
Comprehensive overview of topics relating to the environmental technology field. Concentration on developing awareness of the many facets of science and technology that are involved in environmental management. Field trips may be required.
Lecture: 3 hours
Prerequisite(s): None.

EHST-1310 Introduction to Environmental Law
4 Credits
Study of U.S. environmental, health and safety, and transportation statutes and regulations. Provides an overview of the roles of the judicial and legislative branches and the executive agencies. Major federal laws examined include those setting policy, protecting air, water, soil, and workers in workplaces, and toxic substance controls. The role of State law is identified. Competency reading, interpreting, and utilizing sections from the Code of Federal Regulations and the United States Code are developed.
Lecture: 4 hours
Prerequisite(s): ENG-0990 Language Fundamentals I or appropriate score on English Placement Test.
EHST-1330 Hazardous Waste Operations and Emergency Response  
2 Credits  
Comprehensive instruction in the health and safety planning and procedures for 1) uncontrolled hazardous waste site work; 2) hazardous waste treatment, storage or disposal facilities (TSDFs) work; and 3) emergency responses to hazardous materials releases. Meets OSHA’s certification requirements for the "40 hour" off-site training portion of 29 CFR 1910.120 (the "HAZWOPER" standard).  
Lecture: 2 hours  
Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry or higher; and EHST-1301 Introduction to Environmental Technology, or MET-1100 Technology Orientation, or CNST-1281 Construction Engineering Technology.  
EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR  
3 Credits  
Develop ability to recognize safety and health hazards in both the general industry and construction work environments. Covers Occupational Safety and Health Administration (OSHA) regulations, employee rights and employer obligations. Includes certificate of Training in basic Industry Safety (OSHA 30: 29 CFR Parts 1910), Construction Safety (OSHA 10: 29 CFR Parts 1926) and American Red Cross Basic First Aid & CPR. Must attend designated class dates and pass related competency exams to earn training certificate.  
Lecture: 3 hours  
Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or MET-1100 Technology Orientation, or CNST-1281 Construction Engineering Orientation; or departmental approval.  
EHST-135A Safety and Health in the Workplace: OSHA 30 General Industry  
2 Credits  
Develop ability to recognize safety and health hazards in the general industry environments. Covers Occupational Safety and Health Administration (OSHA) regulations, employee rights and employer obligations. Includes certificate of Training in basic Industry Safety (OSHA 30: 29 CFR Parts 1910). Must attend designated class dates and pass related competency exams to earn training certificate.  
Lecture: 2 hours  
Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or MET-1100 Technology Orientation, or CNST-1281 Construction Engineering Orientation.  
EHST-135B Safety and Health in the Workplace OSHA 10 Construction  
1 Credit  
Develop ability to recognize safety and health hazards in construction work environments. Covers Occupational Safety and Health Administration (OSHA) regulations, employee rights and employer obligations. Includes certificate of Training in Construction Safety (OSHA 10: 29 CFR Parts 1926) and American Red Cross Basic First Aid & CPR. Must attend designated class dates and pass related competency exams to earn training certificate.  
Lecture: 1 hours  
Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or MET-1100 Technology Orientation, or CNST-1281 Construction Engineering Orientation.  
EHST-1360 Fundamentals of OSHA Compliance  
2 Credits  
Covers OSHA Standards, policies, and procedures for blood borne pathogens, accident investigation, confined spaces, record keeping and health topics such as chemicals, asbestos, lead and silica. Related OSHA training modules are embedded. Course will include OSHA training materials and related OSHA information to assure knowledge and competency in OSHA standards. Includes 29 CFR Part 1904, 29 CFR Parts 1910.146 and 29 CFR 1926 Subpart AA, 29 CFR Part 1910.1030 Certificate of Training Requirements. Must attend designated class dates and pass related competency exams to earn training certificate.  
Lecture: 2 hours  
Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or MET-1100 Technology Orientation, or CNST-1281 Construction Engineering Orientation.  
EHST-1810 ST: OSHA Standards-511  
2 Credits  
Course covers OSHA policies, procedures, and standards as well as general industry safety and health principles. Topics include scope and application of OSHA general industry standards. Special emphasis is placed on those areas that are most hazardous, using OSHA as a guide.  
Lecture: 2 hours  
Prerequisite(s): Recommend EHST1350 Health and Safety in the Workplace.  
EHST-2221 Introduction to Safety and Health Management  
2 Credits  
Overview of Safety & Health Management Systems (SHMS), in the U.S. and internationally, focusing on OSHA’s guidelines, and the International Standards Organization (ISO) standards for SHMS. Covers auditing; setting an environmental/safety policy; risk assessments; waste minimization; the benefits of the SHMS system; regulatory and certification requirements; implementation; monitoring and measuring program results. Includes assessing and reviewing programs to ensure continual improvement. Includes Certificate of Training in ISO standards and OSHA’s Safety and Health Management System. Must attend designated class dates and pass related competency exams to earn training certificate.  
Lecture: 2 hours  
Prerequisite(s): EHST-1310 Introduction to Environmental Law.  
EHST-2341 Hazardous Material Transportation  
2 Credits  
Detailed study of U.S. Department of Transportation (DOT) regulations as well as an introduction to domestic and international transportation organizations and their rules for air, ground and vessel transportation. Students learn to interpret DOT hazardous materials transportation regulations, recommend compliance strategies, select packaging, labeling, documentation and placarding for selected hazardous materials, as well as emergency response procedures.  
Lecture: 2 hours  
Prerequisite(s): EHST-1310 Introduction to Environmental Law.
EHST-2352 Evacuation and Emergency Planning
2 Credits

Course emphasizes the elements of an emergency action plan and emergency evacuation floor plans, recognize violations of OSHA exit route requirements, determine whether their organization requires an emergency action plan, and develop and implement workplace emergency action and fire protection plans. Includes 29 CFR 1910.38 Certificate of Training requirements. Must attend designated class dates and pass related competency exams to earn training certificate.

Lecture: 2 hours
Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR. In order to maximize student’s understanding and knowledge, it is recommended that EHST 1351 be taken prior to EHST 2352 for command understanding of the underlying OSHA laws and regulations.

EHST-2361 Environmental Sampling and Analysis
4 Credits

Covers the methodology of obtaining, documenting, managing, and interpreting the results of environmental and workplace sampling and monitoring efforts. Emphasis on the selection of appropriate equipment and procedures for collecting air, water, groundwater, soil, surface dust, and various waste samples and their use in the execution of sampling/monitoring plans or workplace health programs. Field trips may be required.

Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher.

EHST-236A Environmental Sampling and Analysis
2 Credits

Covers the methodology of obtaining, documenting, managing, and interpreting the results of environmental sampling and monitoring efforts. Emphasis on the selection of appropriate equipment and procedures for collecting air, water, groundwater, soil, surface dust, and various waste samples and their use in the execution of sampling/monitoring plans.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher.

EHST-236B Industrial Hygiene
2 Credits

Covers the methodology of obtaining, documenting, managing, and interpreting the results of workplace sampling and monitoring efforts. Emphasis on the selection of appropriate equipment and procedures samples for workplace health programs.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher.

EHST-2380 Risk Assessment
2 Credits

Presents the basic principles and methods of conducting a human health risk assessment. Hazard identification, exposure assessment, and characterization of consequences at workplaces and/or contaminated sites are examined using description and data from case studies. Strengths, weaknesses, and limitations of modern risk assessment are identified. Application of risk assessment into many aspects of work life and environmental protection are considered.

Lecture: 2 hours
Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or departmental approval.

EHST-2390 Solid and Hazardous Waste Management
3 Credits

Study of federal, state and local statutes, laws, regulations, ordinances and guidelines pertaining to solid and hazardous, generation, storage, disposal and waste management, with an emphasis on the requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. Management of hazardous wastes includes "cradle to grave" requirements, disposal records, enforcement strategies, record keeping, and training.

Lecture: 3 hours
Prerequisite(s): EHST-1310 Introduction to Environmental Law; or departmental approval.

EHST-2820 Independent Advanced Study in Environmental Health and Safety Technology
1-3 Credits

Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics. Prerequisite(s) Departmental approval, and instructor approval and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Lecture: 1-3 hours

EHST-2941 Field Experience
1-4 Credits

Supervised paid or unpaid field experience, which relates to individual student’s occupational objectives. Students will be assigned to a manufacturing or industrial facility, governmental entity, environmental consulting firm, health care institution, site, or project designed to provide and promote the student’s experience in practical, actual hands-on, applicable skills training within the environmental, health, and safety field. May be repeated for up to 4 credits total. Field experience must be reviewed and approved by EHST Program Manager.

Prerequisite(s): EHST-1301 Introduction to Environmental Technology, EHST-1310 Introduction to Environmental Law, and departmental approval.

EHST-2991 Professional Practice
3 Credits

Capstone course for Environmental, Health and Safety Technology. Cultivates critical problem solving skills in an environmental, health and safety context utilizing simulated and/or actual scenarios. Draws upon the student’s research skills and technical knowledge to compile legally and scientifically-justifiable solutions for mock clients within the confines of budgetary and time constraints. Requires reflection on degree outcomes and preparedness for initial employment or promotion in the Environmental, Health and Safety Field.

Lecture: 3 hours
Prerequisite(s): Departmental approval: sophomore standing.
Film (ZFLM)

**ZFLM-1020 Find Your Voice: Voice Acting**

0 Contact Hours

The focus of this workshop is on voice over technique and execution. Your first day of class will focus on your breathing capacity and how to expand it. Each week, your class work recordings are saved and uploaded to a storage website, and are emailed to you for your review. While class is in session, all recording equipment and most copy will be provided. After three weeks, you’ll be selecting your own, free copy on a site with over 5,000 scripts, categorized by genre.

**Contact hours:** 16

**Not financial aid eligible.**

**ZFLM-1025 Movie Magic Scheduling**

3.6 CEU’s

Gain a practical understanding of the movie industry scheduling process using the industry-standard Movie Magic Scheduling software by Entertainment Partners. This essential tool enhances the flexibility, accuracy and efficiency of creating schedules for productions of all types. Educational pricing and discount coupon for software is included. Movie Magic Scheduling enables users to create and view production schedules with a high degree of flexibility. Your production schedule is the essential tool that will take your project from script to an actionable plan. This software solution allows you to efficiently prepare schedules that enable your production team to make the best decisions possible.

**Contact hours:** 36

**Not financial aid eligible.**

**ZFLM-1026 Movie Magic Budgeting**

3.6 CEU’s

This training will provide participants with a practical understanding of the movie industry budgeting process using the industry standard software Movie Magic Budgeting by Entertainment Partners. This essential tool enhances the flexibility, accuracy and efficiency of creating budgets for productions of all types. Educational pricing and discount coupon for software is included. Movie Magic Budgeting is an innovative budgeting and cost estimation tool that features an intuitive format, allowing users to create and edit comprehensive budgets of all sizes. Since a production budget is the blueprint that demonstrates how your project will be produced, the decision to fund the project will often be based on the information laid out in the budget.

**Contact hours:** 36

**Not financial aid eligible.**

**ZFLM-1027 Location Sound Mixing and Boom Operation**

3 CEU’s

Designed for students with a good technical knowledge of sound equipment who are looking to advance their skills in location sound recording and microphone techniques. This course introduces the responsibilities of crew positions, on-set etiquette and equipment terminology related to the sound department. Students will have opportunities to build and operate state-of-the-art recording devices and accessories and will learn best practices in boom operation and microphone placement.

**Contact hours:** 30

**Prerequisite(s):** Production Assistant Basics/Technical Audio Knowledge

**Not financial aid eligible.**

**ZFLM-1028 Grip and Electric**

4.8 CEU’s

Introduction to the grip and electric department, crew positions, on-set protocol, equipment, terminology and safety. Trainees will perform hands on exercises with inventory and maintenance of equipment, dolly operation, rigging and supporting cameras, vehicles rigging, placement of lighting instruments, properly setting lamps, power distribution, lighting a set to feature film standards and motion picture photography, and other physical/mechanical devices.

**Contact hours:** 48

**Prerequisite(s):** Production Assistant Basics

**Not financial aid eligible.**

**ZFLM-1029 Art Department**

4.8 CEU’s

This course provides practical training for on-set production assistants in the art department. Trainees will learn about the responsibilities for each art department positions on the design team, construction crew, set dressing, props, wardrobe, and hair and makeup. Trainees will also learn art department terminology, script breakdowns, purchases and returns, handling petty cash, safety procedures and hands-on set dressing in-studio and on location.

**Contact hours:** 48

**Prerequisite(s):** Production Assistant Basics

**Not financial aid eligible.**

**ZFLM-1030 Production Assistant Basics**

6 CEU’s

This course is a prerequisite for all Film Academy on-set training courses and is required for the Production Assistant Certificate. This introductory practical training approach to the role of a production assistant on a movie set explores responsibilities, all set positioning and hierarchy, walkie-talkie and set etiquette, walkie-talkie and set lingo, call sheet creation, sides creation, production department paperwork, job hunting and resume writing. Students who successfully complete this course receive OSHA 10/GES certification and a discount coupon for Movie Magic Scheduling and Budgeting. They are also eligible to apply for a crew position on the Tri-C Short Film Intensive (Art Department, Grip and Electric, Camera Department or and Location Sound Mixing and Boom Op).

**Contact hours:** 60

**Not financial aid eligible.**

**ZFLM-1031 Camera Department**

3 CEU’s

This course is designed to advance one’s knowledge about the entertainment industry camera department, including crew positions, responsibilities and procedures. Trainees will learn about on-set etiquette and equipment terminology, as well as how to build a complete digital cinema camera system and interchange components quickly and precisely. Practical exercises include lens handling, data wrangling, slating and troubleshooting common issues. Trainees will leave this course with the skills needed to perform the role of Camera PA or 2nd AC on a professional set.

**Contact hours:** 30

**Not financial aid eligible.**
ZFLM-1032 Camera Operation
4.4 CEU's
This course is designed for camera operators looking to advance their knowledge of digital cinema cameras and crew responsibilities in the camera department. Trainees will gain advanced technical knowledge of the digital cinema camera, including assembly, troubleshooting and operation. Training wraps up with a two-day practicum that entails shooting a scene with a director, actors and script supervisor. Trainees will rotate through each camera department position, gaining the skills needed to perform various roles in the camera department on a professional set.
Contact hours: 44
Not financial aid eligible.

ZFLM-1033 Directing Master Class
4.4 CEU's
This course is a weeklong hands-on intensive taught by acclaimed professional members of the Directors Guild of America (DGA). It is an advanced course for those seeking to learn essential directing techniques to get the best performance from actors. The week begins by breaking down a short scene, creating a floor plan and shot lists, and discussing actor selection. Trainees will be actively involved in the casting session, actor selection and rehearsals. At the end of the intensive, trainees will participate in recording the scene using the shot list created earlier in the week.
Contact hours: 44
Not financial aid eligible.

ZFLM-1034 Script Supervisor
4.4 CEU's
This course is a weeklong hands-on intensive taught by an IATSE member script supervisor. The week begins with detailed explanations of script supervisor responsibilities, pre-production break downs, production coverage of scenes and continuity. Trainees will also learn about script notes, naming the slate, timing the shots, editor reports and delivery of the editor’s continuity book. In the final two days of class, trainees will get hands-on practice recording a short scene with a director, actors and camera crew.
Contact hours: 44
Not financial aid eligible.

ZFLM-1036 Film Crew Intensive Training
12 CEU’s
The Film Crew Intensive prepares future film and media technicians and crew members for entry-level positions by providing a unique opportunity to learn directly from professionals working on Cleveland feature films and commercial sets. It was developed with the help of the Greater Cleveland Film Commission and IATSE Local 209. Tri-C Film Academy trainees will work side by side with — and be mentored by — IATSE film industry professionals in various departments.
Contact hours: 120
Not financial aid eligible.

Finance (ZFIN)

ZFIN-1042 Enrolled Agent Certification Program
15.6 CEU’s
Enrolled agents are licensed by the federal government and have demonstrated special competence in tax matters and professional ethics, and can practice before the IRS anywhere in the United States. The enrolled agent program is a blended learning program intended to prepare participants to pass the SEE exam. Sessions are structured based on the Gleim System for Success. The SEE is a three-part exam administered by Prometric on behalf of the IRS. You must successfully pass all three parts to receive IRS-EA certification. *Please Note that this course has both an in-person and webinar version. See right column for more details.
Contact hours: 156
Not financial aid eligible.

ZFIN-1047 Introduction to Budgeting and Forecasting
0.8 CEU’s
Effective budgeting is a vital part of financial management for any organization. The Introduction to Budgeting course explains the purpose of budgeting and illustrates the budgeting process from beginning to end. If you are new to budgeting or want to better understand the budget process and types of budgeting, this course is for you. Steps of the budgeting process, common types of budgets, and widely used methods of budgeting will be illustrated. Students will gain hands-on experience building budgets with in-class budgeting exercises. This course is for professionals new to budgeting or new to parts of the budgeting process.
Contact hours: 8
Not financial aid eligible.

ZFIN-1048 Advanced Budgeting and Forecasting
0.8 CEU’s
The Advanced Budgeting and Forecasting course illustrates several methods to improve budgeting and forecasting. These methods include sensitivity analysis, budget variance analysis, regression analysis, and many more. Effective budgeting and forecasting techniques will be explained and demonstrated. Students will gain hands-on experience through working on budgeting exercises in-class. This course is for professionals wanting to learn how to build better budgets and improve their budgeting and financial forecasting skills.
Contact hours: 8
Not financial aid eligible.

ZFIN-1051 Chartered Tax Professional Certification (Online)
18 CEU’s
The Chartered Tax Professional (CTP) designation is the undisputed professional credential for persons who advise clients on income tax situations. Students who complete this comprehensive program will be prepared to handle almost any individual or small business income tax situation. Participants must successfully complete a series of six 30-hour modules (with instructor support). All courses are offered online and can be completed any time, anywhere. Each module consists of 10 three-hour lessons and can be completed in five to 10 weeks (one or two lessons per week).
Contact hours: 180
Not financial aid eligible.
ZFIN-1052 Professional Risk Manager (PRM) Exam Prep (Online)  
7 CEU's  
The self-guided ePRM Coach Complete course prepares learners to pass the four exams required for Professional Risk Manager (PRM) certification.  
Contact hours: 70  
Not financial aid eligible.

ZFIN-1053 Financial Risk Manager (FRM) Exam Prep (Online)  
6.1 CEU's  
The eFRM Coach Complete course is a comprehensive online study guide for the Financial Risk Manager (FRM) exam. These online tutorials are based on the FRM exam structure and the latest learning outcome statements. They possess every formula, definition, concept and application for all subjects covered in the exam. While the interactive study modules foster benchmarking and self-assessment against other candidates, the mock exams are modeled on the same lines as the final exam.  
Contact hours: 61  
Not financial aid eligible.

ZFIN-1054 Bookkeeping Administration Certification (Online)  
28 CEU's  
This online course provides an introduction to the concepts and uses of accounting in a business environment. The primary areas of study include analysis of business transactions; recording procedures and the use of ledgers and journals; accounting for sales and purchases; managing cash, payroll, accruals and deferrals; and preparation and analysis of basic financial statements. Learn to use QuickBooks Online Plus by completing two monthly accounting cycles. Payroll preparation and creating a new company will also be covered. While no prior QuickBooks knowledge is required, students taking this course should have some familiarity with the accounting cycle and how it relates to a business. While the reading requirements are light, the majority of this extensive, hands-on course consists of drill exercises and related practice activities and quizzes based on the knowledge gained from completing each chapter.  
Contact hours: 280  
Not financial aid eligible.

ZFIN-1055 Payroll Level I: Fundamental Payroll Certification (FPC)  
3 CEU's  
This course teaches the fundamental payroll calculations and applications necessary for individuals who are new to the payroll industry, those who support the payroll industry and individuals preparing for the FPC or CPP certification examinations. Participants will gain the knowledge and skills required to maintain payroll compliance and prevent costly penalties.  
Contact hours: 30  
Not financial aid eligible.

ZFIN-1056 Payroll Level II: Certified Payroll Professional (CPP)  
3.6 CEU's  
This course provides students with an in-depth understanding of the advanced skills necessary for payroll managers and supervisors. This program is ideal for experienced payroll professionals seeking compliance training, professional development or CPP certification preparation. Please note: In order to sit for the CPP exam, you must have spent at least three of the last five years working in the payroll profession.  
Contact hours: 36  
Not financial aid eligible.

ZFIN-1057 Operational Risk Management (Online)  
6 CEU's  
Changes in markets, techniques, technologies, and products have altered the landscape of operations and fueled the development of operational risk management. The regulators of financial and public companies are demanding a far greater level of disclosure and awareness by directors about the risks they manage and the effectiveness of the controls they have in place to reduce these risks.  
Contact hours: 60  
Not financial aid eligible.

ZFIN-1058 Comprehensive Tax Course with Career Package (Online)  
6 CEU's  
Get the skills needed to prepare tax returns for most Form 1040 individual, non-business taxpayers and small business taxpayers (self-employed/Schedule C) and learn how to research tax issues. This online course is CTEC and OBTP-approved.  
Contact hours: 60  
Not financial aid eligible.

ZFIN-1059 Retail Banking (Online)  
10 CEU's  
This online course helps participants understand the different types of loan products offered by banks. Learn about the features of mortgage loans and auto loans, and discuss the role and function of bank tellers.  
Contact hours: 100  
Not financial aid eligible.

ZFIN-1060 Global Capital Markets (Online)  
10 CEU's  
Financial markets have evolved over the past few years, becoming robust and complex in nature. Success in this area requires specialized knowledge and skills around both the functioning of the markets and the financial instruments used. This online course offers participants a basic understanding of the various markets and instruments and provides detailed knowledge covering the qualitative and quantitative aspects of all markets.  
Contact hours: 100  
Not financial aid eligible.

ZFIN-1061 Banking Management Operations (Online)  
10 CEU's  
This online course gives participants an in-depth understanding of various knowledge areas required of banking professionals. Learn about various banking products and operational aspects, as well as technology and regulatory requirements, and gain essential management and operational technology skills. Key knowledge areas: Banking essentials, Banking products, Foreign exchange management, Trade finance, Operational aspects, Banking technology, and Regulatory environment.  
Contact hours: 100  
Not financial aid eligible.
FIN-1061 Personal Finance
3 Credits
Introductory course designed to prepare a student to make educated decisions regarding consumer choices and personal financial goals. These decisions impact consumer purchasing and credit, insurances, medical care, home ownership, income taxes, investment and savings, and retirement and estate planning.
Lecture: 3 hours
Prerequisite(s): None.

FIN-2100 Financial Management
3 Credits
Analytical study of basic principles of financial management, integrating financial analysis and planning, working capital management, capital budgeting, capital structure, dividend policy, financial markets, and financial instruments into business decisions and reporting.
Lecture: 3 hours
Prerequisite(s): ACCT-1341 Managerial Accounting, or departmental approval: equivalent courses or equivalent work experience.

FIN-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Finance complements and exceeds requirements and expected outcomes for an existing Finance 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Finance, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

FIN-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application

Fire Technology (FIRE)

FIRE-1100 Principles of Emergency Services
3 Credits
Provides an overview to fire protection including history, organization of services, local and state laws in addition to nomenclature, chemistry and physics of fire protection systems, strategy and tactics.
Lecture: 3 hours
Prerequisite(s): Departmental approval: Admission to or completion of accredited Fire Academy.
OAN Approved: OFS004. CTAN approved: CTF002 (1 of 3 courses, all must be taken) and CTF003 (1 of 5 courses, all must be taken).

FIRE-1200 Principles of Fire and Emergency Services Safety and Survival
2 Credits
Introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to or completion of accredited Fire Academy.
OAN Approved: OFS006. CTAN Approved: CTF002 (2 of 3 courses, all must be taken) and CTF003 (2 of 5 courses, all must be taken).

FIRE-1500 Fire Behavior and Combustion
2 Credits
Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to or completion of Fire Academy.
OAN Approved: OFS003. CTAN Approved: CTF002 (3 of 3 courses, all must be taken) and CTF003 (3 of 5 courses, all must be taken).

FIRE-2321 Fire Protection Systems
2 Credits
Provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Admission to or completion of Fire Academy. CTAN Approved: CTF003 (4 of 5 courses, all must be taken).
FIRE-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application

Fire-Advanced Training (ZEFR)

ZEFR-1000 Fire Safety Inspector
8 CEU's
This two-week course leads to State Certification for officers and firefighters who want to become qualified inspectors. Get a firm understanding of state regulations through the use of code books; be able to identify hazards and violations; and receive practical training in dealing with homeowners and occupants. Save lives by helping people recognize hazardous conditions and build good community relationships in the process.
Contact hours: 80
Not financial aid eligible.

ZEFR-1001 Fire Instructor Trainer
7 CEU's
Leave this intense 60-hour program with the skills necessary to become a Fire Instructor Trainer. In a highly interactive and hands-on environment, you'll cover all topics related to becoming an effective trainer, including how to create top-notch content and keep your participants actively engaged. Watch yourself on video and get 15 hours of student teaching after the course to make sure you're ready to roll. Homework assignments each evening help you learn more, faster.
Contact hours: 70
Not financial aid eligible.

ZEFR-1004 Firefighter's Physical Agility Prep Course
1 CEU's
This course will help train an individual for the Firefighter's Physical Agility Test.
Contact hours: 10
Not financial aid eligible.

ZEFR-1136 Fire Instructor Update
0.6 CEU's
This course is designed for Fire Instructor recertification. This course will cover basic Powerpoint for the Fire Instructor, and will cover the updated Instructor material for FFA & FF84 Transition course. This course meets the 6 hour continuing education recertification requirements for the State of Ohio.
Contact hours: 6
Not financial aid eligible.

ZEFR-1137 Firefighter 2
12 CEU's
Course meets and exceeds the certification requirements established in the Ohio Revised Code for FF 2 and the training and educational standards identified in NFPA 1001.
Contact hours: 120
Not financial aid eligible.

ZEFR-1150 Volunteer Firefighter Course
3.6 CEU's
The course is to best prepare the new volunteer with initial training to prepare a new firefighter to safely participate in a live fire training burn. This course will promote firefighter safety while developing realistic objectives that can be accomplished in 36 hours elected to require instruction in basic ventilation objectives while eliminating the requirement of portable fire extinguisher training.
Contact hours: 36
Not financial aid eligible.

ZEFR-1162 Fire Officer I - Blended
8 CEU's
The purpose of this course is to specify the minimum job performance requirements for service as a fire officer. It is not the intent of this course to restrict any jurisdiction from exceeding these minimum requirements. The course will cover the requirements for the Fire Officer Level I (NFPA 2003 Edition).
Contact hours: 80
Not financial aid eligible.

ZEFR-1164 Emergency Driving
0.8 CEU's
In this course, students will: 1) Review rules and responsibilities related to personal safety, response on roadway incidents; 2) Identify factors that contribute to incidence of firefighter injury and death; 3) Explain rationale for changing attitude of personal safety, response and roadway incidents; 4) Familiarization with NFPA 1002 and 1451 Standards for a Fire Vehicle Operations Training Program; 5) Review 360 degree walk around, in-cab procedures, rules and responsibilities on emergency driving course; and 6) Perform following driver training exercises: a) Alley Dock Exercise b) Serpentine Exercise c) Three-Point Turnaround d) Diminishing Clearance Exercise.
Contact hours: 8
Not financial aid eligible.

ZEFR-1165 Origin and Cause, Basic
8 CEU's
This course introduces the student to the basic concepts of origin and cause utilizing classroom lecture and hands-on techniques.
Contact hours: 80
Not financial aid eligible.

ZEFR-1166 Origin and Cause, Advanced
4 CEU's
This extensive hands-on course provides in-depth knowledge and skills necessary to thoroughly investigate fires from fire scenes to the courtroom as outlined in NFPA 921. Includes fire dynamics, motives, fire scene fatalities, scene documentation, evidence, case preparation and testimony. Students engage in a hands-on investigation that includes investigating, documenting, and collecting evidence from a fire scene, and case preparation.
Contact hours: 40
Not financial aid eligible.

ZEFR-1171 Fire Officer II - Blended
8 CEU's
Are you a mid-level officer or supervisor and need to meet NFPA 1021? This course, a combination of classroom and online, is designed to meet all those elements.
Contact hours: 80
Not financial aid eligible.
ZEFR-1179 Fire Safety Inspector Continuing Education
0.6 CEU's
This course provides Fire Safety Inspector continuing education in a classroom setting.
Contact hours: 6
Not financial aid eligible.

ZEFR-1182 Fire Officer III - Blended
8 CEU's
Fire Officer III is geared to the command-level officer responsible for planning, budgeting and upper-management tasks.
Contact hours: 80
Not financial aid eligible.

ZEFR-1186 NFPA Three-Day Live Burn Training
2.4 CEU's
This three-day advanced training course is specifically for certified fire instructors who want to facilitate a live burn training exercise per NFPA 1403 Live Burn Training and will encompass a classroom session for NFPA 1403 standards, and live fire scenarios at a mobile fire training unit and an acquired structure burn with students filling the role of lead instructor, ignition, safety, accountability and crew leaders.
Contact hours: 24
Not financial aid eligible.

ZEFR-1190 Structural Collapse Operations
3.2 CEU's
This course meets all NFPA 1670 guidelines and enables rescue teams to operate safely and effectively in structural collapse incidents involving the collapse or failure of lightframe, ordinary construction, un-reinforced and reinforced masonry construction. At the conclusion of this course, the student will understand the procedures for recognizing unique collapse or failure hazards, and for stabilizing and shoring up the structure. An increased emphasis on rescue will include learning search and rescue techniques intended to locate victims trapped inside and beneath collapse debris; discussion about procedures for accessing victims trapped inside and beneath collapse debris; procedures relevant to extrication operations involving packaging, treating and removing victims within and beneath collapse debris.
Contact hours: 32
Not financial aid eligible.

ZEFR-1194 Confined Space Rescue Level II NFPA 1006
2.4 CEU's
This 24 hour program includes classroom and practical training coordinating, performing and supervising complex confined space rescue operations. Topics include hazard identification, equipment usage, confined space pre-planning, incident action plan development and implementation, complex rescue considerations, corrective measures for controlling hazards and advanced rescue techniques.
Contact hours: 24
Not financial aid eligible.

ZEFR-1196 Truck Company Operations
0.6 CEU's
This class will focus on safe and effective use of aerial apparatus and truck company operations.
Contact hours: 6
Not financial aid eligible.

ZEFR-1197 Ohio Firefighter Certification Reciprocity
2.4 CEU's
Firefighter Proboard Skill Testing and State of Ohio Firefighter certification reciprocity examination.
Contact hours: 24
Not financial aid eligible.

ZEFR-1198 Confined Space, Refresher
0.8 CEU's
Personnel will review comprehensive pre-incident action plans.
Contact hours: 8
Not financial aid eligible.

ZEFR-1199 Fire Investigation for Company Officers
2.4 CEU's
3-day course for the Company Officer covering fire science, fire dynamics, witness interviews, legal aspects, scene security and initiating the investigation. The course includes a practical exercise investigating a fire scene, writing the origin and cause report and presentation of the findings.
Contact hours: 24
Not financial aid eligible.

ZEFR-1200 Fire Officer IV - Blended
8 CEU's
Fire Officer IV is based on NFPA 1021, ”Standard for Fire Officer Professional Qualifications.” This course is designed for command-level officers to chief officers.
Contact hours: 80
Not financial aid eligible.

ZEFR-1205 Auto/Machinery Extrication Operations NFPA 1006
4 CEU's
The Auto/Machinery Extrication Operations course acquaints students with techniques used in auto extrication. Students will become familiar with the different classifications and characteristics of vehicles and machines, and will also become familiar with the different tools used in extrications, stabilization of the vehicle/machine, disentanglement of patients and initiating patient care. This course covers the incident command system and how to terminate the incident when finished.
Contact hours: 40
Not financial aid eligible.

ZEFR-1206 Trench Rescue Operations NFPA 1006
3 CEU's
The scope of this course is to prepare local responders to operate as a member of a regional team with the NIMS at a CBRNE (chemical, biological, radiological, nuclear, or explosive) WMD event requiring statewide response, and requiring a non-intersecting trench rescue. The trench rescue operations course has been designed in accordance with NFPA 1006, Standard for Technical Rescue Professional Qualifications. This course pertains to trench rescues involving injured or entrapped persons. The class covers the federal and state regulations, use of specialized equipment for atmospheric monitoring, emergency shoring systems, victim extraction and employment of rescue constructed retrieval systems. Special emphasis will be given to rescuer safety and scene evolutions involving various trench rescue problems. Written and practical skills testing will be conducted at the completion of the course.
Contact hours: 30
Not financial aid eligible.
ZEFR-1208 Firefighter I & II
26 CEU's
The course meets the training and education standards for Firefighter I and II as identified in the National Fire Protection Association (NFPA) Standards, NFPA 1001.
Contact hours: 260
Not financial aid eligible.

ZEFR-1209 Surface Ice Rescue
0.8 CEU's
Surface Ice Rescue is an eight-hour training program that prepares first responders from all public safety disciplines to respond to and carry out surface ice rescues. Students receive an introduction to ice hazards and formation, equipment selection, medical considerations and the application of proven rescue methods and techniques. Successful completion is measured in class participation, a final written exam and surface and in-water skills testing.
Contact hours: 8
Not financial aid eligible.

ZEFR-1210 Rope Rescue Industrial
4 CEU's
This course prepare individuals to perform emergency rescues for themselves and their coworkers. Training and education is provided on safety requirements for person fall arrest systems, guidelines for minimum requirements for a managed fall protection program, and safety requirements for positioning and travel restraint systems to help prevent falls. Topics include basic and specialized equipment, ropes and rigging, safety requirements and considerations, scene management and organization, hazard identification, ropes and rigging, ascending/descending, belaying, lowering and raising systems, and litter management in an industrial environment.
Contact hours: 40
Not financial aid eligible.

ZEFR-1212 Confined Space Ops and Tech
3.2 CEU's
This course prepares local responders to operate as members of a regional team within the NIMS at a CBRNE WMD Event requiring statewide response and a permit for confined space rescue. The Confined Space Rescue Ops course was designed in accordance with the NFPA 1670 Standard on Operations and Training for Technical Rescue Incidents, 1999 edition. The Confined Space Rescue Tech course was designed in accordance with the NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents, 2009 edition as well as the NFPA 1006 Standard for Technical Rescuer Professional Qualifications, 2013 Edition.
Contact hours: 32
Not financial aid eligible.

ZEFR-ZEFR Confined Space Ops and Tech
3.2 CEU's
This course prepares local responders to operate as members of a regional team within the NIMS at a CBRNE WMD Event requiring statewide response and a permit for confined space rescue. The Confined Space Rescue Ops course was designed in accordance with the NFPA 1670 Standard on Operations and Training for Technical Rescue Incidents, 1999 edition. The Confined Space Rescue Tech course was designed in accordance with the NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents, 2009 edition as well as the NFPA 1006 Standard for Technical Rescuer Professional Qualifications, 2013 Edition.
Contact hours: 32
Not financial aid eligible.

French (FREN)

FREN-1010 Beginning French I
4 Credits
Introduction to French language skills needed in order to visit or study in a French-speaking location. Concentrates on the study of functional French, with emphasis on providing and obtaining personal information, expressing feelings and emotions, and exchanging opinions. Includes basic French grammatical structures, vocabulary, and various cultural aspects of the French-speaking world.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OFL001 and OFL005 (1 of 2 courses, both must be taken).

FREN-1020 Beginning French II
4 Credits
Continued study of French language skills needed in order to visit or study in a French-speaking location. Concentrates on the study of functional French, with emphasis on oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts. Additional grammar review and vocabulary building. Discussion of various cultural aspects of the French-speaking world.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): FREN-1010 Beginning French I, or one year of high school French, or departmental approval.
OAN Approved: OFL001 and OFL005 (2 of 2 courses, both must be taken).

FREN-1040 Study Abroad in Quebec - Beginner Level
4 Credits
Introductory course focused on the study of functional French, with an emphasis on speaking, reading, writing, and understanding oral and written French in various situations and texts. Designed to enhance students’ knowledge and appreciation of French Canadian language, culture, political issues, and business world. Five-week program begins with four orientation sessions followed by participation in a three-week French language immersion program in the province of Quebec.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): FREN-1010 Beginning French I or departmental approval.
FREN-1820 Independent Study/Research in French
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

FREN-182H Honors Independent Study/Research in French
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II and appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

FREN-2010 Intermediate French I
3 Credits
Continued study of functional French, with an emphasis on increased understanding and utilization of oral and written expression, as it relates to the situations encountered when traveling abroad. Review of basic French grammatical structures and vocabulary with additional study of more complex grammatical elements and lexical terms. Continued study of various cultural aspects of the French-speaking world.
Lecture: 3 hours
Prerequisite(s): FREN-1020 Beginning French II, or two years of high school French, or departmental approval.
OAN Approved: OFL003.

FREN-2020 Intermediate French II
3 Credits
Second part of intermediate-level course focused on teaching language skills needed to visit or live in a French-speaking location for an extended time. Concentrated study of functional spoken and written French with emphasis on understanding and expression. Review of basic grammatical structures, vocabulary with additional use of complex grammatical elements and more detailed lexical terms and culture.
Lecture: 3 hours
Prerequisite(s): FREN-2010 Intermediate French I, or three years of high school French, or departmental approval.

FREN-2040 Study Abroad in Quebec - Intermediate Level
4 Credits
Intermediate course concentrated on the continued study of functional French, with an emphasis on oral and written French in various situations and texts. Aimed at enhancing knowledge and appreciation of French Canadian culture, politics, and business. Includes orientation sessions in preparation for French language immersion program in the province of Quebec.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): FREN-1020 Beginning French I.

FREN-2410 French Conversation and Composition
3 Credits
Intermediate course based upon the first half of a French novel. Concentrates on the study of functional French, with an emphasis on speaking, writing, and understanding oral and written French in various situations and texts. Review of basic and complex French grammatical structures. Additional development of vocabulary skills in the French language and knowledge of cultural aspects related to the French-speaking world.
Lecture: 3 hours
Prerequisite(s): FREN-2020 Intermediate French II, or three years of high school French, or departmental approval.

FREN-2420 French Civilization and Literature
3 Credits
Intermediate course based upon the second half of a French novel. Continued concentration on the study of functional French with an emphasis on speaking, writing, and understanding oral and written French in various situations and texts. Review of basic and complex French grammatical structures. Additional development of vocabulary skills in the French language as well as knowledge of cultural aspects related to the French-speaking world.
Lecture: 3 hours
Prerequisite(s): FREN-2020 Intermediate French II, or three years of high school French, or departmental approval.

FREN-2820 Independent Advanced Study/Research in French
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

FREN-282H Advanced Honors Independent Study/Research in French
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

General Studies (GEN)

GEN-1000 Introduction to College
1 Credit
Orients students to the College’s programs, services, and policies. Topics may include student resources, college and student expectations, academic support services, financial aid, degree programs, and student rights and responsibilities.
Lecture: 1 hours
Prerequisite(s): None
GEN-1010 Personal Development
2 Credits
Experience-based course designed to explore individual resources, values, goals, time-management and decision making. Focus placed on structured activities which build self-esteem, motivation, self-confidence, empathy and communication skills in a group setting.

Lecture: 2 hours
Prerequisite(s): None.

GEN-1022 Strategies for Success
3 Credits
Information and methods helpful for student success. Planning, time management, communication skills, relationships, memory, reading comprehension and retention, note taking, and test taking techniques. Stress management and techniques for overcoming test anxiety will be practiced. Diversity, college resources, and learning styles will be explored.

Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English Placement Test; or departmental approval.

GEN-1032 Information Literacy and Library Research
2 Credits
Hands-on experience using the Internet, print and electronic library resources to locate information for course related and personal needs. Emphasis is on the use of search strategies, various research tools, and the application of critical thinking to library research.

Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

GEN-1040 Career Exploration
2 Credits
Exploration of personality, interests, skills, and values through a series of self-assessment inventories based on career theory. Emphasis on the nature and meaning of work in relation to life and career satisfaction. Occupational resources analyzed and discussed.

Lecture: 2 hours
Prerequisite(s): None.

GEN-1060 Creative Parenting Skills for Students
2 Credits
Course applies a developmental framework in examining theoretical approaches to the process of parenting. Explores expectations, influences and strategies of parenting with focus on attitudes and behaviors. Topics include facilitating the parent-child relationship from birth through adolescence, parenting techniques, adaptations of the traditional family structure, contemporary discipline techniques, and community resources. These topics will be addressed within the context of cultural diversity.

Lecture: 2 hours
Prerequisite(s): None.

GEN-1070 First Year Success Seminar
1 Credit
Introduction to Cuyahoga Community College community, resources, and skills necessary for student success. Topics include personal responsibility, motivation, student support services, career and academic planning, time management, study skills, and financial literacy.

Lecture: 1 hours
Prerequisite(s): None.

GEN-1071 Success Seminar
1 Credit
Prerequisite: ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Lecture: 1 hour

GEN-1100 Mental Wellness and the College Student
1 Credit
Orient the student to emotional and mental well-being as they transition to college. Introduce students to resources campus, local, and national resources to help promote and maintain wellness.

Lecture: 1 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or concurrent enrollment; or appropriate score on English Placement Test.

GEN-1810 Workforce Success Seminar
1 Credit
Introduction to Workforce Community, Economic & Development Division resources and as well as engage in Cuyahoga Community College resources as a whole. Topics include personal responsibility, motivation, student support services, time management, study skills, financial literacy, career pathways and pre-employment career readiness skills.

Lecture: 1 hours
Prerequisite(s): Student must be enrolled in a WCED program or departmental approval

GEN-1820 Independent Study/Research in General Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

GEN-182H Honors Independent Study: General Studies
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

GEN-282H Advanced Honors Independent Study: General Studies
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
Geography (GEOG)

GEOG-1000 Introduction to Geography
3 Credits
Introduction and description of the four traditions of geography: earth science, cultural-environmental, location, and regional geography.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OSS007

GEOG-1010 World Regional Geography
3 Credits
Study of present issues and future prospects of developed and developing countries. Emphasis on economic activities determined by physical environment, social and cultural characteristics, and political stability.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS and OSS008.

GEOG-1030 Environmental Geography
3 Credits
Study of issues created by a rapidly increasing world population causing depletion of world energy resources and agricultural crises. Other environmental problems including pollution, destruction of rain forests, overgrazing, and loss of habitat considered.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

GEOG-1050 Africans in the Americas
3 Credits
Study of world regions touched by the African Diaspora, especially Africa, Caribbean, Brazil, and United States. Focus on characteristics of each region, demographic changes, and variations that shaped culture during and after slavery and to the present.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

GEOG-1510 Regional Geography of the United States and Canada
3 Credits
Regional geography of the United States and Canada noting significant characteristics of each region. Physical setting, economic activities, cultural diversity, social conditions, and political identity of each region studied.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

GEOG-1740 Fundamentals of Geographic Information Science
3 Credits
This course is cross-listed as CNST-1740. Credit can only be earned once for either course. Introduction to geographic information science with a focus on learning Geographic Information Systems (GIS) software. Topics include map, interpretation, and analysis, coordinate systems, map projections, scales, topographic mapping, accuracy versus precision, spatial analysis techniques, types of thematic mapping, sources of data, basic database management, advantages and limitations of GIS, and an introduction to applications in engineering, engineering technology, and the sciences. Students are expected to have basic computer skills prior to taking this course.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-1410 Elementary Probability and Statistics I, or MATH-1470 Modern Mathematics for Business and Social Sciences I, or MATH-1530 College Algebra or higher.
OAN Approved: OSS051.

GEOG-179H Honors Contract in Geography
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course, the Honors Contract adds an honors experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with instructor for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credit hours) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

GEOG-1820 Independent Study/Research in Geography
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

GEOG-182H Honors Independent Study/Research in Geography
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
GEOG-282H Advanced Honors Independent Study/Research in Geography
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

German (GER)

GER-1010 Beginning German I
4 Credits
Introduction to German through multiple approaches with emphasis on speaking and understanding. Practice in conversational German and aural comprehension of topics of daily interest. Some practice in writing basic sentences and small simple paragraphs on relevant topics and reading short paragraphs. Basic geography and a variety of cultural material presented as well.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OFL007.

GER-1020 Beginning German II
4 Credits
Development of proficiency in speaking, understanding, reading, and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): GER-1010 Beginning German I, or one year of high school German, or departmental approval.

GER-1820 Independent Study/Research in German
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

GER-182H Honors Independent Study in German
1-3 Credits
Honors-Level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test and must have earned an A or B in at least 3 honors courses.

GER-2010 Intermediate German I
3 Credits
Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Grammar review. Practice in writing compositions. Introduction to German civilization and literature.
Lecture: 3 hours
Prerequisite(s): GER-1020 Beginning German II, or two years of high school German, or departmental approval.

GER-2020 Intermediate German II
3 Credits
Intensive exercises in written and oral expression. Additional grammar review and vocabulary building. Further exploration of German literature.
Lecture: 3 hours
Prerequisite(s): GER-2010 Intermediate German I, or three years of high school German, or departmental approval.

GER-2820 Advanced Independent Study/Research in German
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

GER-282H Honors Advanced Independent Study/Research in German
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Health (HLTH)

HLTH-1100 Personal Health Education
3 Credits
This course explores the attitudes and practices that are necessary for more healthful living by examining the dimensions of wellness, individual, societal and environmental health issues, and exploring health behavior strategies to maintain good health and enhance one's quality of life.
Lecture: 3 hours
Prerequisite(s): None.
HLTH-1230 Standard First Aid and Personal Safety
1 Credit
Basic level First Aid and CPR/AED course that teaches students critical skills needed to respond to and manage an emergency until emergency medical services arrives. Skills covered in this course include first aid, choking relief in adults, children, and infants; and what to do for sudden cardiac arrest in adults, children, and infants. Upon successful completion of this course, students receive an American Heart Association Heartsaver First Aid-CPR-AED course completion card.
Lecture: 1 hours
Prerequisite(s): None. CTAN Approved: CTBPO001 (1 of 7 courses, all must be taken).

HLTH-1310 Cardiopulmonary Resuscitation
1 Credit
[This course is crosslisted as EMT-1310. Credit can only be earned once for either course.] Designed to teach the skills of CPR for victims of all ages, ventilation with barrier devices, use of an automated external defibrillator (AED), and relief of foreign-body airway obstruction. Intended for participants who provide health care in a variety of settings. The course also provides first aid basics for the most common first aid emergencies. Upon successful completion of the course, including a written and skills test, students receive an American Heart Association Basic Life Support course completion card.
Lecture: 1 hours
Prerequisite(s): None.

HLTH-1400 Childhood Health, Safety, and Nutrition
3 Credits
Focuses on nutrition, health, and safety needs of infants and young children. Training provided in communicable disease recognition, prevention and management, first aid, infant/child CPR, and child abuse recognition and prevention, as required by the Ohio Day Care Licensing Rules. Nutritional requirements of infants and young children, meal planning and menu evaluation, principles of hygiene and safety in storage, preparation and serving of food are addressed. Positive health practices emphasized as integral elements in nurturing a child’s total development.
Lecture: 3 hours
Prerequisite(s): None.

HLTH-179H Honors Contract: Health
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honors experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

HLTH-182H Honors Independent Study/Research in Health
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

HLTH-2500 Women’s Health Issues
3 Credits
Exploration of all dimensions of women’s health, identification of health risks unique to women, evaluation of traditional and non-traditional approaches to health care problems, and development of personal strategies for selection of health enhancing behaviors.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HLTH-282H Honors Independent Study/Research in Health
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Health Information Management Technology (HIM)

HIM-1060 Health Unit Coordinator
3 Credits
Specific application of health unit coordinating duties and responsibilities relating to entry-level positions. Basic information with emphasis on clerical tasks: patient processing for admissions, transfers, discharges, charts, preoperative, postoperative, scheduling and processing orders. Accuracy and appropriate understanding with physician, nursing, and dietary treatment orders. Accuracy in transcribing medication orders, laboratory orders and other diagnostic orders. Emphasis on Allied Health professional principles.
Lecture: 3 hours
Prerequisite(s): MA-1020 Medical Terminology I.

HIM-1112 Physician Office Coding
4 Credits
Introduction to basic concepts of coding using ICD-10-CM (International Classification of Diseases, 10th Revision, Clinical Modification) for diseases and CPT (Current Procedural Terminology) to meet requirements for physician office coding and billing.
Lecture: 4 hours
Prerequisite(s): MA-1020 Medical Terminology I and ENG-1010 College Composition I.
HIM-1121 Medical Billing Practices  
2 Credits  
Introduction to basic terminology regarding medical insurance, third party payers, reimbursement methodologies, claims processing procedures for posting payments and claims follow up in physician office setting.  
Lecture: 2 hours  
Prerequisite(s): MA-1020 Medical Terminology I and ENG-1010 College Composition I.

HIM-1301 Introduction to Health Information Management  
3 Credits  
Introduction to the field of health information management technology (HIMT) including an overview of the profession; functions of HIMT department; purposes, uses and flow of patient information through the health care systems. Introduction to the history of Western Medicine, allied health professions, health care organizations and the operation of modern health care delivery.  
Lecture: 3 hours  
Prerequisite(s): BIO-2331 Anatomy and Physiology and MA-1010 Introduction to Medical Terminology and departmental approval: admission to the program. CTAN Approved: CTHIM001.

HIM-1311 Legal Aspects of Health Care  
3 Credits  
Introduction of legal and ethical issues applicable to health information including confidentiality, release of information; legislative process; the court system; legal vocabulary; retention guidelines; patient rights/ advocacy; advance directives and ethics.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): ENG-1010 College Composition I; and MA-1010 Introduction to Medical Terminology, or MA-1020 Medical Terminology I.  
OAN Approved: OHL021. CTAN Approved: CTHIM002.

HIM-1401 Systems in Healthcare Delivery  
2 Credits  
Overview of various health record systems and the role of the Health Information Technician in non-acute acure settings, such as private practices, extended care facilities and nursing homes.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval.

HIM-1411 Healthcare Statistical Applications & Research  
2 Credits  
Introduction to use, collection, presentation, and verification of health care data including fundamental concepts of descriptive statistics; date validity and reliability; data presentation techniques; vital statistics; and healthcare institutional research.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care, and completion of Mathematics 1000 level or higher.

HIM-1423 Health Data Documentation, Sources and Classification Systems  
3 Credits  
Documentation requirements for complete and accurate health records as required by licensing, certifying and accrediting agencies; forms design; functions of data analysis and abstracting; healthcare data sets and standards; clinical vocabularies and classification standards; primary and secondary healthcare data sources.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care.

HIM-1432 Computer Systems in Health Information Management  
3 Credits  
Introduction to using and understanding the Electronic Health Record (EHR), various computerized healthcare software systems. Includes a history of computers in health care and utilizes software in the completion of Health Information Management processes.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1090 Computer Applications or IT-109H Honors Computer Applications, and HIM-1311 Legal Aspects of Health Care, and HIM-1301 Introduction to Health Information Management.

HIM-1820 Independent Study/Research in Health Information Management  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HIM-2130 Coding with CPT (Current Procedural Terminology)  
2 Credits  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): BIO-2600 Pathophysiology, or departmental approval.

HIM-2140 Coding with ICD-10-CM  
2 Credits  
Principles, theories, concepts and applications required to code diseases and procedures using the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Classification System.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and departmental approval: Program Manager approval.
HIM-2200 Project Management for the Health Information Management Professional
2 Credits
Organizing and managing effective project teams, from planning and scheduling to cost management, including use of project management software. The latest business developments and challenges and issues such as project constraints, stakeholder issues, project charter, and how projects relate to an organization’s strategic plan. Effective communication both within and outside of a team.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HIMI-1431 Healthcare Informatics and Information Management, and HIM-1423 Health Data Documentation, Sources and Classification Systems; or departmental approval.

HIM-2260 Coding with ICD-10-PCS
2 Credits
Coding with ICD-10-PCS will prepare and train Health Information Management Technology students to understand the format used and how to build an ICD-10-PCS procedure code. Key terms related to ICD-10-PCS, the system’s use and the different sections contained within the PCS coding system: medical and surgical, obstetrics, placement, administration, measurement and monitoring; extracorporeal assistance, performance and therapies; osteopathic, chiropractic, and other procedure and treatment sections.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HIMI-2160 Coding with ICD-10-CM, and departmental approval.

HIM-2312 Quality Assessment and Improvement
3 Credits
Introduction to disease and health registries and to data assessment activities being performed in health care facilities.
Lecture: 3 hours
Prerequisite(s): HIMI-1301 Introduction to Health Information Management, and departmental approval.

HIM-2401 Intermediate Coding
2 Credits
Continuation in the study of coding and classifications systems in a variety of healthcare settings. Upon completion students should be able to apply coding principles to correctly assign codes using the International Classification of Diseases, Ninth Revision, Clinical Modification and Procedural Coding System (ICD-10-CM and PCS) and Current Procedural Terminology (CPT) and apply systems to optimize reimbursement.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HIMI-2130 coding with CPT (Current Procedural Terminology) and HIM-2160 Coding with ICD-10-CM, or departmental approval.

HIM-2410 Management Practices in Health Information
2 Credits
Management principles used in managing health information functions and personnel, with emphasis on duties and responsibilities of supervisor in coordinating goals of a health information management department, training of personnel, concepts of continuous quality improvement.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval.

HIM-2430 Medical Reimbursement Methodologies
2 Credits
Reimbursement issues and systems, including: compliance environment payers, reimbursement vocabulary and systems such as Diagnostic Related Groups (DRGs), Resource Based Relative Value Scale (RBRVS), Ambulatory Payment Classifications (APC), and the chargemaster.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): HIM-2160 Coding with ICD-10-CM, and departmental approval. OAN Approved: OHL022.

HIM-2441 Project Management Capstone
2 Credits
Intermediate capstone course utilizing Project Management Methodologies for completing a project.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HIMI-2200 Introduction to Project Management, or departmental approval.

HIM-2500 Introduction to Cancer Registry and Disease Management
2 Credits
Introduction to the organization of the Cancer Registry, including cancer data management and utilization, quality control activities and the cancer program and accreditation processes. The function of the cancer registry in the electronic environment including Health Information Privacy and Security.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program. Requires a minimum of an Associate Degree in a health care field that includes two semesters of Anatomy and Physiology, one semester of Pathophysiology, and one semester of Medical Terminology. If the degree does not include these courses, the courses will need to be taken prior to acceptance of the student.

HIM-2510 The Cancer Disease Process and Management
3 Credits
Introduction to the Pathophysiology of the cancer disease process. Ascertainment of presenting symptomatology, diagnostic evaluations, extent of disease, evaluations and treatment modalities to include surgery, chemotherapy, radiation therapy, hormonal therapy, immunotherapy, palliative therapies, and alternative therapies. Introduction to the role of clinical research trials in development of cancer treatments.
Lecture: 3 hours
Prerequisite(s): Departmental approval.

HIM-2520 Oncology Coding and Staging
3 Credits
Explanation of oncology coding methodologies and cancer staging systems. Students will use a variety of resources to accurately assign correct oncology codes for topography, histology, grade, tumor status, nodal status, metastatic status, stage group and summary state. Students will use a variety of cancer staging resources to determine the stage of the disease for reporting purposes. This course will provide an overview of cancer and the natural course of the disease progression.
Lecture: 3 hours
Prerequisite(s): BIO-2600 Pathophysiology; and concurrent enrollment in HIM-2510 The Cancer Disease Process and Management, and departmental approval: admission to Cancer Registrar Post Degree Certificate Program.
HIM-2530 Oncology Treatment and Coding
3 Credits
Covers treatment and management of cancerous diseases. Includes identification and coding of surgical treatments, radiation treatments, chemotherapy treatments, immunotherapy treatments, hormonal treatments, alternative, palliative and experimental treatments, and other treatment coding. Clinical Trials with coding and monitoring also discussed.
Lecture: 3 hours
Prerequisite(s): HIM-2560 Oncology Database and Manuals, and departmental approval.

HIM-2540 Abstracting Principles and Methodologies for Oncology
3 Credits
Covers the components and organization of a cancer patient health record. This course provides both general and specific instructions for abstracting pertinent information from: the patient record; and source documents using sample operative and pathologic reports. Instruction includes details on what should be recorded and how to record cancer information on the cancer registry abstract, study of the structure and content of source documents from the record, as well as abstracting principles and practices using patient health records. Normal methods and procedures used to diagnose cancer also discussed.
Lecture: 3 hours
Prerequisite(s): HIM-2530 Oncology Treatment and Coding; or departmental approval.

HIM-2550 Database Analytics, Quality and Tracking
3 Credits
Lecture: 3 hours
Prerequisite(s): HIM-2500 Introduction to Cancer Registry and Disease Management.

HIM-2560 Oncology Database and Manuals
3 Credits
Investigating and exploring the coding rules in the Multiple Primary Histology (MP/H) Manual and the Hematopoietic database. The course will also provide study in hematopoietic and lymphoid neoplasms.
Lecture: 3 hours
Prerequisite(s): HIM-2500 Introduction to Cancer Registry and Disease Management.

HIM-2851 Practicum I
3 Credits
Supervised practicum designed to allow student to apply technical knowledge and skills learned in the classroom to procedures performed in the health information management department. Assignments will be made to various types of health care facilities to gain exposure to health information practices.
Lecture: 1 hour
Other Required Hours: Practicum: 14 hours per week; Seminar: 1 hour per week
Prerequisite(s): HIM-2410 Management Practices in Health Information, and departmental approval.

HIM-2861 Practicum II
3 Credits
Capstone course in Health Information Management. The second of two supervised practicums designed to allow the student to apply technical knowledge and skills learned in the classroom to procedures performed in the health information management department. Assignments will be made to various types of health care facilities to gain exposure to health information practices.
Lecture: 1 hour
Other Required Hours: Practicum 14 hours a week; Seminar 1 hour a week
Prerequisite(s): HIM-2130 Coding with CPT (Current Procedural Terminology), and HIM-2160 Coding with ICD-10-CM , and HIM-2312 Quality Assessment and Improvement, and HIM-2851 Practicum I, or departmental approval.

HIM-2870 Clinical Professional Practice Experience for Cancer Registry
2 Credits
Direct clinical practice and observation at a Cancer Registry location that will include: Data collection and abstracting using ICD-0-3 coding: Staging cancer (CS, AJCC TNM, SEER Summary); treatments; case follow-up; Cancer committee activities; reporting; quality control and management studies. Case-finding; Cancer Conference; HIPAA, Central Registry Operations; and Electronic Health Record exposure.
Other Required Hours: Clinical Practice hours: minimum 160 clock hours at a clinical site that is an approved Cancer Registry.
Prerequisite(s): HIM-2560 Oncology Database and Manuals, and departmental approval: admission to program.

Health Information Technology (ZHIT)

ZHIT-1020 Introduction to Lean Principles for Patient-Centered Care
1.3 CEU's
Lean is a continuous improvement methodology that has been applied with great benefit by healthcare organizations large and small throughout the world as a means to realize the triple aim. It focuses on studying processes to eliminate wastes and constraints so that more can be accomplished in the same amount of time with the same resources. Efficient and effective process workflows are the necessary to meet the healthcare challenges, and Lean is the proven methodology process improvement.
Contact hours: 13
Not financial aid eligible.
Health Professional Center (ZHTH)

ZHTH-0100 Medical Scribing for Allied Health Professionals (Online) 8 CEU's

This self-paced online course is designed specifically for practicing allied health professionals in the field of medical scribing. The course provides a simulated practice of recording verbal communication encountered during patient-doctor interaction and the recording of clinical events as they unfold. It also includes a study of procedures related to the retrieval of diagnostic test results. Procedures used in scheduling diagnostic tests, follow-up appointments, etc., are discussed and practiced. An emphasis is placed on professional and ethical behavior in a clinical health care setting. Mentor feedback and assistance available to all students as needed. Assignments and assessments are lesson-based and should be completed before progressing to the next lesson. Students who complete this comprehensive course will receive a certificate of completion from ProTrain and the American Healthcare Documentation Professionals Group (AHDPG) and are eligible to sit for AHDPG’s national certification exam.
Contact hours: 80
Not financial aid eligible.

ZHTH-1003 Dental Radiography: Radiation Protection Update 0.2 CEU's

This two-hour session provides Dental Assistants with the continuing education necessary to maintain their Dental Assistant Radiographer certification.
Contact hours: 2
Not financial aid eligible.

ZHTH-1004 Dental Assistant Radiography: Initial Training 0.7 CEU's

This course meets the Ohio State Dental Board training requirements for those seeking to become certified dental radiographers. Upon completion of this course, participants will be given 60 days to submit a clinical assignment consisting of exposing radiographs under the supervision of a dentist. A certificate of course completion will be mailed following submission of the clinical assignment.
Contact hours: 7
Not financial aid eligible.

ZHTH-1075 Medical Terminology 4.8 CEU's

Terminology utilized by health care professionals. Emphasis on correct spelling, definition, and pronunciation. Usage of basic and complex medical terms related to the body systems as a whole.
Contact hours: 48
Not financial aid eligible.

ZHTH-1105 Comprehensive Patient Access Specialist Program 16.2 CEU's

Become a Certified Patient Access Specialist. Your professional certification as a Certified Healthcare Access Associate (CHAA), offered by The National Association of Healthcare Access Management (NAHAM) validates that your knowledge and skills align with industry standards. Register Today!
Contact hours: 162
Not financial aid eligible.

ZHTH-1262 Comprehensive Professional Medical Coding Program - Classroom 21.6 CEU’s

This program is designed to train students on the essentials of successfully working as a coder in the medical, health care or insurance industries. AAPC curriculum is utilized. Upon completion of the course, students will be eligible for the CPC (Certified Professional Coder) exam. AAPC requires that students have two years of coding experience (one year may be substituted with this program), in addition to successful completion of the CPC exam in order to become a CPC. Students taking this program with less than one year experience will be CPC apprentices until one year is submitted to AAPC. Practicodes are available following the successful passing of the CPC exam as a substitute for one year of professional working experience.
Contact hours: 216
Not financial aid eligible.

ZHTH-1279 Comprehensive Professional Medical Coding - Online 21.6 CEU’s

The medical coding track is designed to prepare students to successfully test for the American Academy of Professional Coders (AAPC) Certified Professional Coder (CPC) credential. Students will learn the basics including anatomy and physiology, medical terminology and the AAPC's Professional Medical Coding Curriculum.
Contact hours: 216
Not financial aid eligible.

ZHTH-1282 Community Health Worker (CHW) 23 CEU's

Community health worker (CHW) serves as a bridge between the community and the health care, government and social service systems.
Contact hours: 230
Not financial aid eligible.

ZHTH-1285 Hot Stone Therapy 0.75 CEU’s

In this course, the student will learn how to perform a Hot Stone Massage. In order to do this, he/she must first learn the indications and contraindications of Hot Stone Massage and the Therapeutic Benefits. In addition, the student will learn some history and the logistics of Hot Stone Therapy. Finally, the student will complete a hands-on Hot Stone Massage. There will also be a written exam. Students will explore the history, logistics, indications/contraindications and therapeutic benefits of hot stone massage, preparing them to complete a hands-on massage and written exam at the end of the course.
Contact hours: 7.5
Not financial aid eligible.

ZHTH-1287 Comprehensive Professional Medical Coding (Hybrid) 21.6 CEU's

This hybrid course uses a combination of online and face-to-face training to prepare students for the American Academy of Professional Coders (AAPC) Certified Professional Coder (CPC) credential exam. Students will learn medical coding, anatomy & physiology and medical terminology, using AAPC's Professional Medical Coding curriculum.
Contact hours: 216
Not financial aid eligible.
ZHTH-1289 Prenatal Massage Therapy
0.7 CEU's
Students will learn the therapeutic benefits and contraindications of a prenatal massage, as well as how to properly position the client and perform a prenatal massage.
Contact hours: 7
Not financial aid eligible.

ZHTH-7042 Post-Breast Surgery Scar Tissue Release
12 CEU's
This course provides massage therapists with a sound working knowledge of the chronic pain and limited mobility many patients experience following breast surgery. Learn about different types of breast cancer, breast cancer surgeries, medications, radiation and other medical treatments and how they affect anatomy, mobility and pain.
Contact hours: 12
Not financial aid eligible.

Health Technology (HTEC)

HTEC-1000 Introduction to Patient Care
1 Credit
Discussion, demonstration and practice of basic patient care skills. Introducing principles of patient care including professional communication with diverse populations, safe patient mobility skills, vital signs, standard precautions and hand hygiene.
Lecture: .5 hours. Laboratory: 1.5 hour
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment; and MA-1020 Medical Terminology I, or concurrent enrollment; and MATH-0955 Beginning Algebra or appropriate score on Math placement test to enroll in MATH-1240 Contemporary Mathematics or higher.

HTEC-1010 Health Careers Professionalism
2 Credits
Designed for College Credit Plus students. Engage with the Tri-C community to develop skills necessary for student success. Covers personal responsibility, motivation, student support services, career and academic planning, time management, and study skills. Provides an introduction to the health care professions and to be successful in the health care environment, including: health care roles and career development, legal and work-related ethical responsibilities, personal traits of successful health care professionals, cultural considerations in the health care industry, effective communication skills, self-management and professionalism.
Lecture: 2 hours
Prerequisite(s): None.

HTEC-1040 Health Career Exploration
1 Credit
Introduction to variety of health career options with emphasis on qualifications, job responsibilities and employment opportunities. Includes identifying components from each health career that relate to lifestyle risk factors. Discusses how to become educated consumers with regards to seeking accurate health information.
Lecture: 1 hours
Prerequisite(s): None.

HTEC-1110 Ethics for Health Care Professionals
1 Credit
Survey course emphasizing basic definitions, concepts and issues of clinical law and ethics for health care professionals. Ethical decision-making models will be explained utilizing professional-patient relationship and case studies.
Lecture: 1 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

HTEC-1120 Critical Thinking in Healthcare
1 Credit
Designed for health careers students. Overview of principles involved in critical and creative thinking with an emphasis on practical applications in the healthcare environment. A discussion of skilful analysis, assessment and communication in the problem-solving process.
Lecture: 1 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

HTEC-1610 Introduction to Pharmacology
2 Credits
Acquaint students with general principles and concepts of pharmacology. Provides understanding of indications, uses, doses and contraindications associated with individual drugs as well as mechanisms of drug administration and therapeutic management of patients with specific disease processes. Review of basic mathematics related to correct calculation of drug dosages and preparation of solutions.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test. CTAN Approved: CTMAT011 (1 of 3 courses).

HTEC-1820 Independent Study/Research in Health Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings.) May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

History (HIST)

HIST-1010 History of Civilization I
3 Credits
Introduction to study of world civilizations from the beginning of human civilization to 1500.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test to enroll in ENG-1010 College Composition I. OAN Approved: TMSBS, OHS041, and OHS009 (1 of 2 courses, both must be taken).
HIST-101H Honors History of Civilization I
3 Credits
Introduction to world civilizations from ancient times to beginning of modern era. Study of different world cultures and civilizations and how they have interacted over time to create successive patterns of regional and global integration. Historical development of the world with emphasis on critical examination of primary source documents.
Lecture: 3 hours
Prerequisite(s): Appropriate score on English Placement Test to enroll in ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS041, and OHS009 (1 of 2 courses, both must be taken).

HIST-1020 History of Civilization II
3 Credits
Introduction to study of world civilizations from 1500 to present.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMSBS, OHS042, and OHS009 (2 of 2 courses, both must be taken).

HIST-102H Honors History of Civilization II
3 Credits
Introduction to world civilizations from beginning of modern era to the present. Examination of different world cultures and civilizations and how they have interacted over time to create successive patterns of regional and global integration. Historical development of the world with emphasis on critical examination of primary source documents.
Lecture: 3 hours
Prerequisite(s): Appropriate score on English Placement Test to enroll in ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS042, and OHS009 (2 of 2 courses, both must be taken).

HIST-1510 United States History to 1877
3 Credits
An overview and critical examination of United States history from Age of Exploration to end of Reconstruction, with emphasis on significant political, social, cultural, economic and military events as well as specific historical personalities. Will also examine the influence and contributions of women, minorities and ethnic groups.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMSBS, OHS043, and OHS010 (1 of 2 courses, both must be taken).

HIST-151H Honors United States History to 1877
3 Credits
An in-depth study of United States history from 1877 to the present, with emphasis on significant political, social, cultural, economic and military events as well as specific historical personalities. Also examines the influence and contributions of women, minorities and ethnic groups. Analysis of historical problems and use of primary sources.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS043, and OHS010 (2 of 2 courses, both must be taken).

HIST-1520 United States History Since 1877
3 Credits
An overview and critical examination of United States history from 1877 to the present with emphasis on significant political, social, cultural, economic and military events as well as specific historical personalities. Will also examine the influence and contributions of women, minorities and ethnic groups.
Lecture: 3 hours
Prerequisite(s): Appropriate score on English Placement Test.
OAN Approved: TMSBS, OHS044, and OHS010 (2 of 2 courses, both must be taken).

HIST-152H Honors United States History since 1877
3 Credits
An in-depth study of United States history from 1877 to the present, with emphasis on significant political, social, cultural, economic and military events as well as specific historical personalities. Also examines the influence and contributions of women, minorities and ethnic groups. Analysis of historical problems and use of primary sources.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS044, and OHS010 (2 of 2 courses, both must be taken).

HIST-1630 History of Immigration in America
3 Credits
Study of immigration in America. Discussion of ethnic institutions, explanation of continuity and change between first, second and third generations of an immigrant group, and exploration of relationships between and among different groups, analysis of nativism and restrictionism, and explanation of immigrant contributions to America.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

HIST-1700 History of Africa
3 Credits
General survey of African history with special emphasis on pre-colonial (pre-1500) Africa plus political, economic and social challenges of nineteenth and twentieth centuries. Importance of Islam and emergence of South Africa from apartheid era.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.
HIST-179H Honors Contract in History
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes and objectives for an existing HIST-1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

HIST-1812 Special Topics: The Impact of Race, Class and Education: A Historical View Since 1945
3 Credits
This course is structured around the issues of social justice, race in modern America. Emphasis will be placed on the history of neo-slavery and convict leasing.
Lecture: 3 hours
Prerequisite(s): None.

HIST-1820 Independent Study/Research in History
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HIST-182H Honors Independent Study/Research in History
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

HIST-2031 Islam to the Modern Middle East
3 Credits
This course examines Middle Eastern history from the time of Muhammad to the present with an emphasis on the 19th and 20th centuries; includes background into the religious diversity of the region, the Ottoman and Safavid empires, the era of European colonialism, the rise of feminism, and recent developments in the region.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and any 1000 level history of political science course; or departmental approval; permission of instructor.

HIST-2040 Native American History
3 Credits
Historical study of indigenous populations in the Americas from pre-colonial times to the present; special focus on the social, political, economic and spiritual lives of Native American nations in North America.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

HIST-2070 African American Women-History
3 Credits
Historical study of African-American women from their cultural roots in Africa, experiences during the Middle Passage, adaptation and influence in the Americas, and special focus on North America from colonial times to present.
Lecture: 3 hours
Prerequisite(s): Any 1000-level history or political science course, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; or departmental approval. OAN Approved: TMSBS.

HIST-2080 Latin American History
3 Credits
Study of history of Latin America from indigenous civilizations to present time. Analysis of social, cultural, political, and economic development of the region and relations between Latin American nations and United States.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HIST-2090 Ohio History
3 Credits
Study of history of Ohio from Native American societies and origins of statehood to present time. Analysis of environmental, political, social, economic, and intellectual aspects of the state. Role of transportation, industrialization, and immigration as well as contributions of women and cultural groups in the state's development. Analysis of role of Ohio in American development.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HIST-2150 African American History to 1877
3 Credits
Analysis and study of African American experiences from African origins through Atlantic slave trade, adaption to the Americas, and influence on American culture from slavery to emancipation and Reconstruction.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval. OAN Approved: TMSBS.
HIST-2160 African American History 1877-present
3 Credits
Analysis and study of African American experience from the end of Reconstruction, development of institutionalized racial discrimination, growth of racial advancement organizations, migration to cities, development of racial consciousness, and struggle for civil rights and political power until present time.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or departmental approval. OAN Approved: TMSBS.

HIST-2520 Hitler and the Holocaust
3 Credits
Study of Adolf Hitler, Nazi Germany and the Holocaust. Topics include National Socialist ideology; history of anti-Semitism; political history of Germany before, during, and after World War One; life of Hitler; Nazi seizure of power; Second World War; and the Holocaust.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and any 1000-level history or political science course.

HIST-2660 Women in American History
3 Credits
Study of changing role of women in America from colonial times to present. Introduction to current research techniques used to reconstruct family, political and work roles, special emphasis on participation in social reforms leading to women's rights, suffrage and feminist movements, impact of race, gender and region on gender perspectives and conflicts, evaluation of contemporary trends.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; and any 1000-level history or political science course.
OAN Approved: TMSBS.

HIST-2700 History of Modern Africa
3 Credits
This course introduces students to major themes in Africa's diverse and complex modern history. Students will examine the major themes of Africa and the industrial revolution, colonialism, pan-Africanism, the effects of World Wars on Africa, independence movements, African political ideologies, African economics, African cultures, and contemporary African challenges and triumphs.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I; and any 1000 level history course.

HIST-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in History complements and exceeds requirements and expected outcomes for an existing History 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in History, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

HIST-280H Honors Special Topics: History
1-3 Credits
Honors study of selected topics or current issues in History. Provides student an opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval: Members of the Honors Program; successfully completed a minimum of two Honors course (6 or more credit hours) with a grade of A or B.

HIST-2820 Independent Advanced Study/Research in History
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or, or appropriate score on English Placement Test.

HIST-282H Advanced Honors Independent Study in History
1-3 Credits
Advanced Honors-level directed individual study in History. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or, or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
Hospitality Management (HOSP)

HOSP-1010 Introduction to the Hospitality Industry 2 Credits
Comprehensive tour through fascinating and challenging related fields and career opportunities in hospitality industry; travel and tourism, lodging, food service, meetings, conventions and expositions, leisure and recreation, and beverage operations. Mapping of specific positions including requirements of job duties, skills, knowledge, personality attributes, physical abilities, and working conditions. Field trips may be required.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test, or departmental approval: industry experience. CTAN Approved: CTCF002.

HOSP-1020 Sanitation and Safety 2 Credits
Examines sanitation and safety practices in a variety of food service operations. Based on the FDA Food Code. Management oriented focus on prevention of food borne illnesses using Hazard Analysis and Critical Control Point principles of safe food handling, sanitary design, care of facilities and equipment, pest control, self-inspection, and interpretation of food service laws. Students plan and practice employee training. Students must pass a national exam, which will provide State Health Department Certification. Field trips may be required.
Lecture: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; or departmental approval: industry experience. CTAN Approved: CTCF001.

HOSP-1031 Fundamentals of Culinary Arts 3 Credits
Introduction to food preparation techniques, culinary theory, and equipment used in commercial food service. Basic concepts of kitchen organization and operation, heat transfer, basic terminology, use of standardized recipes, weights and measures, product evaluation, recipe conversion, food composition and introduction to commercial equipment and work methods. American Culinary Federation competency skills included. Field trips may be required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or MATH-0990 Math Literacy for College Students, or appropriate Math placement score; and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test; and HOSP-1020 Sanitation and Safety or concurrent enrollment; or departmental approval: industry experience.

HOSP-1040 Customer Service 2 Credits
Theories and principles of guest service in hospitality industry. Discussions of basic skills and competencies needed in entry-level hospitality service positions as recommended by the National Restaurant Association and Educational Institute of American Hotel and Lodging Association. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 2 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score; and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; and HOSP-1020 Sanitation and Safety or concurrent enrollment; or departmental approval: industry experience.

HOSP-1180 Event Planning Essentials 2 Credits
Introduction to the tasks required to plan a successful event. Emphasis on key characteristics of successful event planners, core principles of event planning, vocabulary, and basic management skills. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 2 hours
Prerequisite(s): None.

HOSP-1360 Fundamentals of Restaurant/Food Service Management 3 Credits
Introduction and overview of many aspects of restaurant/foodservice operations and the knowledge and skills needed by various operational and management positions. Emphasis will be on front of the house operations including various types of restaurants concepts, customer service, marketing, menu development, human resources, current trends, historical overview, nutrition and ethics, technology, facilities and design, as well as variety of day-to-day managerial and operational concerns. Focus will be on restaurant operations, but banquet, catering and managed services will also be covered.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test; and MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students; or appropriate score on Math placement test; or departmental approval: industry related experience.

HOSP-1380 Dimensions of Tourism 3 Credits
Cross-disciplinary approach to examine many facets of tourism. Social science perspective provides students with practical knowledge that can effectively be applied to hospitality industry. Terminology, concepts, and various specialized fields that comprise the industry reviewed. Advanced information that serves as a bridge to further analysis or study provided. Site visits may be taken to Cleveland area attractions.
Lecture: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry or concurrent enrollment, or departmental approval: industry experience.

HOSP-1451 Contemporary Cuisine 4 Credits
Preparation of contemporary cuisine with a wide variety of plate production techniques including appetizers, breads, soups, salads, side dishes, entrees, and desserts. Apply food pairing, plating, and garnishing techniques to contemporary cuisine. Skill training based on American Culinary Federation ApprenticeShip competencies. Field trips may be required.
Lecture: 2 hours. Laboratory: 6 hours
Prerequisite(s): MATH-1020 Sanitation and Safety; and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1552 Introduction to Baking & Pastries, and MATH-0955 Beginning Algebra or MATH-0990 Math Literacy for College Students, or appropriate Math placement score.
HOSP-1481 Housekeeping and Facilities Management
3 Credits
Fundamentals of professional housekeeping services in lodging industry, and basic knowledge of maintenance and engineering departments. Examines basic cleaning methods and equipment currently used; work production and quality control techniques specific to housekeeping management. Includes survey of building systems, facility layout, and equipment.
Lecture: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and
HOSP-1020 Sanitation and Safety or concurrent enrollment; and concurrent enrollment in HOSP-1540 Lodging Operations Lab.

HOSP-1540 Lodging Operations Lab
1 Credit
On-site observation and computer based training at local hotels provide practical application of lodging establishment functions in the areas of housekeeping, laundry, and maintenance. Field trips required.
Laboratory: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry; and concurrent enrollment in HOSP-1481 Housekeeping and Facilities Management.

HOSP-1552 Introduction to Baking & Pastries
3 Credits
Daily production of baked goods including yeast breads, pies, cakes, souffles, mousses, danish and croissants. Theoretical and practical foundation in baking production. Develop skills and knowledge that meet American Culinary Federation standards for quality handcrafted products. Emphasis on discipline, formulas, function of ingredients, proper production techniques and recognizing quality standards. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): Concurrent enrollment in HOSP-1031 Fundamentals of Culinary Arts; and HOSP-1020 Sanitation and Safety or concurrent enrollment; and MATH-0955Beginning Algebra or MATH-0990 Math Literacy for College Students, or appropriate score on Math Placement Test; and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

HOSP-1580 Front Office Operations
2 Credits
Elements of effective front office management, focusing on planning and evaluation of front office operations and human resources management. Front office procedures and management placed within context of overall operation of a hotel. Systematic approach to front office procedures presented by detailing flow of business through a hotel, from the reservations process to check-out and settlement. On-site observation and computer-based training of front office procedures at local hotels provide practical application of front office functions. Field trips required.
Lecture: 2 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1040 Customer Services.

HOSP-1650 Dining Room Operations
2 Credits
Hands-on work experience in a program on-campus restaurant. Students study, demonstrate and evaluate various types of dining room service and operational responsibilities. Focus areas include: serving, setup, labor, point of sale technology and management functions. Field trips may be required. Industry experience at a community event or function may be required.
Laboratory: 6 hours
Prerequisite(s): HOSP-1031 Fundamentals of Culinary Arts, HOSP-1040 Customer Services, and HOSP-1451 Contemporary Cuisine or concurrent enrollment, or departmental approval: industry related experience.

HOSP-1680 Beverage Management
2 Credits
Focuses on the beverage management side of foodservice operations with specific attention to: bar and beverage operations, production, purchasing, and marketing of wine, beer, and spirits including formulation of a wine list and pricing models, and the fundamentals of responsible alcohol service.
Lecture: 2 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.

HOSP-1710 Doing Business as a a Personal Chef
3 Credits
Introduction to the career of Personal Chef. Topics include: starting your own personal chef business; professional associations; preparing a personal chef business plan; forms of business organization; vision and mission statements; marketing and sales; legal issues; accounting criteria; client assessment; preparation and performing the service; safety and sanitation issues; packaging foods; and using a computer program to aid in your personal chef business. Approved by the American Personal Chef Association.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I, and HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and eligibility for MATH-0955 Beginning Algebra; or departmental approval: personal or professional cooking skills and experience.

HOSP-1730 International Cuisine
3 Credits
Examines cuisines in countries and regions around the world and focuses on the geographic, cultural, and historic influences that have shaped various world cuisines. Exposure to traditional cooking techniques and varied indigenous ingredients that meld together to produce the basis of world cuisines.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1451 Contemporary Cuisine or departmental approval: industry related experience.

HOSP-1820 Independent Study in Hospitality Management
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
HOSP-182H Honors Independent Study/Research in Hospitality Management 1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

HOSP-1940 Culinary Arts/Professional Baking Field Experience 1-3 Credits
Supervised on-site work experience in culinary arts/professional baking. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.
Other Required Hours: Field Experience: 14 hours per week for 15 weeks (total 210 hours) per credit.
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1552 Introduction to Baking & Pastries, and departmental approval: work site approval.

HOSP-1950 Restaurant/Food Service Management Field Experience 1-3 Credits
Hospitality Management Department supervised on-site work experience in Restaurant/Food Service Management. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.
Other Required Hours: Field Experience: 14 hours per week for 15 weeks (total 210 hours) per credit.
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1040 Customer Service, and departmental approval: work site approval.

HOSP-1960 Lodging/Tourism Field Experience 1-3 Credits
Hospitality Management Department supervised on-site work experience in Lodging/Tourism Management. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.
Other Required Hours: Field Experience: 12 hours per week for 15 weeks (180 total hours) per credit.
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, HOSP-1020 Sanitation and Safety, HOSP-1040 Customer Service, and departmental approval: work site approval.

HOSP-2180 Event Planning Workshop 2 Credits
Students will apply knowledge and skills gained in previous courses to plan an event. Event plans will include themes, identification of target market, sponsorships, event promotion, vendor selection, site selection, pricing, budgets, and evaluation. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HOSP-1180 Event Planning Essentials.

HOSP-2330 Menus and Facilities Planning & Design 3 Credits
Study of the central role of the menu in food and beverage operations. Comprehension and application of principles of nutritional guidelines in the menu planning process with an emphasis on locally grown and sustainable agriculture. Practice in menu development, pricing, layout and evaluation to facilities design and layout to provide for profitability. Computer generated menus and facilities layout. Planning and evaluation of facilities and selection of appropriate equipment. Field trips may be required.
Lecture: 3 hours
Prerequisite(s): HOSP-1451 Contemporary Cuisine, HOSP-2500 Hospitality Cost Control or concurrent enrollment; and HOSP-2700 Hospitality Purchasing or concurrent enrollment.

HOSP-2350 Restaurant Operations 3 Credits
Practical application of learned food preparation and presentation skills. Hands-on skill development within a simulated in-house restaurant kitchen with exposure to each kitchen position. Students prepare foods to order and for buffet presentation. Field trips may be required. Industry experience at a community event or function may be required.
Laboratory: 9 hours
Prerequisite(s): HOSP-1451 Contemporary Cuisine.

HOSP-2360 Restaurant Marketing 2 Credits
Course will focus on the role effective marketing and sales efforts play in the operation of a successful restaurant or foodservice outlet. Demographic and relevant market research will be conducted which will lead to the formulation of a marketing plan and budget. Additionally, ethics and marketing, the product life cycle, pricing strategies, feasibility studies, and the role of return on investment (ROI) will also be covered.
Lecture: 2 hours
Prerequisite(s): HOSP-1360 Fundamentals of Restaurant/Foodservice Management.

HOSP-2371 Restaurant/Foodservice Entrepreneurship 2 Credits
Capstone course in restaurant/foodservice management. Through new material and utilizing the components and skills developed in previous courses, students will develop an understanding of the necessary requirements to open and operate a successful restaurant/foodservice operation. Students will present an original concept, create a professional menu, and prepare appropriate financial documents. Costing, controls, legal concerns and purchasing will also be covered. Intended not just for entrepreneurs, the course takes the philosophy that the best managers know how to think like owners.
Lecture: 2 hours
Prerequisite(s): HOSP-1360 Fundamentals of Restaurant/Foodservice Management; and HOSP-1680 Beverage Management; and HOSP-2360 Restaurant Marketing or concurrent enrollment.

HOSP-2380 Hospitality Marketing and Sales 3 Credits
Provides hospitality management students with solid background in principles of hospitality sales, advertising, and marketing. Textbooks main focus on strategies and sales techniques for selling to targeted market with emphasis on planned profits. Field trips may be required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.
HOSP-2400 Hospitality Management and Supervision
3 Credits
Analysis of hospitality operations through use of terminology, theories, and principle. Special emphasis on evolution of management thought, and commitment to quality and productivity in various environments that affect practice of management and supervision. Through experiences and practical application, concepts will focus on standards and procedures for selection, training and development of human resources in hospitality industry. Field trips may be required.
Lecture: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, or departmental approval: admission to program, or related work experience.

HOSP-2480 Hospitality Law
3 Credits
Provides awareness of rights and responsibilities that the law grants to or imposes upon hospitality operations, and illustrates possible consequences of failure to satisfy legal obligations. Discussion includes contracts, property-guest relationship, frauds, employment laws, anti-trust regulations, food and beverage sales, wage and hour standards, social security and income tax withholding requirements, tax/tip reporting, and immigration laws. Field trips may be required.
Lecture: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.

HOSP-2500 Hospitality Cost Control
3 Credits
Addresses lodging, tourism, and food and beverage industries procedures to help control food, beverage, labor costs and sales income in food and beverage operations. Analysis of factors that serve as base for decision-making and improvement of operations that result in increased profits. Use of developing technology related to spreadsheets and other cost control aids. Field trips may be required.
Lecture: 3 hours
Prerequisite(s): HOSP-2700 Hospitality Purchasing, or concurrent enrollment; or departmental approval: work experience or prior business courses in related subjects.

HOSP-2550 Baking Production and Sales II
3 Credits
Building on theoretical and practical foundations of Introduction to Baking & Pastries, students will develop advanced skills and knowledge in production and selection of quality handcrafted and purchased products. Scientific principles and experimental methods explored and additional emphasis placed on advanced decorating and finishing techniques, chocolate work, candies, sugar works, presentation methods, menu development and costing. Students required to do production for community events and contests. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1552 Introduction to Baking and Pastries, or departmental approval: industry-related experience.

HOSP-2560 Garde Manger
3 Credits
Demonstrate basic skills in charcuterie, carving of edible and non-edible showpieces, garnishes, and aspics. Includes buffet and plate presentation. Experience at a community event or field trips may be required.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): HOSP-1451 Contemporary Cuisine

HOSP-2580 Convention Management and Meeting Planning
2 Credits
Defines scope and segmentation of convention and group business market, describes marketing and sales strategies to attract markets with specific needs, and explains techniques to meet those needs as part of meeting and convention planning and service. Field trips may be required. Industry experience at a community event or function may be required.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, or departmental approval: related work experience.

HOSP-2651 Banquet Management and Production
4 Credits
Capstone course in Culinary Art. Practice of management and supervisory skills in an in-house restaurant. Students work in management teams to create, plan, design, market, sell, train, and execute a dining event for a minimum of 50 guests. Students rotate through production and service stations, as well as management positions, with responsibility for production, cost control/accounting procedures and customer relations within the restaurant. Industry experience participating at a community event or function may be required.
Laboratory: 9 hours
Other Required Hours: Seminar: 1 hour per week.
Prerequisite(s): HOSP-1940 Culinary/Professional Baking Field Experience; HOSP-1650 Dining Room Operations; HOSP-2350 Restaurant Operations; HOSP-2500 Hospitality Cost Control; and HOSP-2400 Hospitality Management and Supervision or concurrent enrollment.

HOSP-2700 Hospitality Purchasing
2 Credits
Principles for purchasing supplies, equipment, food and beverages, and contract services for hospitality industry. Government regulations, industry standards, product availability, economic concerns, supplier relationships, and marketplace. Practice applications of purchase orders, bidding, specifications, computer assisted ordering and inventory controls. Field trips may be required.
Lecture: 2 hours
Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts.

HOSP-2750 Culinary Competition
2 Credits
Students work to refine and demonstrate culinary and organizational skills, and explore creative cooking talents while competing in an American Culinary Federation (ACF) sanctioned event. Mandatory ACF membership required for Culinary Competitions. Participation in College Community Service representing Hospitality Department and the College as Ambassadors.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1451 Contemporary Cuisine, or concurrent enrollment.
HOSP-2820 Independent Advanced Study/Research in Hospitality Management
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HOSP-282H Honors Independent Advanced Study/Research in Hospitality Management
1-3 Credits
Honors Directed Individual advanced study. Study/research title and specific content arranged between instructor and student. (See Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HOSP-282T Independent Advanced Laboratory Study/Research in Hospitality Management
1-3 Credits
Independent three-hour lab per credit. Directed individual advanced study in Hospitality Management. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Laboratory: 3-9 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HOSP-2862 Lodging and Tourism Management Experience
1 Credit
Capstone course in Lodging-Tourism Management. On-site observation and work experience in variety of job areas in Lodging or Tourism industry, with emphasis on practice of technical supervisory skills. Student portfolios reviewed by industry professionals with emphasis on preparedness as career professional.
Other Required Hours: Field Experience: 14 hours per week for 15 weeks.
Prerequisite(s): HOSP-1960 Lodging/Tourism Field Experience, and HOSP-2400 Hospitality Management and Supervision or concurrent enrollment, and departmental approval: approved work site and completion of 3 Career Center seminars as designated by the Hospitality department.

HOSP-2871 Food & Beverage Management Experience
2 Credits
On-site observation and work experience in a variety of job areas in Food and Beverage areas of hospitality industry with emphasis on practice of supervisory skills. Special emphasis on evaluation of student accomplishments and preparedness to enter industry as a career professional. Students will set goals for the field experience as well as attend required seminars, present their portfolio and create a professional personal resume.
Lecture: 1 hour
Other Required Hours: Field Experience: 14 hours per week for 15 weeks.
Seminar: 1 hour a week. Note: Listed Lecture hour reflects contact time for seminar.
Prerequisite(s): HOSP-1950 Restaurant/Food Service Management Field Experience, HOSP-2400 Hospitality Management and Supervision or concurrent enrollment, and departmental approval: approved work site.

HOSP-2992 Culinary Evaluation and American Regional Cuisine
2 Credits
Capstone course in Culinary Art. Practice preparation of classical and contemporary cuisine, including American Regional cuisine. Collaborate with visiting professional chefs to prepare various appetizers, soups, salads, entrees and desserts. Final evaluation by American Culinary Federation (ACF) professional chefs of practical exam, including menu and recipe development, costing, purchasing, organization of station, and preparation, cooking, and presentation of student menu. Professional chef evaluations are based on American Culinary Federation and current industry standards. Industry experience at a community event or function may be required.
Laboratory: 6 hours
Prerequisite(s): HOSP-2350 Restaurant Operations, and HOSP-2560 Garde Manger, and HOSP-1940 Culinary Arts/Professional Baking Field Experience

Human Development (ZHDI)

ZHDI-1215 Tri-C/Ursuline Art Therapy Workshops
0.4 CEU's
Contact hours: 4
Not financial aid eligible.

ZHDI-1217 Art Therapy/Soul of a Therapist
0.4 CEU's
Contact hours: 4
Not financial aid eligible.

ZHDI-1218 Human Trafficking: Under the Radar in our Community
0.7 CEU's
Contact hours: 7
Not financial aid eligible.
Human Services (HS)

HS-1101 Foundation of Substance Abuse, Addiction, and Group Work
4 Credits
Introduction to psychological and medical complications of alcohol, tobacco, and other drugs (ATOD), with emphasis on short term and long term effects. Provide overview of history of ATOD, etiology of dependency, physiological, neuropsychological, psychological and social effects of chemical abuse on the body and relationships. Also includes investigation of group work theories, different types of groups, group dynamics, stages of group process, group facilitation, participant role/influences, and group counseling techniques.
Lecture: 4 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

HS-1110 Crisis Intervention and Child Abuse Issues
3 Credits
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HS-1120 Suicide Prevention & Intervention
2 Credits
Covers suicide as a major social problem in America. Explore the social, psychological, and spiritual aspects of suicide and the differences between suicide death and other deaths. Includes the high risk factors associated with suicide, including gender, age, culture, mental illness, physical illness, addictions, and other factors. Exploration of the assessment and intervention techniques and prevention measures to assist and manage suicide crisis. Also covers resources and services to assist the person at risk of suicide as well as the family members/survivors. Field trips may be required.
Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I or departmental approval. Students may request a prerequisite override. This request will be done on a case by case basis.

HS-1200 Treatment Modalities and Diversity Issues in Chemical Dependency
4 Credits
Introduction to current concepts, theoretical models and research used by practitioners to understand total ecology of the chemically dependent individual. Examination and exploration of psychological, social and cultural lifestyle aspects and chemical dependency as applied to multicultural and special populations. Examination of various methods of intervention, assessment, treatment, group therapy, counseling techniques, case management, referral, and community resources for practitioners to help people maintain sobriety. Review of the 12 Core Functions/Global Criteria. Identification of national accreditation criteria, documentation, certification requirements, and examination preparation.
Lecture: 4 hours
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction, and Group Work.

HS-1210 Prevention and Chemical Dependency
2 Credits
Examine the three levels of prevention interventions. Discuss models and theories used in prevention strategies. Identify methods, strategies, legal aspects, social and community resources available to prevent chemical dependency and relapse. Discuss prevention certification skills and requirements. Emphasis on process outcomes, including quality assurance, evaluation and tracking.
Lecture: 2 hours
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction, and Group Work.

HS-1220 Diagnostic Tools and Legal Considerations
4 Credits
Introduction to signs and symptoms of behaviors associated with mental illness. Review of diagnostic criteria of mental illness as formulated in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, (DSM-5). Review evidenced based treatment (including psychotherapy and pharmacologic therapy) for various mental health disorders. Review legal issues and policies affecting consumers of mental health and substance use disorder services. Explore the Ohio Revised Code statutes related to compulsory commitment, due process, patient rights, privacy, and confidentiality. Discuss recent court decisions pertaining to mental health and substance use disorder services.
Lecture: 4 hours
Prerequisite(s): None.

HS-1300 Introduction to Human Services
3 Credits
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

HS-1820 Independent Study/Research in Human Services
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
HS-1850 Introduction to Human Services Principles and Practices 5 Credits
Supervised practicum with emphasis on orientation, data collection, behavioral documentation, interpretation of behavior, and decision making relating to individuals and social systems. Principles and practices of Solution Focused/Brief Therapy Theory and Motivational Interviewing. Development of behavioral observation, assessment, intervention and assertiveness skills. Emphasis on developing cooperative relationships with clients, practicum supervisor, instructor and peers. Introduction to community services and managed care system. Demonstrate application of appropriate, ethical and culturally sensitive interventions at practicum site.
Lecture: 3 hours
Other Required Hours: Practicum: 105 hours work experience at an approved clinical site per semester; Seminar: 1 hour per week.
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction and Group Work and HS-1300 Introduction to Human Services, and departmental approval: required background check must be completed at least three months prior to the first day of class.

HS-2200 Ethics in Chemical Dependency 3 Credits
Examination of ethical considerations in field of chemical dependency, with special emphasis on expectations regarding client confidentiality. Emphasis on ethical considerations surrounding the 12 Core Functions of Chemical Dependency Counseling. Identify scope of practice skills and limitations. Examination of contemporary issues impacting the delivery of chemical dependency services.
Lecture: 3 hours
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction, and Group Work.

HS-2300 Family Theory and Services 4 Credits
Principles of family dynamics. Emphasis on family preservation. Introduction to various family theories, approaches and intervention strategies. Explore concepts related to intergenerational patterns of behavior and family traits. Introduction to signs and symptoms of behaviors associated with abuse, domestic violence and neglect. Development of assessment skills with emphasis on relationships, parenting, abuse and/or neglect. Introduction to basic legal issues, ethics and reporting policies and procedures. Introduction to system and services of the local Department of Children and Family Services. Development of human service skills to service families. Explore range of services and resources available to families.
Lecture: 4 hours
Prerequisite(s): HS-1300 Introduction to Human Services, and ENG-1010 College Composition I; or departmental approval.

HS-2600 Systems Approach to Case Management 4 Credits
Lecture: 4 hours
Prerequisite(s): HS-1850 Introduction to Human Services Principles and Practices.

HS-2820 Advanced Independent Study/Research in Human Services 1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HS-2850 Human Services Principles and Practices I 5 Credits
Lecture: 2 hours
Other Required Hours: Practicum: 14 hours per week. Seminar: 1 hour per week.
Prerequisite(s): HS-1850 Introduction to Human Services Principles and Practices, or departmental approval: equivalent coursework or experience.

HS-2860 Human Services Principles and Practices II 3 Credits
Continuation of practicum experience. Focus on client within the existing service delivery system, and demonstration of approved therapeutic approaches, including Motivational Interviewing, Cognitive Therapy and Solution Focused therapy. Recognize signs of challenging clients and awareness of self in the therapeutic relationship. Understand and demonstrate the usage of billable terminology in client notes. Discuss family relationship aspects and effects on client treatment.
Lecture: 1 hour
Other Required Hours: Practicum: 210 hours per semester at practicum site; Seminar: 1 hour per week.
Prerequisite(s): HS-2850 Human Services Principles and Practices I.

HS-2990 Human Services Capstone 2 Credits
Capstone course in Human Services. Assessment of one’s knowledge, experience and skills as human service worker. Preparation and presentation of qualifications through written resume and portfolio. Guidelines and preparation for employment interview. Investigation into human services issues.
Lecture: 2 hours
Prerequisite(s): HS-2850 Human Services Principles and Practices I.

Humanities (HUM)

HUM-1010 Introduction to Humanities 3 Credits
Examines creative enterprise in human cultures through the study of great works of art and literature. Lectures, performances, exhibits, and multi-media presentations.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.
HUM-1020 The Individual in Society
3 Credits
Introduction to works of art, philosophies, and scientific views that portray, explain, and evaluate positions and interactions of individuals in society. Lectures, performances, exhibits, and multi-media presentations.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMAH.

HUM-102H Honors Individual in Society
3 Credits
Introduction to works of art, philosophies, literature, and political views that portray, explain, and evaluate individuals search for meaning in cosmos. Lectures, performances, exhibits, and multi-media presentations.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; or departmental approval.

HUM-1030 The Individual in Cosmos
3 Credits
Introduction to works of art, philosophies, religions, and scientific views that portray, explain, and evaluate individuals search for meaning in cosmos. Lectures, performances, exhibits, and multi-media presentations.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMAH.

HUM-1100 Leadership Development Studies
3 Credits
Introduction to theories and ethics of group dynamics in leadership styles through study of classic and contemporary writings. Internationally recognized course, designed by Phi Theta Kappa. Lectures, discussions, and experiential learning exercises.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMAH.

HUM-179H Honors Contract in Humanities
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes and objectives for an existing HUM-1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a HUM-1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

HUM-1812 Special Topics: Humanities and Leadership
3 Credits
This course examines different perspectives of leadership through literature, philosophy, and history inviting students to assess their own leadership potential and determine via positive examples of leadership new insights into their own and other's cultural leadership traditions. In collaboration with a community partner, students will explore key issues in leadership development.
Lecture: 3 hours
Prerequisite(s): None.

HUM-1820 Independent Study/Research in Humanities
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

HUM-182H Honors Independent Study/Research in Humanities
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
HUM-2812 Special topics in Mandel Scholars Community Engagement  
3 Credits  
Team of students engage in meaningful community service in partnership with a community organization enriching the learning experience enhancing student growth as leaders; applying civic responsibility; strengthening the community for common good. Learning takes place through a cycle of action and reflection and completion of a project. Experience enhances understanding of the organization/community leading to effective action. Develop the knowledge and practice skills that enhance civic engagement.  
Lecture: 3 hours  
Prerequisite(s): None.

HUM-282H Honors Advanced Independent Study/Research: Humanities  
1-3 Credits  
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Industrial Maintenance (ZINM)

ZINM-1018 Industrial Programmable Logic Controllers (PLC) I  
3.2 CEU's  
Learn and apply the concepts of Programmable Logic Controllers (PLC). This is a hands-on introduction to industrial type applications of PLCs requiring motion control with a study of automated manufacturing and the functions PLCs serve in an industrial environment.  
Contact hours: 32  
Not financial aid eligible.

ZINM-1035 Industrial Hydraulics  
3.2 CEU's  
This course will cover high pressure fluid systems. Labs will cover industrial hydraulics and fluid power circuitry. Material will also address the components used on mobile and construction machinery. Information will be shared regarding troubleshooting systems and repairing equipment.  
Contact hours: 32  
Not financial aid eligible.

ZINM-1066 Electronics for Manufacturing Electricians  
2.4 CEU's  
This class was specifically designed for Electrical Apprentices at a local manufacturing company. The students will learn Electronic Relay Controls, Sequencing Controls, Electronic Sensors and Electronic Counter Systems.  
Contact hours: 24  
Not financial aid eligible.

ZINM-1076 Welding Seminar  
0.8 CEU's  
Tri-C Auto-Tech department welding seminar. Topics covered: Compliance with industry safety guidelines; review of the fundamental skills of Stick, MIG, TIG and OxyFuel welding technologies; how to light and operate an oxy-acetylene torch and practice of this skill.  
Contact hours: 8  
Not financial aid eligible.

ZINM-1077 MSSC Certificate Training  
16 CEU's  
This program provides an industrywide accepted certification recognizing individuals who demonstrate mastery of the core competencies of manufacturing production through successful completion of the certification assessments. The CPT certification program will increase the level of performance of production workers and help both individuals in finding higher-wage jobs and employers in increasing the company's productivity and competitiveness.  
Contact hours: 160  
Not financial aid eligible.

ZINM-1078 MIG Welding - First Energy  
1.6 CEU's  
Contact hours: 16  
Not financial aid eligible.

ZINM-1079 Fluid Power for Maintenance Technicians 1  
3.2 CEU's  
This course addresses the practical application of fluid power principles used in the installation, maintenance and troubleshooting of industrial hydraulic and pneumatic systems and equipment.  
Contact hours: 32  
Not financial aid eligible.

ZINM-1080 Fluid Power for Maintenance Technicians 2  
4 CEU's  
Second part of course addresses the practical application of fluid power principles used in the installation, maintenance and troubleshooting of industrial hydraulic and pneumatic systems and equipment.  
Contact hours: 40  
Not financial aid eligible.

ZINM-1082 Industrial Maintenance Certificate Training Program  
31 CEU's  
The Industrial Maintenance Certification Program prepares individuals for a career in the high-demand industrial maintenance field. Taking a systems approach integrating electrical, mechanical, and IT, the program helps meet the demand for industrial maintenance technicians in Northeast Ohio's advanced manufacturing sector. The marriage of these three fields - better known as mechatronic systems - plays an ever-increasing role in manufacturing; from your car to your household appliances, from public transportation systems to electric power generators - in short, almost every aspect of daily life.  
Contact hours: 310  
Not financial aid eligible.

ZINM-1083 Electricity I - Direct Current  
1.4 CEU's  
Basic Electricity class for Direct Current theory and applications. This is a non-credit class developed for MRP corporation.  
Contact hours: 14  
Not financial aid eligible.
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ZINM-1086 Basics of Process Control and Instrumentation
3 Credits
4.8 CEU's
Concepts of electronics circuitry, devices and instruments including purpose, function and operations of diodes, transistors, silicon controlled rectifiers (SCR) DIAC, TRIAC, FET and other solid state devises in electronic circuits. Special attention is paid to industrial devices that contain these devices.

Contact hours: 48
Not financial aid eligible.

ZINM-1090 Troubleshooting for Maintenance
3 Credits
9.6 CEU's
Use pneumatic and electrical diagnostic tools to troubleshoot simple and advanced pneumatic and hydraulic trainers in common failure modes. Explore advanced pneumatic and hydraulic operations. Troubleshoot simple PLC wiring and pneumatics on a running program. Introduce mechanical concepts such as alignment, and rigging. Review 5-whys and do practical troubleshooting on plant equipment.

Contact hours: 96
Not financial aid eligible.

Information Technology (IT)

IT-1025 Information Technology Concepts for Programmers
3 Credits
Designed for students pursuing careers in programming, networking and general Information Technology fields. Introduces computer, networking, and programming concepts.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

IT-1050 Programming Logic
3 Credits
Learn to solve business problems by designing, coding, and testing programming solutions using a current high-level programming language. Learn and apply standard language constructs, control flow, and beginning object-oriented programming concepts.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers, or concurrent enrollment.

IT-1080 Introduction to Data Analytics
4 Credits
Broad coverage of topics key to data scientists to convert information to knowledge. Focus is on current data analytics methods to address business problems.

Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers or concurrent enrollment.

IT-1090 Computer Applications
3 Credits
Overview of the computer techniques and skills used in a professional environment. Instruction and hands-on training in file management, word processing, spreadsheet, presentation software, electronic collaboration, and professional Internet usage. Practical applications in researching, creating, editing, saving, presenting, and printing computer generated materials in a professional manner.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Recommend BT-1000 Keyboarding and Document Formatting for students who type less than 25 wpm or have no keyboarding experience.

IT-109H Honors Computer Applications
3 Credits
Overview of the computer techniques and skills used in a professional environment, with an emphasis on problem solving and addressing business needs. Instruction and hands-on training in file management, word processing, spreadsheet, presentation software, database management, electronic collaboration, and professional Internet usage. Practical applications in researching, creating, editing, saving, presenting, and printing computer generated materials in a professional manner.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or appropriate Math placement score; and eligibility for ENG-101H Honors College Composition I.

IT-1150 Introduction to Web Programming
3 Credits
Build Web pages using current technologies including but not limited to HTML, cascading style sheets and JavaScript using an HTML editor. Focus is on developing a foundation in web programming.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers, or concurrent enrollment.

IT-1815 Introduction to Blockchain
3 Credits
Course provides a foundation in Blockchain terminology, concepts and design and development fundamentals.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology for Programmers, IT-1050 Programming Logic, and IT-2351 Enterprise Database Systems.

IT-1816 Special Topics: Introduction to Quality Assurance
3 Credits
Introductory course in Quality Assurance that provides the fundamentals of software testing with exposure to Agile methodologies.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-2650 Java Programming or IT-2620 Visual Basic .NET Programming.

IT-1820 Independent Study/Research in Information Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

IT-2030 ASP.NET Web Programming
4 Credits
Capstone course for Programming and Development majors. Advanced server-side programming course. Create server-side, database-driven websites using the ASP.NET framework in combination with markup, style sheets and client-side scripting.

Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1150 Introduction to Web Programming, and IT-2351 Enterprise Database Systems; and IT-2650 Java Programming or IT-2620 Visual Basic .NET Programming.
IT-2080 Data Visualization
4 Credits
Create static and dynamic data visualizations using the latest development tools and techniques. Advanced topics include dashboards and stories.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers, and IT-1080 Introduction to Data Analytics or concurrent enrollment, and IT-2351 Enterprise Database Systems.

IT-2090 Data Analytics Programming
4 Credits
This course covers the fundamental concepts of R and the use of R for effective data analysis. Students will develop skills to develop solutions to complex problems across a variety of disciplines using data and real-world case studies.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1050 Programming Logic, and IT-1080 Introduction to Data Analytics or concurrent enrollment.

IT-2100 iOS Application Programming
4 Credits
Focuses on skills required to successfully create dynamic and efficient iOS applications. Covers the fundamentals of objects, classes and behaviors as well as object communication and user interface design considerations. Mac computer required with ability to download/install software.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-2650 Java Programming.

IT-2110 Android Mobile Application Development
3 Credits
Introduction to mobile development using the Android Software Development Kit (SDK). Focuses on the skills required to design, develop and publish applications for the Android platform. Covers the fundamentals of Android application development including designing an application, implementing specific framework components such as a splash screen and main menu, how to handle user interaction and make an application available in the Android market.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-2650 Java Programming.

IT-2320 Interactive Internet Programming
4 Credits
Introduction to interactive object-oriented programming in an Internet environment from a conceptual approach. Emphasis is on understanding the basic Internet technologies (mostly from the client side), how and when to use them and how to integrate them into a system.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1050 Programming Logic, and IT-1150 Introduction to Web Programming.

IT-2351 Enterprise Database Systems
4 Credits
Apply knowledge of: relational algebra, data migration, data warehousing, data mining, distributed databases and security to design, develop and normalize a Structured Query Language (SQL) database to 3rd normal form using appropriate diagrams and database objects. Retrieve, insert, update, delete, troubleshoot and report data from complex SQL databases.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers; and MATH-0955 Beginning Algebra, or MATH-0990 Math Literacy for College Students, appropriate score on Math placement test.

IT-2400 Unity Game Programming
3 Credits
An introduction to scripting with Unity focusing on the programming skills needed to translate game design principles into a fully-functional game.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VCIM-1400 Game Design II: Game Engines, or departmental approval.

IT-2600 E-Business Programming Technologies
3 Credits
Use of web programming technologies to create Internet client/server applications. Design, create, code and debug applications using Web objects. Topics include, but are not limited to, SQL, XML, C# .Net, Visual Basic .Net, and a server-side technology such as PHP.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1150 Introduction to Web Programming, and IT-2351 Enterprise Database Systems; and IT-2650 Java Programming; or IT-2620 Visual Basic .NET Programming, or IT-2670 C/C++ Programming Language, or IT-2680 Visual C#.NET.

IT-2620 Visual Basic .NET Programming
4 Credits
Introduction to object-oriented programming in a Windows environment using the Visual Basic programming language and .NET framework. Emphasis on program development and design, application of logic in both user-defined and event-driven procedures, debugging techniques, and basics of Visual Basic syntax.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1050 Programming Logic, or departmental approval: equivalent knowledge or skills.

IT-2650 Java Programming
4 Credits
Introduction to object-oriented methodologies and programming using the Java programming language. Design, code, and debug Java applications. Other topics include GUI components, event handling, and exception handling.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-1050 Programming Logic.

IT-2660 Data Structures & Algorithms
4 Credits
Programming and problem-solving skills are further developed by using language features to implement various data structures such as stacks, queues, linked lists, trees and graphs. Additional topics include recursion, sorting, searching, and hashing algorithms.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): IT-2650 Java Programming.
IT-2670 C/C++ Programming Language  
4 Credits  
Introduction to programming using the C and C++ programming languages, emphasizing program development and design, debugging techniques, and common basics of the C/C++ languages. Topics include data types, control statements, functions, argument passing, arrays, strings, structures, data files, and classes.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1050 Programming Logic.

IT-2680 Visual C# .NET  
4 Credits  
An introduction to object-oriented programming using the Visual C# .NET programming language. Design, code and debug Visual C# .NET applications and objects. Topics include, but not limited to, using methods, creating and using classes, GUI components, the Visual Studio IDE, event handling, using controls and exception handling.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1050 Programming Logic.

IT-2700 Systems Analysis and Design  
3 Credits  
Overview of systems development life cycle. Utilize structured tools and object-oriented techniques to analyze and document process flow, data flows, data structures, file designs, input & output designs and program specifications in the systems development life cycle. Examine information gathering and reporting activities. Analyze strategies and techniques for producing logical methodologies which deal with complexity in development of information systems.  
Lecture: 3 hours  
Prerequisite(s): IT-1050 Programming Logic.

IT-2710 Advanced Topics in Network Security  
3 Credits  
Capstone course. Provides in-depth understanding of network security principles and the tools and configurations needed to secure a network.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): ITNT-2370 Network Security Fundamentals.

IT-2720 Ethical Hacking and Systems Defense  
3 Credits  
Combines an ethical hacking methodology with the application of security tools to better help students secure systems. Includes an introduction to common countermeasures that effectively reduce and/or mitigate attacks.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): ITNT-2370 Network Security Fundamentals, and ITNT-2320 Network Administration I, and ITNT-2380 Linux Administration.

IT-2730 Intrusion Detection/Prevention Systems Fundamentals  
3 Credits  
Covers the design, implementation, and administration of Intrusion Detection/Prevention Systems. Includes practical, hands-on experience working with these systems and analysis various attack signatures and the network traffic these systems collect.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): EET-1312 Cisco II Basic Routing and Switching, and ITNT-2370 Network Security Fundamentals.

IT-2740 Fundamentals of Client Operating Systems and Hardware for Cybersecurity  
4 Credits  
Provides an introduction to and basic technical understanding of the function and operation of operating systems and computing hardware with consideration given to relevant security best practices.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers.

IT-2750 Scripting Fundamentals for Cybersecurity  
4 Credits  
Introduction to concepts important for popular cybersecurity scripting languages, including basic data types, control structures, regular expressions, input/output, and textual analysis. One or more common scripting languages relevant to the field of cybersecurity will be utilized in the course.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1050 Programming Logic.

IT-2760 Ethical Hacking and Systems Defense  
3 Credits  
Continuation of IT-2720 Ethical Hacking and Systems Defense where students will continue to discover the building blocks of Blockchain and then extend their learning to examine and create Blockchain applications.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1815 Special Topics: Introduction to Blockchain.

IT-2800 Fundamentals of Client Operating Systems and Hardware for Cybersecurity  
3 Credits  
Provides an introduction to and basic technical understanding of the function and operation of operating systems and computing hardware with consideration given to relevant security best practices.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers.

IT-2816 Special Topics: QA-2 - Software Testing  
3 Credits  
This is a continuation of IT1816 Introduction to Quality Assurance. In this course, students will learn SDLC process, testing types, techniques and test management cycle and will also get exposure to Agile Testing.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None.

IT-2818 Special Topics: Blockchain Applications  
3 Credits  
Continuation of IT-2815 Special Topics: Introduction to Blockchain where students will continue to discover the building blocks of Blockchain and then extend their learning to examine and create Blockchain applications.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1815 Special Topics: Introduction to Blockchain.

IT-2819 Special Topics: Python Programming  
4 Credits  
Introduction to programming using the Python programming language. Focus is on understanding Python code through the use of interactive execution of code and lecture, and an introduction to tools for development and debugging.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): None.

IT-2820 Special Topics: Client Operating Systems and Hardware for Cybersecurity  
3 Credits  
Provides an introduction to and basic technical understanding of the function and operation of operating systems and computing hardware with consideration given to relevant security best practices.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers.

IT-2821 Special Topics: Web Programming  
4 Credits  
This is an advanced web programming course where we use Node.js framework to build web applications. Students will learn full stack web development including asynchronous processing, routing and accessing data in Node.js framework using Javascript, Express and MongoDb.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-2320 Interactive Internet Programming.

IT-2822 Special Topics: Python Programming  
4 Credits  
Introduction to programming using the Python programming language. Focus is on understanding Python code through the use of interactive execution of code and lecture, and an introduction to tools for development and debugging.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): None.

IT-2823 Special Topics: Blockchain Applications  
3 Credits  
Continuation of IT-2815 Special Topics: Introduction to Blockchain where students will continue to discover the building blocks of Blockchain and then extend their learning to examine and create Blockchain applications.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1815 Special Topics: Introduction to Blockchain.

IT-2824 Special Topics: Python Programming  
4 Credits  
Introduction to programming using the Python programming language. Focus is on understanding Python code through the use of interactive execution of code and lecture, and an introduction to tools for development and debugging.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): None.

IT-2825 Special Topics: Web Programming  
4 Credits  
This is an advanced web programming course where we use Node.js framework to build web applications. Students will learn full stack web development including asynchronous processing, routing and accessing data in Node.js framework using Javascript, Express and MongoDb.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): IT-2320 Interactive Internet Programming.

IT-2900 Advanced Topics in Network Security  
3 Credits  
Capstone course. Provides in-depth understanding of network security principles and the tools and configurations needed to secure a network. Includes an introduction to common countermeasures that effectively reduce and/or mitigate attacks.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): ITNT-2370 Network Security Fundamentals.
IT-2820 Advanced Independent Study in Information Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

IT-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): See campus CO-OP Advisor for the Cooperative Education Program application.

Information Technology - Networking Software (ITNT)

ITNT-2300 Networking Fundamentals
3 Credits
Survey course into the fundamental topics and concepts of networks and network technologies. Topics include introductory content on networking standards, models and protocols, networking hardware, transmission methods and media, LANs, WANs, Wireless, VOIP, security, and network management issues. Serves as a preparation basis for the CompTIA Network+ exam.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1241 Digital Fundamentals, or concurrent enrollment; or IT-1025 Information Technology Concepts for Programmers, or concurrent enrollment; or departmental approval. CTAN Approved: CTIT002.

ITNT-2310 TCP/IP
3 Credits
Provides knowledge and skills required to setup, configure, use, and support Transmission Control Protocol/Internet Protocol (TCP/IP).
Emphasis on Microsoft Windows operating system.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2300 Network Fundamentals or concurrent enrollment, or departmental approval: equivalent knowledge or skills.

ITNT-2320 Network Administration I
3 Credits
Introduction to knowledge and skills necessary to perform installation, configuration, and day-to-day administration tasks in a Microsoft Windows-based network. Includes how to install the server operating system, manage local and remote access, manage file and printer services, implement group policies, and manage server storage. How to install and configure Active Directory (AD), Domain Name System (DNS) server, Dynamic Host Configuration Protocol (DHCP), and networking services are also covered.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2300 Network Fundamentals or concurrent enrollment, or departmental approval: equivalent knowledge or skills. CTAN Approved: CTIT013.

ITNT-2370 Network Security Fundamentals
3 Credits
A survey examination of network security fundamentals involved in creating and managing secure computer network environments. Both hardware and software topics are considered, including authentication methods, remote access, network security architectures and devices, cryptography, forensics and disaster recovery plans. Serves as preparation basis for CompTIA Security+ exam.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2300 Networking Fundamentals, or EET-1302 Cisco I Basic Networking Technologies and EET-1312 Cisco II Basic Routing and Switching.

ITNT-2380 Linux Administration
3 Credits
Linux is used as a platform for many server applications including the dominant Web server. Cost and licensing advantages have made it a network operating system that is in widespread use. The essentials of installing, configuring, maintaining, administering, and troubleshooting the Linux Operating System will be covered.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2300 Network Fundamentals or concurrent enrollment; or departmental approval: equivalent knowledge or skills.

ITNT-2420 Network Administration II
3 Credits
Focus on designing, implementing, and supporting Windows Server network operating system in multiple-domain enterprise environment. Implementing directory services, analysis and optimization, and troubleshooting discussed.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ITNT-2320 Network Administration I, or departmental approval: equivalent knowledge or skills.

ITNT-2820 Advanced Independent Study/Research in Networking Software
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ITNT-2990 Networking Capstone
3 Credits
Capstone course for Networking (Hardware and Software) degree programs. Primary focus on developing the strategy and knowledge to successfully pass various industry related certification exams.
Lecture: 3 hours
Prerequisite(s): To be taken within the last 15 credits of the IT (Networking Software) or the EET (Networking Hardware) degree programs, or departmental approval.
Integrated Systems Engineering Technology (ISET)

ISET-1101 Welding Blue Print Reading
3 Credits
Explore the techniques of reading blueprint and welding symbols relating to the welding field, including the proper way to read and apply measurements and dimensioning pertaining to industrial blueprints and metal specifications. Includes how to understand and interpret views and translate measurements and dimensions.
Lecture: 3 hours
Prerequisite(s): None.

ISET-1300 Mechanical/Electrical Print Reading
2 Credits
Introduction to fundamental theory and application of blueprint reading skills. Included material will cover electrical, mechanical, structural drawings with symbols and wiring diagrams, Safety Codes, basic troubleshooting techniques. Extensive guided instruction and practice provided.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

ISET-1310 Mechanical Power Transmission
2 Credits
Introduction to basic concepts of industrial maintenance and installation of mechanical drive systems including bearing, shafts, gears, and couplings. With an emphasis on OSHA safety standards, installation, maintenance, troubleshooting, and lubrication of mechanical components.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

ISET-1320 Fundamentals of Fluid Power
2 Credits
Principles of power transmission are presented and contrasted with other means of transmission. Includes laws and principles of fluid power transmission, units of pressure and flow, plumbing materials and sizing, pressure losses through piping, and the uses of vacuum and vacuum applications. Extensive guided instruction and practice provided.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET-1300 Mechanical/Electrical Print Reading.

ISET-1340 Industrial Piping and Tubing
2 Credits
Concepts and principles specific to piping, pipefitting, and tubing techniques, materials, routing and layout including types of material, cutting, threading, measurements, fittings, bending, and offsets. Extensive guided instruction and practice provided.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET-1300 Mechanical/Electrical Print Reading

ISET-1410 Applied Electricity I
3 Credits
Fundamentals of electricity with emphasis on resistance, direct current voltage and current, electrical quantities and units of measurements. Ohm’s Law, Kirchoff’s voltage and current laws will also be covered.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score.

ISET-1420 Applied Electricity II
3 Credits
Principles and applications of electricity with emphasis on alternating current, inductors, capacitors, and phase relationships. Electrical quantities and units of measurements, Ohm's Law, Kirchoff's voltage and current laws, single and three phase transformers will also be included. Extensive guided instruction and practice provided.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET-1410 Applied Electricity I, or departmental approval.

ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I
2 Credits
Learn the basics of refrigeration, heat transfer, and thermodynamics HVAC/R applications. This course covers modern HVAC/R systems including their major components, controls, different duct work designs, combustion, HVAC/R blueprint reading, refrigerants, working fluids, and energy management systems.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

ISET-1460 Fundamental Boiler Technology
3 Credits
Concepts and fundamental skills associated with the operation and maintenance of steam boilers. Topics include an overview of steam boilers and boiler operation, basic boiler processes, boiler construction and material properties, boiler operating and maintenance procedures, combustion theory and fuels, efficiency, and codes and standards. Safety codes and procedures, preventive maintenance and basic troubleshooting techniques will also be covered. Extensive guided instruction and practice provided.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

ISET-2100 Gas Metal Arc Welding (MIG)
4 Credits
Develop skills in Gas Metal Arc Welding (MIG). Extensive guided instruction provided. Prepares students for the MIG certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading or departmental approval.

ISET-2110 Gas Tungsten Arc Welding (TIG)
4 Credits
Develop skills in Gas Tungsten Arc Welding (GTAW-TIG). Extensive guided instruction provided and prepares a student for the TIG certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading or departmental approval.

ISET-2120 Shielded Metal Arc Welding (STICK)
4 Credits
Develop skills in Shielded Metal Arc Welding (STICK). Extensive guided instruction provided and prepares a student for the SMAW (STICK) certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading or departmental approval.
ISET-2131 Oxyfuel Processes/Plasma Processes
4 Credits
Develop skills in OxyFuel processes, cutting, brazing, and plasma processes. Extensive guided instruction provided.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading; or departmental approval.

ISET-2140 Non-Destructive Testing
3 Credits
An introduction to terms, definitions, methods, and applications of the non-destructive testing profession and an in-depth exploration of two methods of non-destructive testing: visual inspection and liquid penetrant examination. The tools, proper processing techniques, different testing methods, and interpretation involved with visual inspection and liquid penetrant testing will be discussed and practiced.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

ISET-2151 Robotic Welding
4 Credits
Concepts and fundamental skills associated with the operation and programming of robotic welding machines. Topics include safe operation of robotic welding machines; building and editing programs to complete simple and complex welds; welding variables and options; and machine maintenance and setup.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-2100 Gas Metal Arc Welding (MIG).

ISET-2160 Structural Fabrication
4 Credits
Complete a fabrication project, beginning by interpreting a set of prints, developing a plan, and working to cut, prepare, fit and weld raw materials together. The fabrication project will resemble a real world scenario related to the shipbuilding, construction, aeronautical, or related industries on a smaller scale.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading, and ISET-2100 Gas Metal Arc Welding (MIG).

ISET-2170 Flux-Cored Arc Welding (FCAW)
4 Credits
Presents both a practical and theoretical understanding of Flux-Cored Arc Welding (FCAW) processes through extensive hands-on instruction. Provides solid background for field-competitive FCAW certification.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading; or departmental approval.

ISET-2200 Industrial Motor Controls
3 Credits
Instruction in theory, application, and use of industrial type motors focusing on topics of safety, direct current (DC) motors, alternating current (AC) motors, single-phase motors, three-phase motors, motor troubleshooting methods, and motor starting. Extensive guided instruction and practice provided.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET-1420 Applied Electricity II, or EET-1210 AC Electric Circuits, or departmental approval.

ISET-2210 Commercial Wiring
3 Credits
Principles of commercial electrical installations to prepare for work in the electrical field in a commercial, environmental setting. Based on the National Electric Code, study includes job specifications, sizing and selection of materials, and installation techniques. Extensive guided instruction and practice provided.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET-2240 Applied National Electric Code or concurrent enrollment; or departmental approval.

ISET-2220 Fundamentals of Electronics and Instrumentation
3 Credits
Concepts of electronics circuitry and instruments including purpose, function, and operation of diodes, transistors, Silicon Controlled Rectifiers (SCRs), DIACs, TRIACs, Field Effect Transmitters (FETs), and other solid state devices used in live dynamic electronic circuits. Extensive guided instruction and practice provided.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET-1420 Applied Electricity II, ISET-2200 Industrial Motor Controls; and departmental approval.

ISET-2240 Applied National Electric Code
3 Credits
Introduction to the National Electric Code including industry safety hazards, standards, and precautions. Extensive guided instruction and practice provided.
Lecture: 3 hours
Prerequisite(s): ISET-1420 Applied Electricity II.

ISET-2450 Heating Ventilation Air Conditioning/Refrigeration II
2 Credits
This is a continuation in the study of the basics of refrigeration, heat transfer and thermodynamics in HVAC/R applications. Emphasis is placed on the calculation and determination of space heating and cooling loads, experimental work, and hands-on training and preparation to pass the EPA Proper Refrigerant Practices certification exam. Important topics include: HVAC/R thermodynamics and heat transfer, air conditioning processes, comfort and IAQ, space heating loads, space cooling load, volumetric flow rates, advanced blueprint readings and systems designs, energy consumption, specifications, and components selections.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I, or departmental approval.

ISET-2460 Applied Boiler Technology
2 Credits
The focus of this course will be the applications of steam and hot water boilers, water chillers, steam and hydronic heating and cooling systems. This course is the prerequisite for the State of Ohio approved Low Pressure Operators Exam Preparatory class. Extensive guided instruction and practice provided.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET-1460 Fundamental Boiler Technology, or departmental approval.
ISET-2500 Programmable Logic Controllers Maintenance I
3 Credits
Fundamental concepts of Programmable Logic Controllers (PLCs) Maintenance including applications of industrial type PLCs requiring motion control, automated manufacturing and the functions PLCs serve in that environment. Extensive guided instruction and practice provided. Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET2200 Industrial Motor Controls, and departmental approval.

ISET-2510 Programmable Logic Controllers Maintenance II
2 Credits
Programming and application of Programmable Logic Controllers (PLCs) including timers, counters, program control, data manipulation, and math instructions. Extensive guided instruction and practice provided. Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET2500 Programmable Logic Controllers Maintenance I, or departmental approval.

ISET-2520 Programmable Logic Controllers Maintenance III
2 Credits
Programming and application of programmable logic controllers (PLCs) including sequencers, shift registers, PLC installation, editing, troubleshooting, process control, date acquisition, and computer-controlled machines and processes. Extensive guided instruction and practice. Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET2510 Programmable Logic Controllers Maintenance II or concurrent enrollment; or departmental approval.

ISET-2990 Reliability Centered Maintenance
3 Credits
Advanced concepts and principles of troubleshooting, preventative and predictive maintenance. Reliability centered maintenance, elements of root cause and failure analysis for hydraulic systems. Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ISET2500 Programmable Logic Controllers Maintenance I, and ISET-2210 Commercial Wiring, or departmental approval.

Interior Design (INTD)

INTD-1100 Hand Drafting and Sketching for Interiors
2 Credits
Introduction to hand drafting and field sketching for interior design. Emphasizes identification of basic construction and field terminology, use of field equipment, and the application and interpretation of construction documents. Provides a foundation in using hand drafting tools and translating field sketches to working drawings. Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, or concurrent enrollment; and MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test to enroll in MATH-0955 Beginning Algebra.

INTD-1101 Hand Drafting and Sketching for Interiors
3 Credits
Introduction to hand drafting and field sketching for interior design. Emphasizes identification of basic construction and field terminology, use of field equipment, and the application and interpretation of construction documents. Provides a foundation in using hand drafting tools and translating field sketches to working drawings. Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, or concurrent enrollment; and MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math Placement Test to enroll in MATH-0955 Beginning Algebra.

INTD-1111 Introduction to Interior Design
3 Credits
Introduction to interior design studies with emphasis on identifying and developing basic skills and competencies required for residential and nonresidential design. Principles and practices utilized in subsequent interior design coursework. Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; and IT-1090 Introduction to Computer Applications, or concurrent enrollment.

INTD-1120 Architectural Drafting for Interiors I
3 Credits
Introduction to two-dimensional computer-aided drafting (CAD). Learn and apply basic and intermediate CAD commands to draw, edit and plot drawings of architectural exteriors, interiors, elevations, sections, and details for the purpose of design, documentation and presentation. Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): IT-1090 Computer Applications, and INTD-1101 Hand Drafting and Sketching for Interiors, and INTD-1111 Introduction to Interior Design, and MATH-1000 level or higher or concurrent enrollment; or departmental approval.

INTD-1130 Architectural Drafting for Interiors II
3 Credits
Introduction to REVIT software and building information modeling for commercial structures. Learn and apply basic REVIT commands to develop plans, sections, exterior and interior elevations, details and perspectives for the purpose of design, documentation and presentation. Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): INTD-1120 Architectural Drafting for Interiors I, and MATH-1000 level or higher; or departmental approval.

INTD-1820 Independent Study/Research in Interior Design
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
INTD-2300 Interior Design Studio I
3 Credits
First in two-course sequence. Introduction of functional space planning through design of residential projects. Emphasis on problem solving and exploring multiple design solutions for kitchen and bath design. Addresses accessibility design and guidelines according to the Americans with Disabilities Act (ADA). Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ART-1081 2D Design and Color, or concurrent enrollment; INTD-1111 Introduction to Interior Design, INTD-1120 Architectural Drafting for Interiors I, INTD-1130 Architectural Drafting for Interiors II, or concurrent enrollment; INTD-2380 Fundamentals of Lighting, or concurrent enrollment; INTD-2430 Architectural Materials and Methods, and VC&D 1000 Visual Communication Foundation, or concurrent enrollment; or departmental approval.

INTD-2320 History of Interiors
3 Credits
Examines the development of furnishings, ornaments, interiors, and architectural details from antiquity to the present. Lecture: 3 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, and ART-2020 Art History Survey: Prehistoric to Renaissance.

INTD-2330 Interior Design Materials and Sources
3 Credits
Review various interior finishes and materials through lectures, field trips, projects, and research assignments. Apply criteria for specifying materials and finishes of interior spaces using Construction Specifications Institute (CSI) MasterFormat specifications and Furniture, Finishes and Equipment (FF&E) specifications. Gain general knowledge and application of types of textiles used in commercial and residential spaces. Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, and INTD-1101 Hand Drafting and Sketching for Interiors, and MATH-0955 Beginning Algebra or appropriate score on Math Placement Test to enroll in 1000-level Mathematics or higher.

INTD-2380 Fundamentals of Lighting
3 Credits
Principles and techniques of lighting design and application in interior space. Light measurement, sources, specifications, color and light, and proper terminology used to create an interior environment. Emphasis on color selection, color psychology, color trends, forecasting, and how light affects color and design elements in interior spaces. Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, and INTD-1120 Architectural Drafting for Interiors I, and INTD-2330 Interior Design Materials and Sources, or concurrent enrollment.

INTD-2400 Interior Design Studio II
3 Credits
Second in two-course sequence. Introduction to the functional design of commercial interiors with an emphasis on evidence-based design and research, analysis of existing structures, building constraints, accessibility, regulations and guidelines. Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-2300 Interior Design Studio I, and concurrent enrollment in INTD-2460 Interior Design Materials and Sources, or concurrent enrollment, INTD-2471 Professional Practice of Interior Design, and INTD-2330 Interior Design Materials and Sources, or concurrent enrollment.

INTD-2430 Architectural Materials and Methods
3 Credits
Emphasizes the study of building construction, environmental systems and controls, building systems, and fire and life safety codes, standards, and guidelines through field trips and research. Application of construction and building systems knowledge to functional solutions for interior environments and general knowledge and application of commercial building codes. Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-1120 Architectural Drafting for Interiors I, and INTD-2330 Interior Design Materials and Sources, or concurrent enrollment.

INTD-2460 Interior Design Materials and Sources
3 Credits
Verbal and visual communication methods for interior designers. Focuses on perspective construction, hand and electronic rendering techniques, sketching techniques, presentation methods and digital and web design portfolio construction. Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): Concurrent enrollment in INTD-2400 Interior Design Studio II, and VC&D-1000 Visual Communication Foundation.

INTD-2471 Professional Practice of Interior Design
2 Credits
Business practices for production of residential and commercial interior design projects within a global context. Emphasis on professional ethics and building professional relationships. Operation, communications, and legal responsibilities along with resumes, interviews, and business conduct presented. Preparation for INTD-2851 Interior Design Field Experience. Lecture: 2 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design and ENG-1010 College Composition I.

INTD-2820 Advanced Independent Study/Research in Interior Design
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

INTD-2851 Interior Design Field Experience
1 Credit
Capstone course in Interior Design. Students placed in practical work environment under College supervision. Interaction with professionals in the field and application of skills and knowledge gained in the classroom required. Other Required Hours: Field Experience: 14 hours per week; 210 hours per semester at assigned site.
Prerequisite(s): INTD-2330 Interior Design Materials and Sources, INTD-2400 Interior Design Studio II, or concurrent enrollment, INTD-2430 Architectural Materials and Methods, INTD-2460 Interior Design Presentation, or concurrent enrollment, or INTD-2471 Professional Practice of Interior Design, or concurrent enrollment, and departmental approval.

Prerequisite(s): INTD-1111 Introduction to Interior Design, INTD-1120 Architectural Drafting for Interiors I, and INTD-2330 Interior Design Materials and Sources, or concurrent enrollment.
Internet-Other (ZINT)

ZINT-1016 Introduction to Web Design with HTML5
3 CEU's

Web design consists of using multiple software tools and codes, such as Dreamweaver, Flash, Illustrator, Photoshop, HTML, and CSS, among others, to craft a unique, robust and interactive websites. This course teaches you how to effectively use the major tools involved in web design to create a site that is both attractive and functional. Focus is on the fundamentals of designing and publishing home pages with the HTML language.

Contact hours: 30
Not financial aid eligible.

ZINT-1018 Blockchain for Business: Unlocking the Potential
1.65 CEU's

Blockchain is an emerging technology that can vastly improve banking, supply chain, and other transaction networks, and can create new opportunities for innovation. Blockchain technology provides the basis for a dynamic, shared ledger that can save time when recording transactions between parties, remove costs associated with intermediaries, and reduce risks of fraud and tampering.

Contact hours: 16.5
Not financial aid eligible.

ISO Training (ZISO)

ZISO-1039 Certified Quality Auditor (CQA) Refresher
2.4 CEU's

This is an 8-week course designed to prepare quality professionals for the Certified Quality Auditor (CQA) Examination that leads to CQA Certification from the American Society for Quality (ASQ). The course will review the significant sections of the CQA Body of Knowledge including audit planning, audit process, fundamentals, auditor competencies, audit program management and a number of quality tools used in the audit process. Sample exam questions will be reviewed throughout the course to give students the feel of the exam.

Contact hours: 24
Not financial aid eligible.

ZISO-1040 Certified Quality Engineer (CQE) Refresher
3.3 CEU's

The course is designed for individuals preparing for the Certified Quality Engineer (CQE) exam. It provides a comprehensive review of the CQE Body of Knowledge, established by the American Society for Quality, and reinforces the understanding of a quality engineer's role. This course will increase participants' skills using metrology and statistical methods to diagnose and correct improper quality control practices and will refresh their skills relating to applying and analyzing testing and inspection procedures.

Contact hours: 33
Not financial aid eligible.

ZISO-1041 Certified Manager of Quality/Organizational Excellence (CMQ/OE) Refresher
2.4 CEU's

This is an 8-week course designed to prepare quality professionals for the Certified Manager of Quality/Organizational Excellence (CMQ/OE) Examination that leads to CMQOE Certification from the American Society for Quality (ASQ). The course will review the significant sections of the CMQOE Body of Knowledge including Leadership, Teams/Team Processes, Code of ethics, Strategic Planning, Stakeholder Analysis, Management Skills, Communication Skills, Project Management, Quality Systems, Quality Management Tools, Measurement/Metrics, Customer & Supply Management. Sample exam questions will be reviewed throughout the course to give students the feel of the exam.

Contact hours: 24
Not financial aid eligible.

ZISO-1044 Certified Quality Technician (CQT) Refresher
2.4 CEU's

This course prepares participants to take ASQ's Certified Quality Technician (CQT) exam. It is designed for those who can analyze quality problems, prepare inspection plans and instruction, select sampling plan applications and apply fundamental statistical methods for process control.

Contact hours: 24
Not financial aid eligible.

ZISO-1064 Certified Quality Improvement Associate (CQIA) Refresher
1.8 CEU's

The Certified Quality Improvement Associate (CQIA) is an individual who has basic knowledge of quality tools and their uses and is involved in quality improvement projects, but does not necessarily come from a traditional quality area. This refresher course reviews in detail the CQIA Bodies of Knowledge to help those individuals preparing to take the American Society for Quality (ASQ) Certified Quality Improvement Associate Exam.

Contact hours: 18
Not financial aid eligible.

ZISO-1130 Plexus: Understanding and Internal Auditing for ISO 14001:2015
2.4 CEU's

An environmental management system (EMS) based on the ISO 14001 standard is recognized worldwide as a superior methodology for reducing environmental hazards, maintaining regulatory compliance and as a cost-saving vehicle. EMS internal auditors assist an organization in maintaining an effective EMS and in meeting environmentally sensitive targets and objectives. Using environmental methodology and tools, this course helps your organization drive continuous improvement. Learn a range of internal EMS auditing skills that will help you become a strong advocate and auditor in your company's effort to obtain maximum value from its commitment to environmental issues. Gain confidence in your audit skills, from planning through reporting the results. Acquire actual experience working as a member of a functioning audit team during the course.

Contact hours: 24
Not financial aid eligible.
ZISO-1149 Exemplar Global Certified/Plexus ISO 9001:2015 Lead Auditor Training
3.6 CEU's
Learn a full range of auditing skills to help you become a strong advocate in your company’s efforts to obtain maximum value from your commitment to ISO 9001:2015. Through interactive learning methods, participants will acquire the necessary skills to become a leader in preparing and conducting audits. Successful completion of this course meets the training requirements for certification of individual QMS Lead Auditors.
Contact hours: 36
Not financial aid eligible.

ZISO-1152 Exemplar Global Certified/ Plexus: ISO 9001:2015 Understanding and Internal Auditor Training
2.4 CEU's
Designed for new or experienced internal auditors, this course provides participants with an understanding of the requirements of auditing to ISO 9001:2015. Participants will acquire the necessary skills to become a leader in preparing and conducting audits through interactive methods while avoiding lecture-based learning. Successful completion of this course meets the training requirements for certification of individual QMS Internal Auditors.
Contact hours: 24
Not financial aid eligible.

2.4 CEU's
This internationally-accredited 3-day course is designed for new internal auditors and experienced internal auditors who need to perform internal quality audits to IATF 16949:2016. Participants will complete an in-depth review of ISO 9001:2015, IATF 16949:2016, and the tools to effectively prepare and conduct internal audits. Through individual participation and group exercises, participants will apply and audit the requirements of ISO 9001:2015 and IATF 16949:2016 through case study activities that focus on industry-recognized auditing techniques. A final examination is included at the end of the course.
Contact hours: 24
Not financial aid eligible.

ZISO-1154 Plexus AS9100D: Understanding and Internal Quality Auditing
2.1 CEU's
Internal audits remain a crucial requirement of the AS9100D standard to verify the compliance of an organization's quality management system to the standard. This course is designed for both new and existing internal auditors who need a thorough refresher on how to perform an internal audit to AS9100. Participants will gain an in-depth understanding of AS9100D and the tools needed to effectively prepare and conduct first- and second-party audits to AS9100D. Using interactive learning methods, this course engages participants in a detailed review of AS9100D including key changes related to counterfeit parts, documented information, operational risk management, process approach and risk-based thinking.
Contact hours: 21
Not financial aid eligible.

ZISO-1155 Plexus: ISO 13485:2016 Medical Devices Understanding and Internal Auditor
2.4 CEU's
In the field of medical products, devices, and components, regulatory requirements and customer expectations are demanding. Throughout the world, manufacturers and their suppliers are expected to comply with the highest standards and regulations. ISO 13485 Medical Devices is the standard for organizations engaged in the manufacture of medical devices. Designed for new and current auditors interested in sharpening their auditing skills, participants will acquire the necessary skills to become a leader in preparing and conducting 1st and 2nd party audits to ISO 13485. This course includes a simulated audit, based on documentation from an actual organization, so participants can develop and refine their newly acquired knowledge and skills.
Contact hours: 24
Not financial aid eligible.

ZISO-1159 Value Stream and Process Mapping
2 CEU's
This course teaches participants various methods for mapping business processes. It includes 16 hours of classroom instruction and two to four hours of online assignments (varies by individual). Through experiential instruction, discussion, group activities and hands-on exercises, participants will learn how to identify a business process, read and create process maps and document the process.
Contact hours: 20
Not financial aid eligible.

ZISO-1161 Plexus: Understanding ISO 9001:2015
1.6 CEU's
Contact hours: 16
Not financial aid eligible.

ZISO-1164 Core Tools I: Plexus Understanding and Implementing APQP, Control Plans, PPAP and FMEA
2.4 CEU's
Learn the skills needed to implement the Advanced Product Quality Planning (APQP) process, develop control plans and complete the production part approval process smoothly, efficiently and effectively within your company. Establish the foundation to avoid Murphy’s Law — things that could go wrong don’t have to with successful use of Failure Modes and Effects Analysis (FMEAs). Acquire the skills necessary to complete all five APQP phases from "voice of the customer" through final output, including control plan methodology and Production Parts Approval Process (PPAP) submission. This course will also teach you the skills to understand and use FMEAs as well as risk reduction and defect prevention.
Contact hours: 24
Not financial aid eligible.
ZISO-1165 Core Tools II: Plexus Understanding and Implementing MSA and SPC 1.6 CEU's

Establish the foundational knowledge needed to analyze your manufacturing system and enhance its effectiveness. Gain a basic understanding of how to establish, analyze and implement a statistical process control (SPC) system in a manufacturing environment. Discover how to implement and audit SPC fundamentals at your facility and develop a statistical toolbox that can be used for each of your projects. Gain a better understanding of how to develop measurement studies. Identify the linkages between measurement systems, using techniques of measurement systems analysis (MSA) and the appropriate tools for defining its continued capability and effectiveness. This course includes activities to help you understand and audit your measurement system.

Contact hours: 16
Not financial aid eligible.

ZISO-1171 Understanding the New ISO 17025:2017 0.8 CEU's

ISO 17025:2005 is an indispensable tool in the form of a standard to develop and establish a quality system for a laboratory. This workshop provides an introduction to the new ISO/IEC 17025:2017, discussing the new structure/content, outlining the key changes and conducting a crosswalk comparison to ISO/IEC 17025:2005 to help learners understand and apply the new requirements.

Contact hours: 8
Not financial aid eligible.

ZISO-1172 Internal Auditor Refresher Course 0.8 CEU's

Audits remain a crucial requirement of the ISO/IATF standards to verify the compliance of an organization’s quality management system. Internal auditors must be knowledgeable of ISO/IATF requirements to effectively perform internal audits. Taught by experienced auditors, this one-day refresher course is designed for both new and existing auditors who need a thorough refresher on how to perform an internal audit. Participants will review the tools needed to effectively prepare and conduct first- and second-party audits. This course uses interactive learning methods to engage participants in a review of documented information, process approach and risk-based thinking.

Contact hours: 8
Not financial aid eligible.

ZISO-1179 Effectively Handling Supplier Nonconformances (Online) 1.6 CEU's

Discover how to develop, implement and maintain effective supplier nonconformance and supplier partnership programs in your organization. Participants will learn the differences between short-term (interim/remedial) action and long-term (corrective/preventive) action and how to implement key supplier metrics for monitoring and improvement.

Contact hours: 16
Not financial aid eligible.

ZISO-1181 Plexus: ISO 45001:2018 Internal Auditor Training for Occupational Health and Safety 2.4 CEU's

This three-day course provides internal-audit team members with the knowledge to interpret and audit occupational health and safety (OH&S) management system requirements, based on the requirements of ISO 45001:2018 and ISO 19011:2018.

Contact hours: 24
Not financial aid eligible.

ZISO-1182 Technical Writing Fundamentals (Online) 3.2 CEU's

Students will learn the process of technical writing through hands-on projects that include identifying the audience, organizing content, document revision and document design. This course covers an assortment of writing styles, including web writing, definitions, descriptions, instructions, reports and basic business communication.

Contact hours: 32
Not financial aid eligible.

ZISO-1183 Introduction to Supply Chain Management (Online) 18 CEU's

Supply chains encompass the companies and the business activities needed to design, make, deliver and use a product or service. Businesses depend on supply chains to survive and thrive. Every business fits into one or more supply chains, with a role to play in each of them. This course provides an organized framework for understanding the essential concepts of supply chain management, and how to develop and deploy supply chains to achieve success in a fast-paced global economy.

Contact hours: 180
Not financial aid eligible.

ZISO-1184 Plexus: AIAG & VDA Design FMEA: Transition for Practitioners 1.6 CEU's

This course will assist you in transitioning from the AIAG & VDA FMEA Fourth Edition to the AIAG & VDA FMEA Handbook. Learn to execute Design FMEA according the new handbook by achieving a deeper understanding of the explicit and subtle changes, along with high impact benefits that will bring your organization’s DFMEA to the next level of product design robustness. By the end of this training you will be able to describe, analyze, exemplify and apply the improvements in the AIAG & VDA FMEA Handbook. Additionally, you will gain the skills necessary to evaluate the consistency of DFMEA application, measure its effectiveness and efficiency within your organization, and develop a transition implementation plan from the AIAG FMEA Fourth Edition methodology to the seven-step approach recommended by the AIAG & VDA FMEA Handbook.

Contact hours: 16
Not financial aid eligible.

ZISO-1185 Plexus: Transitioning to ISO 45001:2018 Occupational Health and Safety 1.6 CEU's

This two-day training provides an in-depth review of the changes from OHSAS 18001 to ISO 45001:2018. This training program provides participants with the necessary knowledge to support their organization in achieving compliance to ISO 45001:2018. It is designed for experienced implementation-team members and other experienced representatives from key functional groups responsible for transitioning the organization’s management system to ISO 45001:2018.

Contact hours: 16
Not financial aid eligible.
ZISO-1186 Plexus: AIAG & VDA Process FMEA: Transitioning for Practitioners
1.6 CEU's
This course will assist you in transitioning from the AIAG FMEA 4th Edition to the AIAG & VDA FMEA Handbook. Learn to execute Process FMEA according the new handbook by achieving a deeper understanding of the explicit and subtle changes, along with high impact benefits that will bring your organization's PFMEA to the next level of manufacturing process design robustness. By the end of this training, you will be able to describe, analyze, exemplify and apply the improvements in the AIAG & VDA FMEA Handbook. Additionally, you will gain the skills necessary to evaluate the consistency of PFMEA application, measure its effectiveness and efficiency within your organization, and develop a transition implementation plan from the AIAG FMEA 4th Edition methodology to the 7-Step approach recommended by the AIAG & VDA FMEA Handbook. 

Contact hours: 16
Not financial aid eligible.

IT Business/Management (ZMGT)

ZMGT-1007 Introduction to Project Management
0.7 CEU's
Project Management is a strategic competency for organizations that ties project results to organizational goals. Project managers have the skills to effectively and efficiently initiate, plan, execute, monitor and control projects successfully. This course provides a solid foundation in the terminology, tools, concepts and methods of Project Management based on best practices outlined by the Project Management Institute® (PMI®). The training provides a framework to successfully manage projects, or participate on and support projects.

Contact hours: 7
Not financial aid eligible.

ZMGT-1019 Microsoft Project 2016 - Beginner
0.8 CEU's
A concise introduction to Microsoft Project 2016. Course materials provide up-to-date information on setting up projects and building a project schedule. The goal of this course is to impart an overall understanding of Microsoft Project 2016 with a focus on basic concepts, definitions, tools, strategies, processes and phases.

Contact hours: 8
Not financial aid eligible.

ZMGT-1020 Microsoft Project 2016 - Intermediate
0.8 CEU's
This course introduces advanced techniques for maintaining a project schedule in Microsoft Project 2016. The materials provide up-to-date information on maintaining a project schedule, troubleshooting schedule issues and communicating project schedule status. The goal of this course is to impart an overall understanding of Microsoft Project with a focus on basic concepts, definitions, tools, strategies, processes and phases of project schedule management.

Contact hours: 8
Not financial aid eligible.

ZMGT-1021 Keyboarding and Communication Intensive
2.1 CEU's
Keyboarding and Communication is to enhance the effective use of the English language essential to professional success in the world by way of learning to read and listen critically, as well as utilize everyday technology efficiently. Through a combination of real world scenarios and activities, this course will improve written and oral communication skills and teach skills on writing and speaking thoughtfully, clearly, coherently, and persuasively. Keyboarding emphasis is placed on the following: mastery of the keyboard with desirable keyboarding techniques; development of speed and accuracy; and proper care of the equipment. Keyboarding is foundation for developing entry-level skills for business careers.

Contact hours: 21
Not financial aid eligible.

ZMGT-1022 Keyboarding and Communication
2.1 CEU's
Keyboarding and Communication is to enhance the effective use of the English language essential to professional success in the world by way of learning to read and listen critically as well as utilize everyday technology efficiently. Through a combination of real world scenarios and activities, this course will improve written and oral communication skills and teach skills on writing and speaking thoughtfully, clearly, coherently, and persuasively. Keyboarding emphasis is placed on the following: mastery of the keyboard with desirable keyboarding techniques; development of speed and accuracy; and proper care of the equipment. Keyboarding is foundation for developing entry-level skills for business careers.

Contact hours: 21
Not financial aid eligible.

ZMGT-1165 Microsoft Project 2016 - Advanced
0.8 CEU's
This course is a continuation of Microsoft Project 2016. The materials provide up-to-date information on setting up projects and building a project schedule. The goal of this course is to impart an overall understanding of Microsoft Project with a focus on advanced concepts, definitions, tools, strategies, processes and phases of schedule management.

Contact hours: 8
Not financial aid eligible.

IT Design (ZDES)

ZDES-1026 Digital Marketing Boot Camp
3.2 CEU's
The hybrid Digital Marketing Boot Camp is an intensive 10-week course that covers all aspects of digital marketing, including social media, digital marketing strategy, campaign planning, content development, lead generation and engaging customers via mobile and email campaigns. This meets online Tuesdays from 5:30-7:30 p.m. All online classes are delivered via live interactive video. There will be three in-person workshops. Benefits and Features Hands-on learning of core aspects of digital marketing Project-based work that can help you build your digital marketing portfolio Combination of in-person and online instruction Exam preparation for certifications including Online Marketing Certified Professional (OMCP®) and the American Marketing Association's Professional Certified Marketer (PCM®) and Digital Marketing certifications

Contact hours: 32
Not financial aid eligible.
ZDES-1027 Building Websites with WordPress
3 CEU's
Building Websites with WordPress is a hands-on introductory course that provides you the information necessary to create a WordPress.com website or blog. This course is designed for people with limited experience in web design or development and who would like to build an attractive, sophisticated blog or website without having to learn any special coding. Building Websites with WordPress is ideal for freelancers, small business owners or students seeking to have a web presence. By the end of this course, you will be able to use WordPress to create, upgrade and maintain a blog or a personal, business or organizational website.
Contact hours: 30
Not financial aid eligible.

ZDES-1028 Adobe InDesign
1.5 CEU's
Contract Training for Adobe InDesign
Contact hours: 15
Not financial aid eligible.

ZDES-1029 Adobe Illustrator, Photoshop and InDesign
3 CEU's
Learn intermediate to advanced methods of using Adobe Illustrator, Photoshop and InDesign for web design and development. This course offers instruction on how to create, format, save and implement digital graphics for use online. Students will gain insight on web standards for graphics, illustration, page layout and web design and development software.
Contact hours: 30
Not financial aid eligible.

IT Networking (ZNET)

ZNET-1005 Network+
4 CEU's
The CompTIA Network+ certification course builds on your existing user-level knowledge and experience with personal computer operating systems and networks to present fundamental skills and concepts that you will use on the job in any type of networking career. If you are pursuing a CompTIA technical certification path, the CompTIA A+ certification is an excellent first step to take before preparing for the CompTIA Network+ certification.
Contact hours: 40
Not financial aid eligible.

ZNET-1023 Networking Capstone
1.35 CEU's
Capstone course for Networking (Hardware and Software degree programs). Primary focus on developing and responding to request for proposals, and determining and presenting solutions to various networking environments. Uses case studies and teamwork.
Contact hours: 13.5
Not financial aid eligible.

ZNET-1252 Google IT Professional Certificate Program
500 CEU's
Launch a New Career in IT Today  In partnership with Google, Cuyahoga Community College (Tri-C®) is offering the Google IT Support Professional Certificate. Students can take noncredit courses to receive this industry-driven credential. For students enrolled in an IT academic degree program, the certificate content is built into existing credit courses. Benefits and Features Rigorous five-course certificate developed by Google. Complete course assessments and certification exam through Coursera to receive Google IT Support Professional Certificate. Prepares you for an entry-level IT support job. Partnerships with top employers (Bank of America, Walmart, Sprint, GE Digital, PNC Bank, Infosys, TEKsystems and UPMC) for potential employment opportunities. Financial support available.
Contact hours: 5000
Not financial aid eligible.

IT Programming (ZPRG)

ZPRG-1029 Advanced Web HTML5, CSS3, Java
3 CEU's
Learn to create dynamic webpages using the popular scripting language JavaScript. This course is for beginning programmers with prior knowledge of HTML.
Contact hours: 30
Not financial aid eligible.

ZPRG-1048 Cleveland Codes Tri-C Software Developers Academy
49.5 CEU's
This immersive 24-week program provides students with the skills necessary to pursue a career in web application and development, teaching them how to program C# within the .NET framework.
Contact hours: 495
Not financial aid eligible.

IT Security (ZSCR)

ZSCR-1019 Security+
3.75 CEU's
Security+ CompTIA Certification is the primary course you will need to take if your job responsibilities include securing network services, network devices, and network traffic. It is also the main course you will take to prepare for the CompTIA Security+ examination. In this course, you'll build on your knowledge and professional experience with computer hardware, operating systems, and networks as you acquire the specific skills required to implement basic security services on any type of computer network.
Contact hours: 37.5
Not financial aid eligible.
Italian (ITAL)

ITAL-1010 Beginning Italian I
4 Credits
Introduction to Italian through multiple approaches emphasizing speaking and understanding. Practice in conversational Italian and aural comprehension on topics of daily interest. Practice in writing basic sentences and small simple paragraphs on relevant topics and reading short paragraphs.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OLF013.

ITAL-1020 Beginning Italian II
4 Credits
Development of proficiency in speaking, understanding, reading, and writing in Italian. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): ITAL-1010 Beginning Italian I, or one year of high school Italian, or departmental approval.

ITAL-1820 Independent Study/Research in Italian
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

ITAL-182H Honors Independent Study in Italian
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ITAL-2010 Intermediate Italian I
3 Credits
Increased vocabulary development and structural review through readings of cultural texts. Emphasis on oral expression and group discussions. Intensive exercises in written and oral expression. Grammar review and vocabulary building.
Lecture: 3 hours
Prerequisite(s): ITAL-1020 Beginning Italian II, or two years of high school Italian, or departmental approval.

ITAL-2020 Intermediate Italian II
3 Credits
Intensive exercises in written and oral expression in Italian with emphasis on conversation. Further improvements of written skills. Reading of selected texts in order to deepen understanding and appreciation of Italian culture. Additional grammar review and vocabulary building. Further exploration of Italian literature.
Lecture: 3 hours
Prerequisite(s): ITAL-2010 Intermediate Italian I, or two years of high school Italian, or departmental approval.

ITAL-2410 Italian Conversation and Composition
3 Credits
Development of proficiency in speaking, understanding, reading, and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics and more conversational opportunities. Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Practice in writing compositions. Emphasis on group discussion.
Lecture: 3 hours
Prerequisite(s): ITAL-2020 Intermediate Italian II or concurrent enrollment, and departmental approval: three years of high school Italian.

ITAL-2420 Italian Civilization, Culture and Literature
3 Credits
Introduction to the civilization and literature of Italy. Emphasis on the interrelationship between history and geography of Italy and its culture.
Lecture: 3 hours
Prerequisite(s): ITAL-2410 Italian Conversation and Composition, or concurrent enrollment with departmental approval: three years of high school Italian.

ITAL-282H Advanced Honors Independent Study/Research in Italian
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Japanese (JAPN)

JAPN-1011 Beginning Japanese Language and Culture I
4 Credits
Introduction to modern Japanese. Listening, speaking, reading, writing, and basic grammatical structures, with emphasis on appropriate social use of the language within Japanese culture. Hiragana, katakana, and 75-100 kanji. Basics of kanji dictionaries. Presented through class interaction, audio, video, and computer lab instruction.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
JAPN-1021 Beginning Japanese Language and Culture II
4 Credits
Continued study of modern Japanese in social and cultural context. Emphasis on listening comprehension and speaking regarding practical daily transactions. Reading basic, graded texts and writing simple compositions, integrating basic grammatical structures, hiragana, katakana, and 100-150 new kanji. Acquiring speed in referring to kanji dictionaries. Class interaction, audio, video, and computer lab. Lecture: 3 hours. Laboratory: 2 hours Prerequisite(s): JAPN-1011 Beginning Japanese Language and Culture I, or departmental approval.

JAPN-2011 Intermediate Japanese Language and Culture I
4 Credits
Continued study of modern Japanese in social and cultural context. Listening and speaking skills necessary for basic function and communication in Japanese society. Reading functional, intermediate, graded texts and writing brief compositions and personal correspondence, integrating intermediate grammatical structures and 150-200 new kanji. Class interaction, audio, video, and computer lab. Lecture: 3 hours. Laboratory: 2 hours Prerequisite(s): JAPN-1021 Beginning Japanese Language and Culture II, or departmental approval.

JAPN-2411 Advanced Japanese Language and Culture I
3 Credits
Modern Japanese in social and cultural context. Development of focused listening comprehension and conversational skills. Discussion of cultural and business topics in Japanese. Reading selected literary materials and authentic texts such as periodicals, short stories, and novel excerpts. Writing journal entries and compositions of 200-400 characters. Introduction of 200-250 new kanji. Class interaction, audio, video, and computer lab. Lecture: 2 hours. Laboratory: 2 hours Prerequisite(s): JAPN-2411 Advanced Japanese Language and Culture I, or departmental approval.

JAPN-282H Advanced Honors Independent Study: Japanese
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics. Lecture: 1-3 hours Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Knowledge Management (ZKNO)

ZKNO-1001 OnBase® System Administrator
1.8 CEU's
The OnBase® Certified System Administrator course is an intensive, two-week training on how to effectively use, maintain and administer OnBase. Led by Hyland Software training professionals, the course provides an immersive, hands-on experience that prepares participants to become certified OnBase System Administrators. This course is one of only two trainings offered at a community college nationwide as a part of the OnBase START program, which finds and trains talented professionals in the marketplace seeking an EIM career as an OnBase Administrator. START was developed to find, develop, and connect new OnBase professionals to organizations with open positions to bridge the gap in OnBase demand and trained candidates. This training program establishes and validates the skills of individuals new to the OnBase world and looking to move into or start their EIM careers. OnBase System Administrators are in high demand across the country, and Hyland Software, the makers of OnBase, are headquartered in Westlake, Ohio. The OnBase Certified System Administrator (OCSA) certification is awarded to OnBase System Administrators who possess a high level of OnBase knowledge, understand how OnBase is used in their organization, and demonstrate the ability to support and maintain their OnBase solution.
Contact hours: 18
Not financial aid eligible.
ZKNO-1002 Professional Scrum Master (PSM) Certification Prep
1.6 CEU's
A Professional Scrum Master™ helps project teams properly use Scrum, increasing the likelihood of the project's overall success. PSMs understand Scrum values, practices and applications and provide a level of knowledge and expertise above and beyond that of typical project managers. PSMs act as "servant leaders," helping the rest of the Scrum team work together and learn the Scrum framework. CSMs also protect the team from both internal and external distractions.
Contact hours: 16
Not financial aid eligible.

Leadership (ZLDR)

ZLDR-0145 Life Coach Career Prep (Online)
54.5 CEU's
Life Coaching is quickly becoming one of the most in-demand professional services. Life Coaches work with clients to help them establish and achieve their professional goals, as well as personal aspirations. You will learn coaching fundamentals, including listening skills and the language of coaching. You will also go beyond the basics, learning how to work with individual clients, helping them establish their personal and professional goals.
Contact hours: 545
Not financial aid eligible.

ZLDR-0146 Start Your Own Business in Career Coaching (Online)
94.5 CEU's
The purpose of this course is to give the student tools, information, and strategies to equip them for success when starting a career coaching or life coaching business. We will discuss topics such as risk, economics, the global market, ethics, legal considerations, organization, human resources, and marketing. Students will gain a practical understanding of the components of a small business, and the steps to creating and establishing a business.
Contact hours: 945
Not financial aid eligible.

ZLDR-0147 Customer Service Representative (CSR) Exam Prep (Online)
20 CEU's
The customer service representative plays an essential role in an organization’s success through providing product and service information and resolving product and service problems. In this course, you will learn about the various duties and responsibilities of the customer service provider, and you will practice these using a variety of exercises, hypothetical interactions, and assignments. The goal of this course is to prepare you to be an outstanding, reliable, and successful customer service representative in a business or other organization. In addition to providing students with a comprehensive education in customer service, this course will also prepare students to take nationally recognized customer service certification exams, including, but not limited to, the HDI Customer Service Representative Certification Exam. This course prepares students to take the HDI Customer Service Representative (HDI-CSR) certification exam.
Contact hours: 200
Not financial aid eligible.

ZLDR-0149 Basic Management Skills (Online)
3.2 CEU's
This course presents the skills needed to help you move into a management position, along with key strategies to help you understand how to navigate the "management minefield" with ease. Learn methods for dealing with unruly employees, the role of office politics and listening techniques that will help you understand what your boss is expecting.
Contact hours: 32
Not financial aid eligible.

ZLDR-0150 Consulting - Managing Your Own Business (Online)
2.4 CEU's
This course will provide vital information and pragmatic steps for starting, developing, and marketing a successful consulting practice. In this course, we will explore and discuss the need and role of management consultants, how consultants deliver services and interact with clients, managing the consulting process and consulting deliverables, staffing for consulting projects, and marketing consulting services. Students will learn the organizational management consulting process, from initial client contact (entry) to termination of the consulting engagement or re-contracting for a new engagement.
Contact hours: 24
Not financial aid eligible.

ZLDR-0151 Fundamental Employment Laws (Online)
2.4 CEU's
Do you need to better understand how federal employment laws affect your workplace? This course will introduce you to the most impactful federal employment laws. By understanding the basics of employment law, you will become better equipped to hire, evaluate and manage employees. This course presents insight into discrimination laws, employee benefits, methods to resolve employment disputes and common workplace safety rules. Knowing the federal employment laws is a must for any supervisor, entrepreneur, manager or human resources professional.
Contact hours: 24
Not financial aid eligible.

ZLDR-0152 Fundamentals of Instructional Design (Online)
2.4 CEU's
Students will explore ways in which courses can be designed. They will be introduced to the ADDIE design model and other design models that may work in other environments. Students will write instructional objectives and design a unit of instruction and assessments that support the instructional objects, and will plan an evaluation of their instructional materials.
Contact hours: 24
Not financial aid eligible.

ZLDR-0180 Create a Shared Vision and Strategy
0.4 CEU's
When effective leaders create a shared vision and strategy, they help the organization achieve its top priorities. In this course, participants will learn how to create an inspiring team vision and a strategy aligned with the organization's vision. They will discover how to powerfully communicate the vision to stakeholders at all levels to successfully implement the strategy.
Contact hours: 4
Not financial aid eligible.
ZLDR-0181 Execute Your Team's Strategy and Goals
0.4 CEU's
Long-lasting success in an organization is achieved through leaders who are disciplined and focused. Effective leaders use key processes, methods and procedures to meet their organizational goals. When executed well, these systems utilize and engage team members to consistently achieve results. In this course, participants will discover how to access six core systems, align them to their team's strategy and implement the proven 4 Disciplines of Execution® process to achieve their team's most important goals.
Contact hours: 4
Not financial aid eligible.

ZLDR-0182 Leading at the Speed of Trust
0.8 CEU's
Trust plays a critical role in the credibility and performance of an organization. Fostering and sustaining the high trust of others requires specific behaviors. In this course, participants will learn the language of trust, as well as actions to build and maintain trust as leaders. Increasing trust will lead to a positive reputation, greater employee retention and improved results within your organization.
Contact hours: 8
Not financial aid eligible.

ZLDR-0183 Team Excellence
0.4 CEU's
Organizations understand that every employee is valuable and contributes unique talents and experience to each project or task at hand. Comparatively, when employees come together as a team, the end result is typically even greater success — that is, when managers understand how create a collaborative and high-performing atmosphere. Effective collaboration not only helps increase the quality of results, but also the productivity. In this session, participants will learn to create synergy and team goals, cultivate accountability, and coordinate effective team-building activities, effectively allowing them to achieve high performance.
Contact hours: 4
Not financial aid eligible.

ZLDR-0184 Leaders@Change
0.8 CEU's
In today's rapidly paced work environment, change seems to occur faster and more often. Effective leaders must be equipped to lead their team successfully through changes within the organization. In this course, participants will learn to diagnose their team's readiness for change using a simple change model tool. They will also practice five specific steps to help their members move forward with big changes.
Contact hours: 8
Not financial aid eligible.

ZLDR-0185 Ongoing Performance Management
0.4 CEU's
Ongoing performance development involves establishing a systematic process that managers can use to support employees. This process focuses on creating clear expectations for individual performance based on the organization's goals. The goal of this session is to help managers improve their people development skills by implementing a performance management system that helps every employee achieve their peak performance potential.
Contact hours: 4
Not financial aid eligible.

ZLDR-0186 Coaching for Accelerated Performance
0.4 CEU's
Coaching for development recognizes the need for employees to feel committed to their work and helps managers and other leaders encourage individual performance as a means for increasing engagement and, ultimately, productivity. In this session, participants will learn the key elements of building a successful coaching relationship and how to best implement a coaching framework. They will also discover tools for assessing employee commitment levels to determine the most effective coaching response for a variety of situations.
Contact hours: 4
Not financial aid eligible.

ZLDR-0188 Professional in Human Resources (PHR® or SPHR®) Exam Prep (Online)
13.5 CEU's
Learn about the exciting world of human resource management and prepare for the HR Certification Institute PHR® or SPHR® exam! This online course weaves together solid human resource principles, timely research and recent events, such as the latest rise in unemployment and financial problems facing the U.S. and other countries. It also highlights important challenges facing managers and employees in today's business climate. Interesting case studies explore real companies and organizations in depth and delve into some of today’s most effective, unique approaches in dealing with HR issues. The PHR® or SPHR® Exam Study Guide will be utilized throughout the course to supplement the textbook and provide review materials for exam prep. Upon completion of this course, students will have the skills necessary to serve as human resource managers and will be prepared to sit for the PHR® or SPHR® exam.
Contact hours: 135
Not financial aid eligible.

ZLDR-0189 The Experienced Manager Certificate (Cohort)
5.2 CEU's
The Experienced Manager Certificate is a 6.5-day (52-hour) program that provides a tailored development experience for seasoned supervisors to mid-managers. The program focuses on elevating skills and behaviors critical to supporting senior leadership in connecting and communicating business strategy back to the day-to-day. Fine-tuning your leadership skills and behaviors will help to further engage, inspire and drive your teams and results forward. This cohort includes all 11 classes (specific dates and times) for one fee.
Contact hours: 52
Not financial aid eligible.

ZLDR-0194 The 7 Habits of Highly Effective People: Foundations
0.8 CEU's
Great performance requires a common set of values, behaviors and skills that align individual capabilities to strategy. Understand how to balance the demands on your time, work more effectively with others and self-renew. Learn the timeless principles of human effectiveness that propel you toward greater maturity and performance. The 7 Habits Foundations program will help ensure strong individual performance at all levels. This is a one-day introduction to The 7 Habits of Highly Effective People 4.0.
Contact hours: 8
Not financial aid eligible.
ZLDR-0195 The 7 Habits for Managers: Essential Skills and Tools for Leading Teams
1.6 CEU's
Successfully leading a team takes a unique and different set of skills than those of an individual contributor. It's hard to be a good boss! Many leaders and managers have been promoted due to their individual competence and performance but may struggle when it comes to leading and managing people. The 7 Habits for Managers: Essential Skills and Tools for Leading Teams is an intensive, application-oriented learning experience that focuses on the fundamentals of great leadership and its execution. Perfect for both new and experienced frontline managers, this two-day program will provide the mindsets, skills and tools to help managers meet today's management challenges.
Contact hours: 16
Not financial aid eligible.

ZLDR-0196 The 5 Choices to Extraordinary Productivity
1.6 CEU's
Each day brings with it a new wave of urgencies that compete for our attention. Texts, emails, calls, meetings and more all converge on our already full schedules. The result is a sense of being busy without actually being productive, which leaves people feeling burned out and unfulfilled. The sheer volume of daily distractions threatens our ability to think clearly and make wise decisions about what is important. The 5 Choices to Extraordinary Productivity empowers people to avoid distractions and accomplish the goals that matter most in their professional and personal lives. Supported by science and years of experience, The 5 Choices not only produce a measurable increase in productivity, but provide a renewed sense of engagement and accomplishment as well.
Contact hours: 16
Not financial aid eligible.

ZLDR-0225 Frontline Manager Certificate Program: Boot Camp
3.8 CEU's
Frontline managers and supervisors play a vital role business, supervising the employees who deliver the products and services your valued customers desire. Investing in talent development at this critical point leads to improved supervisor effectiveness and engagement, increasing employee productivity, retention and engagement. A well-developed frontline workforce also provides a greater pool of candidates to fuel your talent pipeline as well as improved customer satisfaction and return business. The Frontline Manager Certificate Program at Corporate College® equips upcoming, new and seasoned supervisors with the tools they need to succeed in their leadership roles. This Boot Camp allows participants to take all 10 classes in one week (Monday - Friday) with our leadership expert facilitators.
Contact hours: 38
Not financial aid eligible.

ZLDR-0294 Moving From Peer to Boss
0.4 CEU's
Congratulations on your first supervisory position! As you move “from peer to boss,” it seems like everything changes — the role, tasks, relationships and responsibilities. To navigate these waters, you will need to put things in perspective and understand how your role has changed. This course provides a proven strategy for moving forward, settling into the position and improving team productivity.
Contact hours: 4
Not financial aid eligible.

ZLDR-0296 Financial Business Acumen Simulation (Apples and Oranges)
0.8 CEU's
While organizations have invested in enterprise systems to communicate information across departments, often individuals continue to be stuck in their siloed thinking, focusing on their technical skills and not being able to connect daily actions to strategy and financial outcomes. A board-based simulation visually demonstrates material flow through the supply chain to customer delivery. Concepts such as cash flow, working capital and market growth challenge participants to make business decisions.
Contact hours: 8
Not financial aid eligible.

ZLDR-0297 Become an Effective Trainer
0.8 CEU's
Designed for employees who frequently train others in the workplace, this course will provide the tool kit for delivering high-quality training sessions and best practices for overcoming barriers in the training environment. Participants will gain insight into the different learning styles of adults, so training resonates with the intended audience. They will also explore methods to evaluate training techniques and practices, to ensure learning success.
Contact hours: 8
Not financial aid eligible.

ZLDR-1029 Managing Conflict in the Workplace
0.4 CEU's
One of the most difficult aspects of management is dealing with the day to day conflicts that arise in the workplace. This program will explore the five basic modes people use in dealing with conflict and how to determine when each mode is most appropriate/least appropriate. In addition, the program will explore the common blocks to successful conflict resolution and teach a 6-step collaborative process for resolving conflicts that has proven successful in business, government, and family life.
Contact hours: 4
Not financial aid eligible.

ZLDR-1142 Leading High Performance Teams
0.4 CEU's
Today's organizations demand that their teams do more. Good, solid, or adequate team outputs won't produce maximum business results, but high-performing teams will. The secret to helping teams perform at their best? The leader. Their knowledge, skills, and abilities can transform an acceptable team into an exceptional one. This course provides team leaders with the tools and skills to perform three primary responsibilities—diagnose, coach, and reinforce—that support their team's growth. Leaders learn to diagnose behaviors and conditions that limit team performance. They are equipped to assess team strength and weakness, as well as use coaching and reinforcing skills to be a catalyst for high performance and continuous improvement.
Contact hours: 4
Not financial aid eligible.
ZLDR-1208 Prioritizing My Time
0.4 CEU's

Today we are all swamped with work and personal responsibilities, projects, magazines to read, social media to keep up with, and lots of other things we want to do as soon as we get caught up. Prioritization is an essential skill that we need to master to make the best use of our efforts and those of our team. This skill will also help create an atmosphere of calmness and fluidity, which allows for the focus of our energy and attention to be on the things that are truly productive.
Contact hours: 4
Not financial aid eligible.

ZLDR-1212 Handling Conflict at Work
0.4 CEU's

Conflict in the workplace is a given; though we may try to avoid it, we cannot escape it. The ability to recognize conflict, understand the nature or cause of the conflict and resolve conflict effectively will benefit individuals, teams and the organization as a whole. Developing the skills to handle conflict in the workplace is essential; not only will it increase morale and productivity at work, but will be of value in all areas of life.
Contact hours: 4
Not financial aid eligible.

ZLDR-1213 Effective Communication
0.4 CEU's

It’s no secret that good leaders are also good communicators. The best leaders know that effective communication is as much about listening to others as it is about the words they speak. The importance of the exchange of information in the workplace makes effective communication skills a critical business tool and an essential employee attribute.
Contact hours: 4
Not financial aid eligible.

ZLDR-1214 Embracing Change at Work
0.4 CEU's

Change happens all around us — at home, in our communities and at work. The only constant of change is that it is unavoidable. Anxiety over the unknown, changes in roles and responsibilities and/or processes can result in unhappy, unproductive and stressed-out employees. Embracing change is easier when we know what the changes are, why they are happening, the benefits they will yield and how to overcome barriers to change.
Contact hours: 4
Not financial aid eligible.

ZLDR-1215 Using Your Strengths
0.4 CEU's

Do you have the opportunity to do what you do best every day? Chances are, you don't. All too often, our natural talents go untapped. From the cradle to the cubicle, we devote more time to fixing our shortcomings than to developing our strengths. Based on the bestselling book Strengths Finder 2.0 by Tom Rath, this course is sure to uncover hidden talents and strengths that will be invaluable throughout your entire career.
Contact hours: 4
Not financial aid eligible.

ZLDR-1216 Becoming a Team Player
0.4 CEU's

Teamwork is critical to an organization's productivity and profitability. Teams solve problems better and accomplish tasks faster. Each individual on a team has unique qualities that make that team stronger and more effective. Learning what those qualities are and what role they play on the team will help to create an environment of trust and success.
Contact hours: 4
Not financial aid eligible.

ZLDR-1217 Professionalism
0.2 CEU's

Webster defines professionalism as "the skill, good judgment and polite behavior expected from a person who is trained to do a job well." However, what is deemed professional in one circumstance may not be so in another. Today's organizations are multicultural, multifaceted and multitasking; the way we dress, the things we say and how we act may change from job to job or from meeting to meeting. Employees must learn to be aware of their environment and accountable for their actions in order to be considered a professional in today's ever-changing workplace.
Contact hours: 2
Not financial aid eligible.

ZLDR-1218 Dealing With Difficult People
0.4 CEU's

Ever wonder how an encounter with a person went so bad so quickly and asked yourself, “What did I do?” Chances are that you were simply dealing with a difficult person. Most times we can avoid or minimize our interactions with difficult people, but sometimes they are unavoidable. The best way to handle difficult people is to be aware and prepared for their behaviors and to develop strategies for dealing with them.
Contact hours: 4
Not financial aid eligible.

ZLDR-1219 Delivering Great Customer Service
0.4 CEU's

Customer service has the power to form a customer's entire perception of an organization. One bad experience can result in losing not only that customer, but future customers as well. Studies show that a satisfied customer may tell two to three people about their experience, while dissatisfied customers will tell between eight and 20. However, even an unhappy customer will become loyal if you are fast, fair and friendly in resolving their complaint.
Contact hours: 4
Not financial aid eligible.

ZLDR-1266 Communicating for Leadership Success (Online)
0.3 CEU's

This foundation course introduces leaders to essential interaction skills that are critical to leadership success. These core behaviors allow leaders to be effective in the situations they handle on a daily basis, such as coaching, delegating and driving change.
Contact hours: 3
Not financial aid eligible.
ZLDR-1267 Addressing Poor Performance (Online)
0.2 CEU's
Many leaders struggle with employees who exhibit poor performance or work habits despite repeated coaching. This course builds leaders’ skill and confidence in handling chronic performance problems.
Contact hours: 2
Not financial aid eligible.

ZLDR-1268 Coaching for Peak Performance (Online)
0.35 CEU's
This course helps leaders handle both proactive and reactive coaching discussions. By understanding the importance of four coaching techniques, learners can have more effective and efficient interactions. The session incorporates a fast-paced game to understand the techniques. Since both proactive and reactive coaching discussions can be challenging, participants will use their own situations to make the course especially relevant to them.
Contact hours: 3.5
Not financial aid eligible.

ZLDR-1269 Building and Sustaining Trust (Online)
0.2 CEU's
What does trust have to do with business success? Everything! Trust is directly linked to employee engagement, retention, productivity and innovation. Leaders who demonstrate trust and trustworthiness inspire higher levels of performance and organizational commitment. This course introduces the Trust Builders — actions leaders can take to build and sustain trusting relationships — as well as common Trust Breakers that can quickly erode or break trust. Applying these skills to build trusting relationships enables people to take risks, identify and solve problems, and collaborate to achieve business results.
Contact hours: 2
Not financial aid eligible.

ZLDR-1283 Train-the-Trainer Boot Camp
2.4 CEU's
The Train-the-Trainer Bootcamp program teaches participants the fundamental knowledge and skills required to be successful classroom instructors. This three-day facilitator-led program utilizes self-assessments and interactive group discussions and activities to help participants understand the key competencies and methodologies for delivering outcome-based training initiatives.
Contact hours: 24
Not financial aid eligible.

ZLDR-1288 Emotional Intelligence (EQ) 2.0
0.4 CEU's
Emotional Intelligence (EQ) is defined as a set of competencies demonstrating the ability one has to recognize his or her behaviors, moods and impulses and to manage them according to the situation. This course provides tools for becoming emotionally intelligent in the workplace. An employee with high emotional intelligence can manage his or her own impulses, communicate with others effectively, manage change well, solve problems and use humor to build rapport in tense situations.
Contact hours: 4
Not financial aid eligible.

ZLDR-1289 Personal Strengths Strategy Coaching with a Certified Strengths Coach
0.3 CEU's
There's a big difference between simply knowing what your strengths are, and knowing how to use them to get the results you want. The key is in a deeper awareness of your strengths — discovering and understanding how your strengths uniquely create high energy and outstanding performance for you. Once you have a deep knowing of how your strengths play out in your activities and in relationships, you can then contribute your strengths more fully to your activities, and in support of your personal and professional relationships. Register for three-hour sessions with Polly Tonti, a certified Strengths Strategy Coach, to experience a personally guided process where you will discover the uniqueness of who you are and the many ways you can contribute using your strengths. Whether you are a student looking for clarity about your future or someone looking to change careers, Strengths Strategy coaching sessions are will be invaluable for you.
Contact hours: 3
Not financial aid eligible.

ZLDR-1308 Developing Yourself and Others
0.4 CEU's
Development is critical to attracting and retaining talent, driving employee engagement, preparing future leaders, and ultimately ensuring the success of the organization. Clearly, development is equally important to leaders as well as direct reports. In this course, learners are introduced to a practical process to guide their own and their direct reports' development planning efforts. The outcome is a meaningful development plan that supports the current and future business needs of the organization.
Contact hours: 4
Not financial aid eligible.

ZLDR-1317 Mitigating Unconscious Bias
0.4 CEU's
What is in a first impression? The assumptions and opinions we form about others come from previous experiences, encounters and events in our memory. From the moment that we initially see or hear a person, we form conclusions about who they are and how we feel about them. Unconscious bias bypasses our rational and logical thinking patterns and impacts our networking and long-term relationships with colleagues, clients and acquaintances. In this course, participants will explore the phenomena of unconscious bias and how they can minimize its effects in the workplace and in customer/client relations. Participants will learn how their own unique identities shape their experiences and impact their day-to-day interactions with others. Participants will also learn strategies for minimizing the effects of unconscious bias, which take the form of verbal, nonverbal and environmental micro-messages. Once participants have built a basic understanding of social identity, they will examine the role of these concepts in their communication with others. They will gain an understanding of the difference between the intention of their actions and the impact those actions have on others and learn strategies for addressing negative impacts when they arise. Participants will gain greater confidence in their ability to communicate value and have a positive impact and will develop other skills to help them to create an inclusive workplace where everyone is respected, valued and appreciated.
Contact hours: 4
Not financial aid eligible.
ZLDR-1318 Cultural Intelligence
0.4 CEU's
Culture is all around us. It influences every person's thoughts, beliefs, perceptions, feelings and behaviors. Because our interactions with people are open to a wide range of interpretations that depend upon each individual's cultural background, we must build the skills necessary to effectively communicate across cultural boundaries. Cultural intelligence is a key determinant of how successful you are in communicating across cultures. This course provides an overview of the knowledge, awareness and skills necessary to develop cultural intelligence, thereby increasing the effectiveness of your cross-cultural communication and helping you create respectful, responsive and inclusive experiences for people from different cultural backgrounds.
Contact hours: 4
Not financial aid eligible.

ZLDR-1319 Diversity, Conflict and Communication
0.3 CEU's
Every workplace includes people with different strengths, weaknesses, ideas and communication styles. As a result, even the most collegial of teams will disagree and face conflict. When this conflict is anticipated, strategically approached and addressed with the long-term relationship in mind, it can serve as an immense opportunity for growth and innovation. An important part of developing an inclusive workplace is providing employees with the opportunity to develop skills for effective communication across differences and for resolving diversity conflict in a respectful manner. This course explores differences in communication styles that stem from individual communication preferences and cultural differences. Participants will gain skills and strategies for managing diversity-related conflict.
Contact hours: 3
Not financial aid eligible.

ZLDR-1331 Meetings: Making Them Efficient and Effective
0.4 CEU's
Meetings - we all have them. The bad news? Fortune 500 companies waste an estimated $75 million per year in unproductive meeting time. The good news? Most of the factors that disrupt productivity are in the control of meeting attendees. This training helps develop skills to ensure meetings are an advantage instead of a disadvantage to both employees and organizations alike. Whether running the meeting or simply participating in it, this program provides the knowledge and techniques for making the most of meetings. Among other practices, participants learn to provide a specific meeting focus, identify the signs of an unproductive meeting, generate ideas for creating an environment of fun to encourage participation and prepare a proper agenda.
Contact hours: 4
Not financial aid eligible.

Lean (ZLEN)

ZLEN-1037 LeanOhio Boot Camp: Transforming the Public Sector (Four days)
3.2 CEU's
LeanOhio Boot Camp is an intensive, four-day training course that gets people learning and using Lean methods and tools. The entire program is tailored to the public sector workplace and public sector processes. This is practical training aimed at generating results. Participants will be able to use their new knowledge and skills immediately to make government simpler, faster, better and less costly. The course is filled with government examples and exercises. An in-depth simulation involving a prototypical agency helps participants build their toolkits by way of a real-world situation. It's perfect for people who work in government in any Ohio city, township, county, school district, public university or other governmental agency or organization.
Contact hours: 32
Not financial aid eligible.

Lean Six Sigma (ZLSS)

ZLSS-1003 Lean Six Sigma: Green Belt to Black Belt
8 CEU's
Upon successful completion of this course, participants will be certified as Lean Six Sigma Black Belts. Black Belts are trained experts in Lean, Six Sigma and statistical process control techniques. The LSS Black Belt course teaches the effective use of DMAIC principles needed to improve business processes as well as Lean tools to reduce waste and increase productivity. Participants will gain the necessary tools to lead cross-functional project teams through implementation. This course uses MINITAB statistical software for all project calculations. The course uses MINITAB statistical software for all project calculations; participants should bring their own laptops to download the provided software.
Contact hours: 80
Not financial aid eligible.

ZLSS-1010 Lean and the Supply Chain
0.8 CEU's
This hands-on workshop provides participants with an understanding of problem solving tools and develops a consistent approach to applying them in their daily work. Upon initial explanation of individual tools, the instructor will facilitate the class through their implementation to real world examples.
Contact hours: 8
Not financial aid eligible.

ZLSS-1027 Lean Six Sigma Green Belt for Healthcare - Comprehensive
6.8 CEU's
This course is customized to meet the unique needs of current and future health care professionals. Upon successful completion, participants will be certified as Lean Six Sigma Green Belts in Healthcare. Green Belts in Healthcare work directly with cross-functional project leaders to carry out identified improvement projects using LSS methodologies within a health care organization. Green Belts can implement all of the appropriate tools to lead independent local projects when necessary. This course contains both Yellow and Green Belt content.
Contact hours: 68
Not financial aid eligible.
ZLSS-1032 Lean Six Sigma: Yellow Belt
2.6 CEU's
Lean Six Sigma Yellow Belt training is ideal for all individuals within an organization. Yellow Belts are familiar with the Lean Six Sigma methodologies and tools necessary to identify opportunities for eliminating waste, reducing costs and improving processes, and they have the skills to represent individual departments or organizations as active members on LSS project teams. This blended-learning course includes two in-class sessions that incorporate hands-on activities and discussion. Lunch is provided for both in-class sessions.
Contact hours: 26
Not financial aid eligible.

ZLSS-1033 Lean Six Sigma: Yellow Belt to Green Belt
3.8 CEU's
Upon successful completion of this course, participants will be certified as Lean Six Sigma Green Belts. Green Belts work directly with cross-functional project leaders to carry out identified improvement projects using LSS methodologies and can implement the appropriate tools to lead independent local projects when necessary. This course uses QI Macros software; participants should bring their own laptops to download the provided software.
Contact hours: 38
Not financial aid eligible.

ZLSS-1063 Lean Essentials Boot Camp Basics (Manufacturing)
0.8 CEU's
Participants will learn the foundations and ideology behind Lean methods and how they integrate with organizations to achieve process improvement. Upon completion of this course participants will have a firm understanding of what Lean is, how it can benefit organizations and what some of the basic tools are such as Eight Wastes, 5S and Kaizen Event.
Contact hours: 8
Not financial aid eligible.

ZLSS-1073 Lean Six Sigma Yellow Belt for Health Care
2.6 CEU's
Lean Six Sigma Yellow Belt for Health Care is ideal for all individuals working within a healthcare environment. Yellow Belts are familiar with Lean Six Sigma methodologies and the tools necessary to identify opportunities for eliminating waste, reducing costs and improving processes. This blended-learning course will give you the skills needed to represent individual departments or organizations as an active member on Lean Six Sigma project teams.
Contact hours: 26
Not financial aid eligible.

ZLSS-1077 Lean for Education: Introduction (Online)
0.4 CEU's
Begin with the fundamentals of Lean for Education to understand how Lean principles can be applied to education. In the Lean for Education series, participants will learn the tools necessary to identify and remove waste from a process, sustain the gains made and improve the operation and safety of their organization.
Contact hours: 4
Not financial aid eligible.

ZLSS-1078 Lean for Education: Comprehensive (Online)
0.8 CEU's
Gain a more comprehensive understanding of how to apply process improvement methodology in the education environment. This online course combines introductory topics with additional Lean modules to take your process improvement implementation one step further. Discover how to make the most of Lean methodologies and tools to help your organization see rapid improvements to process flow while eliminating waste.
Contact hours: 8
Not financial aid eligible.

ZLSS-1081 Problem-Solving (Blended learning)
2 CEU's
Problem-solving is a critical skill for any professional in today's business environment. Successful problem-solvers use innovation and creativity, along with powerful tools, to understand a problem and get to the true root causes. This blended learning course combines online modules with in-person classroom sessions to help participants enhance their problem-solving effectiveness by applying creative thinking, logic and analysis to product- and process-related problems.
Contact hours: 20
Not financial aid eligible.

ZLSS-1090 Lean Six Sigma Yellow Belt for Education
2.6 CEU's
This blended learning course is ideal for all individuals within an education environment who wish to become familiar with Lean Six Sigma methodologies and the tools necessary to identify opportunities for eliminating waste, reducing costs and improving processes. Yellow Belts have the skills to represent individual departments or organizations as active members on Lean Six Sigma project teams.
Contact hours: 26
Not financial aid eligible.

ZLSS-1096 Lean Essentials for Healthcare: Foundational Skills (Online)
1.2 CEU's
Process excellence is achieved through understanding, engagement, skills, behaviors, processes and results. Our Lean/Process Improvement curriculum accelerates your drive to peak performance by preparing everyone to contribute to your success and ROI. This interactive, self-paced online course helps you transform culture by enabling you to engage, develop consistent competencies and improve project results while providing the foundational skills of Lean. Learn about Lean and the foundational techniques for Lean, including Eight Wastes, Flow/Pull, Kaizen events and process mapping.
Contact hours: 12
Not financial aid eligible.
ZLSS-1097 Eight Disciplines (8D) Problem-Solving Team Approach
1.2 CEU's
The 8 Disciplines (8D) problem-solving model was implemented by Ford in the 1980s as part of its Team Oriented Problem Solving (TOPS) program. 8D is a robust and structured approach to identifying, correcting and eliminating recurring problems. Though it originated in the automotive sector, it can be applied to any industry. This course provides an overview of the formalized 8D problem-solving approach, utilizing the most frequently used techniques. Students will learn how to select the techniques that work best for different types of problems. Practical exercises will show students how to use the techniques effectively and become a culture of thinkers. 8D provides team synergy and offers strategies to identify the root cause and implement containment actions as well as corrective and preventive action plans to get rid of the problem.
Contact hours: 2.5
Not financial aid eligible.

ZLSS-1101 Breakfast Series: Kick-Starting 5S Into Sustainability
0.25 CEU's
Kick-Starting 5S Into Sustainability - This breakfast seminar provides high-quality professional learning for continuous improvement/quality personnel from all sectors. Session includes continental breakfast and a two-hour workshop. Network with your peers as you discover new ways to improve your business.
Contact hours: 2.5
Not financial aid eligible.

ZLSS-1102 Breakfast Series: A3 Problem-Solving
0.25 CEU's
A3 Problem-Solving - This breakfast seminar provides high-quality professional learning for continuous improvement/quality personnel from all sectors. Session includes continental breakfast and a two-hour workshop. Network with your peers as you discover new ways to improve your business.
Contact hours: 2.5
Not financial aid eligible.

ZLSS-1103 Breakfast Series: Process Mapping
0.25 CEU's
Process Mapping - This breakfast seminar provides high-quality professional learning for continuous improvement/quality personnel from all sectors. Session includes continental breakfast and a two-hour workshop. Network with your peers as you discover new ways to improve your business.
Contact hours: 2.5
Not financial aid eligible.

ZLSS-1104 Breakfast Series: Guidelines for Deployment: What It Takes
0.25 CEU's
Guidelines for Deployment: What It Takes - This breakfast seminar provides high-quality professional learning for continuous improvement/quality personnel from all sectors. Session includes continental breakfast and a two-hour workshop. Network with your peers as you discover new ways to improve your business.
Contact hours: 2.5
Not financial aid eligible.

ZLSS-1106 Good Documentation Practices (GDP)
0.4 CEU's
Designed to lay the foundation for Good Documentation Practices (GDP), this course provides participants with the knowledge and tools needed to bring GDP to their organizations. Participants will learn best practices involved with GDP and how to apply those techniques in written and digital settings. Real-world examples and activities will further cement the retention of knowledge gleaned in this course.
Contact hours: 4
Not financial aid eligible.

ZLSS-1107 Quality and Continuous Improvement Introduction
0.4 CEU's
This course introduces participants to the principles of Continuous Improvement, Lean Six Sigma and Quality — all of which are key tools in the mitigation of process-related issues. Participants will learn about the 7 Wastes and other basic quality methods, the benefits that continuous improvement can bring to their organization, and how to leverage a team approach to solving work problems. An interactive, activity-based learning environment allows participants to practice using the key tools and teaching points covered in this course.
Contact hours: 4
Not financial aid eligible.

ZLSS-1109 Building Process Excellence
0.4 CEU's
Great companies use great systems to achieve their highest goals. Effective leaders understand how quality systems work and the importance of improving processes for successful and reliable results. In this course, participants will discover how to turn good processes into great processes, measure and track outcomes, and enable predictable results that endure beyond the leader.
Contact hours: 4
Not financial aid eligible.

ZLSS-1112 Lean Essentials for Manufacturing: Foundational Skills (Online)
1.2 CEU's
Process Excellence is achieved through understanding, engagement, skills, behaviors, processes and results. Our Lean/Process Improvement curriculum accelerates your drive to peak performance by preparing everyone to contribute to your success and ROI. This interactive, self-paced online course helps you transform culture by enabling you to engage, develop consistent competencies and improve project results while providing the Foundational Skills of Lean.Learn about Lean and its foundational techniques, including SS, 8 Wastes, Flow/Pull, Kaizen events and process mapping.
Contact hours: 12
Not financial aid eligible.

ZLSS-1113 Practical Problem-Solving
0.4 CEU's
Problem-solving is a critical skill for managers in today’s business environment. Successful problem solvers use innovation and creativity along with powerful tools to understand a problem and get to the true root cause. In this session, participants will learn to apply tools to determine the root cause and find effective solutions. The course will also teach participants the best ways to facilitate team problem-solving.
Contact hours: 4
Not financial aid eligible.
ZLSS-1114 Introduction to Six Sigma (Online)  
0.8 CEU's  
This Six Sigma introduction course provides an overview of the movement itself, as well as some DMAIC, control and causal methodologies.  
Contact hours: 8  
Not financial aid eligible.

ZLSS-1115 Six Sigma Black Belt Certification Prep (ASQ CSSBB) (Online)  
13 CEU's  
The Six Sigma Management System has evolved into an integration of business best practices that unleashes the power of the Six Sigma tools and methods to foster focused execution and breakthrough improvements. Using the Six Sigma Management System as the overall context for driving business improvement, this course provides unique insight for Black Belts, Six Sigma leaders and all Six Sigma practitioners on how to apply a wide variety of tools and methods.  
Contact hours: 130  
Not financial aid eligible.

ZLSS-1117 Introduction to Lean for Product Development  
0.8 CEU's  
This hands-on workshop explains the basic principles of lean that apply to non-manufacturing processes such as new product development and R&D. Learn how lean can be applied to R&D to start a lean initiative. Learn how to identify the most important components of a lean innovation process, and where to focus for NPI and R&D. This workshop examines the five stages of the Goodyear Wheel, which represents a proven path for starting and improving a lean initiative.  
Contact hours: 8  
Not financial aid eligible.

ZLSS-1119 Using Lean to be More Innovative: Lean-Driven Innovation  
0.8 CEU's  
Although lean has found widespread application in manufacturing and services, there have been very few sustained implementations in R&D, and even less in the innovation process. Goodyear and many other innovative companies have proven that the benefits of applying lean principles to innovation or R&D — even at the front end of the innovation cycle — can be much higher than what has been accomplished in traditional applications, such as manufacturing and services. Benefits include greater agility, more successful new products, better delivery and much faster speed to market. This workshop is for leaders and practitioners seeking to work more innovatively. Building on the principles of lean product development and lean startups, the program provides a comprehensive framework that helps leaders and organizations figure out what to do, and how to do it, every day.  
Contact hours: 8  
Not financial aid eligible.

ZLSS-1120 Advanced Lean for Product Development  
0.8 CEU's  
This workshop examines the five stages of the “Goodyear Wheel,” which represents a proven path for starting and/or improving a lean initiative. Identification of customer value and waste. Understanding the value stream through gemba observations. Application of flow methods to create a stable and faster process. Application of pull techniques (e.g., kanban) and standardization. Continuous improvement of the lean process and striving for perfection. The workshop also addresses other lean concepts related to lean product and process development and subjects such as organization forms and knowledge management.  
Contact hours: 8  
Not financial aid eligible.

ZLSS-1122 Minitab Refresher for Lean Six Sigma Green Belts  
0.4 CEU's  
Haven't used your Green Belt skill sets in some time? Need to brush up on your Green Belt skills and knowledge, Minitab or QI Macros? Preparing to enroll in a Black Belt course and need a refresher? Brush up your knowledge and application skills in this one-day refresher course that covers the basic Green Belt tools and concepts needed for an effective project. This course is designed for Lean Six Sigma Green Belts and Continuous Improvement Professionals with knowledge of statistical tools and methods. Note: This is not a certification course.  
Contact hours: 4  
Not financial aid eligible.

ZLSS-1124 Introduction to Agile Project Management  
0.8 CEU's  
This course provides an introduction to Agile Program Management and PMI Program Management standards. Participants will learn how to manage a program using Agile principles and discover how Agile activities and techniques are used to implement Project Management Body of Knowledge (PMBOK) processes. The course ends with exercises in managing project scenarios based upon program results.  
Contact hours: 8  
Not financial aid eligible.

ZLSS-1125 Introduction to Scrum  
0.8 CEU's  
Get practical experience in Agile project management. Review the basics of Agile Scrum practices and understand how to complete an agile project. Course begins with the history of agile development and ends with a review of the specific behaviors expected of an Agile ScrumMaster. Participants are encouraged to submit a description of a project they wish to use for comparison to an agile project. Upon completion of this course, participants will be able to provide a basic overview of Agile Scrum that includes roles, basic practices, comparisons to waterfall development and basic scrum techniques.  
Contact hours: 8  
Not financial aid eligible.
ZLSS-1126 PMI Agile Certification Prep (PMI-ACP) with Scrum@Scale
2.4 CEU's
Learn how Agile Project Management meets the standards of the PMI Project Management Body of Knowledge (PMBOK), beginning with an introduction to PMBOK standards and descriptions of the agile activities and techniques used to implement PMBOK processes. This course prepares participants for the PMP exam as well as the Scrum@Scale certification exam. Note: This course satisfies the 35-hour requirement for the PMP exam as well as the Scrum Alliance and Scrum@Scale requirements for the Scrum@Scale exam (issued to participants at the end of the course).
Contact hours: 24
Not financial aid eligible.

ZLSS-1127 Certified ScrumMaster (CSM)
1.6 CEU's
The Certified ScrumMaster® (CSM) course is a two-day, entry-level course taught by a Certified Scrum Trainer®. The CSM course covers all the basics of Scrum so that participants can begin to fulfill the ScrumMaster role.
Contact hours: 16
Not financial aid eligible.

ZLSS-1128 Project Management Professional (PMP) Certification Exam Prep
3.5 CEU's
This course uses a proven experiential learning methodology to help participants acquire the skills, knowledge, and confidence needed to pass the PMP certification exam. Utilize and build upon your existing knowledge base and experience with skills development and focused memorization exercises. The PMBOK® Guide will be used in class as a study reference.
Contact hours: 35
Not financial aid eligible.

ZLSS-1129 Certified Associate Project Manager (CAPM) Exam Prep
2.4 CEU's
This course is intended to prepare eager, intelligent, disciplined young professionals for entry-level project management positions. The goal is to teach participants the skills and knowledge needed to obtain Certified Association Project Management (CAPM®) Certification from PMI. The course opportunities for participants to ask questions and interact with others pursuing the same goal. CAPM certified individuals have greatly increased chances for impacting the strategic growth of their organization and building their leadership capacity.
Contact hours: 24
Not financial aid eligible.

ZLSS-1130 Celemi Cayenne for Project Success: Preparing to Kick Off a Project Simulation
0.8 CEU's
Celemi Cayenne™ is for those who want to increase staff commitment and improve alignment on a project. Participants will gain an understanding of critical success factors in project work and, by competing in teams, establish proactive behavior and effective communication among project team members.
Contact hours: 8
Not financial aid eligible.

ZLSS-1131 Introduction to Project Management
0.8 CEU's
This course teaches participants the fundamentals of project management, including key concepts, terminology and moving from project selection to project closure. Learn the differences between projects, programs and portfolios and apply project life cycles to real-world examples.
Contact hours: 8
Not financial aid eligible.

ZLSS-1132 Certified Associate in Project Management (CAPM) Exam Prep (Online)
13 CEU's
This online course provides entry-level project managers with the knowledge and skills necessary to successfully complete the Project Management Institute's nationally recognized Certified Associate in Project Management (CAPM) exam. This credential is considered the standard of excellence in the field of project management and is often a requirement for jobs in the field. This comprehensive course uses learning activities, practice exams and assignments to help students prepare for and successfully complete the CAPM exam.
Contact hours: 130
Not financial aid eligible.

ZLSS-1133 Project Management Professional (PMP) Exam Prep (Online)
13 CEU's
This online course provides experienced project managers with the knowledge and skills necessary to successfully complete the Project Management Institute's nationally recognized Project Management Professional (PMP) exam. This credential is considered the standard of excellence in the field of project management and is often a requirement for jobs in the field. This comprehensive course uses learning activities, practice exams and assignments to help students prepare for and successfully complete the PMP exam.
Contact hours: 130
Not financial aid eligible.

ZLSS-1134 Introduction to Project Management Basics (Online)
1 CEU's
This online Project Management skills training course delivers the tools, techniques and practices you need to understand projects and boost your personal value in the workplace. This training is a major step in preparing for the PMI CAPM and PMP exams.
Contact hours: 10
Not financial aid eligible.

ZLSS-1135 Fundamentals of Project Management
1.6 CEU's
This course teaches new project managers and supervisors the basic practical skills needed to successfully manage and complete a project. Learn how to apply the proper processes, techniques and tools to plan, execute, monitor and close a project. Explore the life cycle of a project, from initiation to planning to execution and closing.
Contact hours: 16
Not financial aid eligible.
Logistics and Distribution (ZLDA)

ZLDA-1012 Powered Industrial Truck (PIT)/Forklift Operator Training
0.8 CEU's

This 8 hour introductory course provides initial or continuing training for the operation of powered industrial trucks. Training is focused on safety and basic knowledge. Classroom and hand-on training are provided in warehouse conditions.

Contact hours: 8
Not financial aid eligible.

ZLDA-1013 Powered Industrial Truck (PIT)/Forklift Operator Training
Advanced
0.8 CEU's

This eight hour Powered Industrial Truck (PIT) /Forklift Operator Training Advanced class provides continued education training opportunities for the operation of powered industrial trucks in line with industry standards. The course, based on OSHA 1910.78 objectives, is safety and basic knowledge focused, and also includes hands-on experience operating a multitude of power industrial equipment. Classroom and hands-on training are provided in a simulated warehouse condition, which includes operating an order picking high level truck, and a Turret narrow isle truck.

Contact hours: 8
Not financial aid eligible.

Marketing (MARK)

MARK-1080 Social Media Marketing
3 Credits

[This course is crosslisted as BADM-1080. Credit can only be earned once for either course.] Examines how marketers use verbal and visual content to convey value, build brands, and connect with customers over different social media platforms. Introduction to the most popular platforms, analysis of social media campaigns, and projects to create a social media marketing campaign.

Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

MARK-1090 Social Media Content Strategies
3 Credits

[This course is crosslisted as BADM-1090. Credit can only be earned once for either course.] Generate targeted digital content messages linked to marketing objectives and brand voice. This course focuses on optimizing social media platforms to market to and communicate with customers creating engagement and increasing brand awareness.

Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing, or MARK-1080 Social Media Marketing.

MARK-1820 Independent Study in Marketing
1-3 Credits

Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MARK-2010 Principles of Marketing
3 Credits

Marketing activities, analysis, strategies, and decision making in the context of other business functions. Topics include: integration of product, price, promotion, and distribution activities; research and analysis of markets, environments, competition, and customers; market segmentation and selection of target market, and emphasis on behavior and perspectives of consumers and organizational customers. Planning and decision making for products and services in profit and nonprofit, domestic, and global settings.

Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business and ECON-2000 Principles of Microeconomics.
OAN Approved: OBU006.

MARK-2080 Social Media Analytics
3 Credits

[This course is crosslisted as BADM-2080. Credit can only be earned once for either course.] Examine terminology, trends, importance and effectiveness of digital marketing analytics using a variety of platforms. Students are exposed to benefits and limitations of digital marketing data compared to traditional methods of marketing research. They will learn how social media analytics, Search Engine Optimization (SEO) and social listening data can be used to identify consumer behaviors while improving marketing strategy and a consumer’s perception of a brand.

Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing or MARK-1080 Social Media Marketing.

MARK-2090 Digital Marketing Design
3 Credits

[This course is crosslisted as BADM-2090. Credit can only be earned once for either course.] This course is designed to build students social media marketing skills by utilizing local businesses to create a hands-on experience working on a social media marketing plan. Activities include, social media listening and auditing, search engine optimization (SEO) evaluation, content creation, analytics and planning.

Lecture: 3 hours
Prerequisite(s): BADM-1080 Social Media Marketing or MARK-1080 Social Media Marketing.

MARK-2261 Salesmanship and Promotional Strategies
3 Credits

Study of Salesmanship, Sales Promotions, Public Relations, and Advertising needed to reach and communicate to a target audience. Focusing on the process of integrated marketing communications in an ethical, socially responsible environment.

Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing.

MARK-2270 Principles of Advertising
3 Credits

Introduction to advertising as element of promotion mix in marketing. Focuses on strategic, quantitative, and creative processes by which advertising message is planned and produced.

Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing or BADM-1080 Social Media Marketing.
OAN Approved: OCM012.
MARK-2500 Business-to-Business/Organizational Marketing
3 Credits
Principles and practices involved in marketing of materials, equipment, supplies, and services to organizational markets, such as manufacturers, resellers, service providers, institutions, and the government. Focus on unique characteristics of organizational market and how to profitably sell in this market by developing proper marketing mix. Includes product management, pricing policies, channels of distribution, and promotional practices.
Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing.

MARK-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Marketing complements and exceeds requirements and expected outcomes for an existing MARK 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in Marketing, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

MARK-2820 Advanced Independent Study/Research in Marketing
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MARK-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application.

Massage Therapy (MT)

MT-1100 Introduction to Massotherapy
3 Credits
Survey of masotherapy. History of massage, theory and principles of massage, including basic physiological effects, therapeutic applications, contraindications, indications for referral, scope of practice, code of ethics, credentialing and licensing, law and legislation. Training provides hands-on demonstrations by instructor on some basic techniques of massage.
Lecture: 3 hours
Prerequisite(s): None.

MT-1242 Somatic Studies I
3 Credits
Study of human anatomy and physiology for students of masotherapy. Specific emphasis on fundamental concepts of human body, chemical level, cellular level, tissue, integumentary system, skeletal system and articulations.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score; and ENG-0980 Language Fundamentals I, or appropriate English placement score, or departmental approval.

MT-1272 Somatic Studies II
3 Credits
Study of human anatomy and physiology for students of massage therapy. Specific emphasis on fundamental concepts of muscular system, nervous system, spinal cord, nerve plexus, brain, sensory and motor pathways, special senses, autonomic nervous system, endocrine, cardiovascular, lymphatic, respiratory, digestive, metabolism, urinary, acid-base balance and reproductive systems.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MT-1242 Fundamentals of Somatic Studies I, or departmental approval.

MT-1280 Somatic Studies III
2 Credits
Study of human anatomy and physiology for students of massage therapy. Specific emphasis on fundamental concepts of circulatory system, lymphatic system, respiratory system, digestive system, metabolism, urinary system, acid-base balance and reproductive system.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MT-1272 Fundamentals of Somatic Studies II, or departmental approval.

MT-1302 Massage Therapy I
2 Credits
History of massage with emphasis on modern massage methodologies. Examines theories and principles of massage, basic physiological effects, and indications and contraindications for massage. Scope of practice, code of ethics, boundary issues, credentialing and licensing, massage law and legislation discussed. Study and practice of both Beck and Fritz’s techniques for manipulations of massage. Basic full-body massage, proper hygiene and sanitation practices, position and draping client, and proper body mechanics. Introduction to SOAP documentation.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English placement test; and MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate score on Math placement test.
MT-1312 Applied Musculo-Skeletal Anatomy
3 Credits
Extensive practice in learning to palpate all bony landmarks of trunk and extremities; muscle, ligament, and tendon palpation. Introduction to postural analysis with practice in taking and interpreting postural measurements.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English placement test and MATH-0910 Basic Arithmetic and Pre-algebra, or appropriate score on Math placement test.

MT-1321 Functional Assessment in Massage Therapy
2 Credits
Recognizing and assessing common structural and postural deviations and common soft tissue injury to muscle, tendon, joint capsule, ligament, bursa, fascia and nerve in order to determine appropriateness of massage therapy.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MT-1302 Massage Therapy I and MT-1312 Applied Musculo-Skeletal Anatomy, or departmental approval.

MT-1331 Massage Therapy II
3 Credits
Documentation for massage therapy sessions through SOAP charting; interviewing and observational skills; in-depth study of the physiological effects and therapeutic applications for each of the massage procedures and its respective subdivisions. Demonstrate massage procedures with patient in seated, side lying, prone and supine positions. Study of dysfunction resulting from poor body mechanics. Assessment and therapeutic treatment using Kellogg and Beck techniques and positional release. Introduction to theory and practice of trigger point and myofascial release therapy.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MT-1302 Massage Therapy I and MT-1312 Applied Musculo-Skeletal Anatomy, and MA-1010 Introduction to Medical Terminology, and MT-1272 Somatic Studies II or concurrent enrollment; or departmental approval.

MT-1820 Independent Study/Research in Massotherapy
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

MT-2201 Massage Modalities and Career Paths
2 Credits
Introductory study and overview of theoretical and clinical massage in a medical settings. Experience delivery of touch therapy to the frail and hospitalized patient. Introductory study and overview of massage modalities such as: Hot stone, Lymphatic Drainage, Aromatherapy, Cranial Sacral, Energy concepts, Animal massage. Explore Career paths in a variety of setting as well as mock interviews.
Lecture: 1.5 hour. Laboratory: 1.5 hour
Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I, and MT-2360 Massage Therapy Clinic II or concurrent enrollment; and concurrent enrollment in MT-1280 Somatic Studies III.

MT-2301 Pathology for Massage Therapists
3 Credits
Introduction to disease and basic mechanisms of disease for massage therapists. Diseases of skin, musculoskeletal system, nervous and endocrine systems. Other diseases to include cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive, and immune systems. Role of stress in disease, mental, emotional and genetic.
Lecture: 3 hours
Prerequisite(s): MT-1240 Fundamentals of Somatic Studies for Massage Therapists I, or departmental approval.

MT-2311 Advanced Massage Therapy
3 Credits
Assessment and treatment of musculoskeletal dysfunction based on trigger point therapy, myofascial release, and muscle energy approaches. Documentation of patient session and patient education. Qualifies for Ohio State Medical Board CMTE’s.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MT-1280 Somatic Studies III, and MT-1321 Functional Assessment in Massage Therapy, and MT-2853 Massage Therapy Practicum II, and MT-2200 Medical Massage, and MT-2701 Comprehensive Somatic Studies for Massage Therapists, and MT-2991 Comprehensive Massage Therapy, or departmental approval.

MT-2350 Massage Therapy Clinic I
3 Credits
Student clinical experience. Massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Basic business communication and massage office policies, procedures, and practices. Patient education.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II, or concurrent enrollment; or departmental approval.

MT-235A Massage Therapy Clinic I - A
2 Credits
Student clinical experience. Massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Basic business communication and massage office policies, procedures and practices. Patient education. Important: MT-235A and MT-235B together meet the requirement for completion of MT-2350 Massage Therapy Clinic I.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II, or concurrent enrollment; or departmental approval.
MT-235B Massage Therapy Clinic I-B
1 Credit
Continuation of clinical experience begun in MT-235A. Students will continue the massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Basic business communication and massage office policies, procedures and practices. Patient education. Important: MT-235A and MT-235B together meet the requirement for completion of MT-2350 Massage Therapy Clinic I.
Laboratory: 3 hours
Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Muscuol-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II or concurrent enrollment; and MT-235A Massage Therapy Clinic I, and MT-236A Massage Therapy Clinic II.

MT-2360 Massage Therapy Clinic II
3 Credits
Continuation of student clinical experience. Massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and/or palpation skills. Demonstrate knowledge of pharmacology for massage therapists. Study of hydrotherapy. In-depth study of massage business and law, including scope of practice, business communication and massage office policies, procedures and practices.
Lecture: 1 hour
Laboratory: 6 hours
Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; and MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III or concurrent enrollment; or departmental approval.

MT-236A Massage Therapy Clinic II-A
2 Credits
Continuation of student clinical experience. Massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and palpation skills. Pharmacology for massage therapists. Study of hydrotherapy. In-depth study of massage business and law, including scope of practice, business communication and massage office policies, procedures and practices.
Important: MT-236A and MT-236B together meet the requirement for completion of MT-2360 Massage Therapy Clinic II.
Lecture: 1 hour
Laboratory: 3 hours
Prerequisite(s): MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III or concurrent enrollment; and MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; or MT-235A Massage Therapy Clinic I-A and MT-235B Massage Therapy Clinic I-B; or departmental approval.

MT-236B Massage Therapy Clinic II-B
1 Credit
Continuation of student clinical experience begun in MT-236A. Students will continue the massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and/or palpation skills. Pharmacology for massage therapists. Study of hydrotherapy. In-depth study of massage business and law, including scope of practice, business communication and massage office policies, procedures and practices. Important: MT-236A and MT-236B together meet the requirement for completion of MT-2360 Massage Therapy Clinic II.
Laboratory: 3 hours
Prerequisite(s): MT-1272 Somatic Studies II, and MT-1280 Somatic Studies II or concurrent enrollment; and MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; or MT-235A Massage Therapy Clinic I-A and MT-235B Massage Therapy Clinic I-B; or departmental approval.

MT-2370 Supplemental Massage Therapy Clinic
1 Credit
Supplemental clinical experience begun in MT-2350, MT-2360, MT-235A, MT-235B, MT-236A, and MT-236B. Massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and palpation skills. Demonstrate knowledge of pharmacology for massage therapists. Study of hydrotherapy. In-depth study of massage business and law, including scope of practice, business communication and massage office policies, procedures and practices.
Laboratory: 3 hours
Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; and MT-1272 Somatic Studies II, and MT-1280 Somatic Studies II, or departmental approval.

MT-2380 Advanced Massage Therapy Clinic
3 Credits
Review and demonstrate competency in SOAP charting. Assessment and treatment of patients in the clinic. Treatment modalities include trigger point therapy, myofascial release, and muscle energy approaches. Review of complementary modalities including hot stone massage, aromatherapy and reflexology. Advancing skills in business communication and office management in a clinical setting. Qualifies for Ohio State Medical Board CMTE’s.
Laboratory: 9 hours
Prerequisite(s): MT-1321 Functional Assessment in Massage Therapy and MT-2200 Medical Massage and MT-2311 Advanced Massage Therapy, or concurrent enrollment; or departmental approval.
MT-2701 Comprehensive Somatic Studies for Massage Therapists
1 Credit
Quizzes and mock exam are given to prepare for State Medical Board of Ohio licensure exam. Comprehensive exam given at the end of course must be passed to be recommended for State Medical Board of Ohio licensure exam. Comprehensive study to summarize human anatomy and physiology for students of massotherapy. Special emphasis on review of key concepts of human body - its introduction, six levels of organization and eleven systems of the body. Students develop in-depth knowledge of anatomy and physiology of human body.
Lecture: 1 hours
Prerequisite(s): Departmental approval: completion of all course work necessary to sit for the State Medical Board of Ohio licensure exam with a grade of "C" or higher, and recommendation of Massage Therapy Program Manager.

MT-2991 Comprehensive Massage Therapy
1 Credit
Capstone course in Massage Therapy. Comprehensive review of massage techniques and theory with major focus on writings of Kellogg. Includes series of intensive training sessions to prepare students for the Ohio State Medical Board exam for licensure. Review of topics necessary to ensure success as professional L.M.T.'s. Student must pass comprehensive exam given at the end of course in order to be recommended to sit for Ohio Medical Board exam for licensure and demonstrate minimally accepted competency in performance of a therapeutic massage on a licensed massage therapist.
Lecture: 1 hours
Prerequisite(s): Departmental approval: completion of all course work necessary to sit for State Medical Board Licensure Exam, and recommendation of Massage Therapy Program Manager.

Mathematics (MATH)

MATH-0800 Developmental Special Topics in Mathematics
1-3 Credits
Study of selected developmental topics or current issues in mathematics. Provides student an opportunity to explore various topics in greater detail. Repeatable for different topics. May not be applied toward elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

MATH-0830 Mastering MATH-0910
2 Credits
Discipline specific student success course includes: math study skills, overcoming math anxiety, critical thinking skills, personal self-management, calculator usage and other topics which assist students in identifying and overcoming barriers to success in mathematics. Includes additional instruction and practice in MATH-0910 concepts and skills.
Lecture: 2 hours
Prerequisite(s): Concurrent enrollment in MATH-0910 Basic Arithmetic and Pre-Algebra.

MATH-0855 Mastering MATH-0955
2 Credits
Lecture: 2 hours
Prerequisite(s): Concurrent enrollment in MATH-0955 Beginning Algebra.

MATH-0910 Basic Arithmetic and Pre-Algebra
3 Credits
Includes real numbers (integers, fractions, signed fractions, and signed decimals) and operations (addition, subtraction, multiplication, and division) along with the use of order of operations, ratio rates, proportion, percent, English system of measurement, introduction to basic algebra and solving basic algebraic equations, and perimeter and area of basic geometric shapes. Includes applications and activities to build skills in estimation and problem solving. Grading for Math 0910 is P for Pass or NP for No Pass.
Lecture: 3 hours
Prerequisite(s): Sufficient score on assessment test, or departmental approval.

MATH-0955 Beginning Algebra
6 Credits
First of two developmental mathematics courses. Topics include simplifying basic algebraic expressions in one variable, solving one variable linear equations, literal equations, linear inequalities in one variable, graphing linear inequalities in one variable, compound inequalities, graphing compound inequalities, determining relation, domain, range of functions graphically and algebraically, performing operations on functions, introducing the rectangular coordinate system, determining equations of lines, graphing lines and two variable inequalities, solving systems of two variable equations and inequalities, performing algebraic operations and simplifying of polynomials involving rules of exponents, and scientific notation. Includes applications and activities to build skills in problem solving.
Lecture: 6 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or sufficient score on math placement test, or departmental approval.
MATH-0965 Intermediate Algebra
6 Credits
Second of two developmental mathematics courses. Topics include factoring, solving equations by factoring, rational expressions, radical expressions, systems of three linear equations in three variables, radical equations, expressions with rational exponents, equations with rational exponents, quadratic equations involving the Zero Product Property, Square Root Property, Completing the Square, and the Quadratic Formula, graphing quadratic functions, exponential expressions, and graphing exponential functions. Includes applications and activities to build skills in problem solving.
Lecture: 6 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or sufficient score on math placement test; or departmental approval. MATH-0960 and MATH-0980 taken prior to Fall 2016 will also meet the prerequisite requirement for this course. Please note: MATH-0965 Intermediate Algebra will NOT count as a college-level course (MATH-1270 or MATH-1280) due to the State of Ohio's new definition of a credit-bearing math course. Although credit is earned for 0 level courses, the credit does not apply to meet completion requirements of any certificate or degree at Cuyahoga Community College.

MATH-0990 Math Literacy for College Students
4 Credits
Course integrates numeracy, proportional reasoning, algebraic reasoning, and functions. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of ways. Contexts include personal finance, medical literacy, and citizenship.
Lecture: 4 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra; or sufficient score on placement test; or departmental approval.

MATH-1100 Mathematical Explorations
3 Credits
Survey of mathematical topics. Introduction to basic concepts of problem solving, set theory, logic, number theory, and college geometry.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra; or MATH-0990 Math Literacy for College Students; or sufficient score on Math assessment test; or departmental approval: equivalent coursework. Note: MATH-0950 Beginning Algebra I taken prior to Fall 2016 will also be accepted to meet the prerequisite requirement for this course.
OAN Approved: TMMSL.

MATH-1190 Algebraic and Quantitative Reasoning
3 Credits
Applications and appreciation of quantitative literacy. Interpreting information from real-world sources to solve problems using numerical, algebraic, and graphical knowledge. Various uses of mathematical models are explored, and statistical thinking is developed. Contexts include financial, environmental, social, and public and personal health.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra; or MATH-0990 Math Literacy for College Students; or sufficient score on Math Placement Test; or departmental approval.
OAN Approved: TMM011.

MATH-1240 Contemporary Mathematics
3 Credits
Applications of mathematics in contemporary life. Introduction to financial literacy, dimensional analysis as applied to measurement and unit conversions, graph theory, topics in probability and descriptive statistics.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or sufficient score on Math assessment test; or departmental approval: equivalent coursework. Note: MATH-0960 or MATH-0980 taken prior to Fall 2016 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMMSL.

MATH-1370 Mathematics for Elementary and Middle School Teachers I
4 Credits
First of two semester sequence designed for elementary and middle school education majors. Emphasis on understanding ideas and concepts. Includes sets and numeration, whole numbers, number theory, fractions, decimals, integers, rational and real numbers, problem solving strategies, and historical topics. Highlights applications to classroom, projects, and use of current technology, including scientific/graphing calculators and computers.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra, or sufficient score on Math placement test, or departmental approval: equivalent coursework. Note: MATH-1200 or 1280 taken prior to Fall 2016, or MATH-1270 taken prior to Summer 2017 will also be accepted to meet prerequisite requirements for this course.

MATH-1380 Mathematics for Elementary and Middle School Teachers II
4 Credits
Second of two semester sequence designed for elementary and middle school education majors. Emphasis on understanding ideas and concepts. Includes statistics, probability, measurement, geometric shapes, Euclidean geometry, coordinate geometry, transformational geometry, problem-solving strategies, and historical topics. Highlights applications to classroom, projects, and use of current technology, including scientific/graphing calculators and computers.
Lecture: 4 hours
Prerequisite(s): MATH-1370 Mathematics for Elementary and Middle School Teachers I, or departmental approval: equivalent coursework.
OAN Approved: TTMSL.

MATH-1410 Elementary Probability and Statistics I
3 Credits
First of two-semester introductory sequence in probability and statistics. Intended for students majoring in liberal arts, business, sciences, engineering, and education. Includes study of descriptive statistics, elementary probability, probability distributions, normal distribution, binomial distribution, sampling concepts, sampling distribution of sample mean, estimation, and hypothesis testing.
Lecture: 3 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or MATH-1240 Contemporary Mathematics, or sufficient score on Math Placement Test, or departmental approval: equivalent coursework. Note: MATH-1200, 1250, or 1280 completed prior to Fall 2016 or MATH-1270 completed prior to Summer 2017 will also meet prerequisite requirements for this course.
OAN Approved: TMM010.
MATH-1420 Elementary Probability and Statistics II
3 Credits
Second of two-semester introductory sequence in probability and statistics. Intended for students majoring in liberal arts, business, sciences, engineering, and education. Includes study of Chi-square distribution and F distribution and their applications, inferences on variances and proportions, comparing two means, categorical data, correlation, simple and multiple regression, analysis of variance, nonparametric tests and use of statistical software packages.
Lecture: 3 hours
Prerequisite(s): MATH 1410 Elementary Probability and Statistics I, or departmental approval: equivalent coursework.
OAN Approved: TMMSL.

MATH-1470 Modern Mathematics for Business and Social Science I
4 Credits
First of two-semester sequence. Topics include functions, mathematics of finance, linear systems, matrix algebra and linear programming with applications in business and social sciences.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra, or appropriate score on Math Placement Test, or departmental approval: equivalent coursework. Note: MATH-1200 or 1280 completed prior to Fall 2016, or MATH-1270 completed prior to Summer 2017 will also meet prerequisite requirements for this course.
OAN Approved: TMMSL.

MATH-1480 Modern Mathematics for Business and Social Sciences II
4 Credits
Second of a two-semester sequence. Topics include the fundamentals of differential and integral calculus, with applications in business and social sciences.
Lecture: 4 hours
Prerequisite(s): MATH-1470 Modern Mathematics for Business and Social Sciences I, or departmental approval: equivalent coursework. OAN Approved: TMMSL.

MATH-1490 Business Probability and Statistics I
3 Credits
First of two-semester introductory sequence in business probability and statistics. Intended for students majoring in business. Application of statistical methods to business and economic problems. Topics include study of descriptive statistics, elementary probability, random variables and probability distributions, normal distribution, binomial distribution, sampling concepts, sampling distribution of sample mean, estimation, and hypothesis testing.
Lecture: 3 hours
Prerequisite(s): MATH-1470 Modern Mathematics for Business and Social Sciences I, or departmental approval: equivalent coursework. OAN Approved: TMMSL and OBU009 (Course 1 of 2, both must be taken).

MATH-1500 Business Probability and Statistics II
3 Credits
Second of two-semester introductory sequence in probability and statistics, intended for students majoring in business. Includes study of inferences on means and proportions, analysis of variance, correlation, simple and multiple linear regression models, business applications and decision making, and the use of statistical software.
Lecture: 3 hours
Prerequisite(s): MATH-1490 Business Probability and Statistics I, or departmental approval: equivalent coursework.
OAN Approved: TMMSL and OBU009 (Course 2 of 2, both must be taken).

MATH-1520 College Algebra
4 Credits
Topics include extensive function (linear, quadratic, polynomial, rational, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or sufficient score on math placement test; or departmental approval for equivalent coursework. Note: MATH-1200 or MATH-1280 taken prior to Fall 2016 or MATH-1270 taken prior to Summer 2017 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMM001 and TMM002 (1 of 2 courses, both must be taken).

MATH-152H Honors College Algebra
4 Credits
Topics include extensive function (linear, quadratic, polynomial, rational, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or sufficient score on math placement test; or departmental approval for equivalent coursework. Note: MATH-1200 or 1280 taken prior to Fall 2016, or MATH-1270 taken prior to Summer 2017 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMM001 and TMM002 (1 of 2 courses, both must be taken).

MATH-1530 College Algebra
4 Credits
Topics include extensive function (linear, quadratic, polynomial, radical, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or sufficient score on math placement test; or departmental approval for equivalent coursework. Note: MATH-1200 or MATH-1280 taken prior to Fall 2016, or MATH-1270 taken prior to Fall 2016 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMM001 and TMM002 (1 of 2 courses, both must be taken).

MATH-153H Honors College Algebra
4 Credits
Topics include extensive function (linear, quadratic, polynomial, radical, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.
Lecture: 4 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or sufficient score on math placement test; or departmental approval for equivalent coursework. Note: MATH-1200 or 1280 taken prior to Fall 2016, or MATH-1270 taken prior to Summer 2017 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMM001 and TMM002 (1 of 2 courses, both must be taken).

MATH-1540 Trigonometry
3 Credits
This course is part of a two semester sequence. Topics include trigonometric functions and their values for all angles, vectors and oblique triangles, graphs of trigonometric functions, trigonometric identities and equations. Applications and activities to build skills in problem solving included.
Lecture: 3 hours
Prerequisite(s): MATH-1530 College Algebra or sufficient score on math placement test; or departmental approval for equivalent coursework. Note: MATH-1275 MATH-1280, MATH-1521, or MATH-152H taken prior to Fall 2016 will also be accepted to meet prerequisite requirements for this course.
OAN Approved: TMM003 and TMM002 (2 of 2 courses, both must be taken).
MATH-154H Honors Trigonometry
3 Credits
Topics include trigonometric functions and their values for all angles, vectors and oblique triangles, graphs of trigonometric functions, trigonometric identities and equations. Applications and activities to build skills in problem solving included. Emphasis on more challenging trigonometric concepts in real-world settings are found in the form of projects and in-class presentations.
Lecture: 3 hours
Prerequisite(s): MATH-1530 College Algebra or MATH-153H Honors College Algebra; or departmental approval. Note: MATH-1275 MATH-1280, MATH-1521, or MATH-152H taken prior to Fall 2016 will be accepted to meet prerequisite requirements for this course
OAN Approved: TMM003, and TMM002 (2 of 2 courses, both must be taken).

MATH-1580 Precalculus
5 Credits
Intensified course designed to prepare students for calculus. Study of real numbers, equations and inequalities, functions and graphs, sequences and series, theory of equations, systems of equations and inequalities, mathematical induction, conic sections, exponential and logarithmic functions, trigonometric functions and complex numbers. Applications and activities to build skills in problem solving also included.
Lecture: 5 hours
Prerequisite(s): Sufficient score on assessment test, or departmental approval: previous trigonometry or algebra/trigonometry course in high school or college.
OAN Approved: TMM002

MATH-1610 Calculus I
5 Credits
First of three-semester sequence designed for math, science, and engineering majors. Includes study of Cartesian coordinates, functions and graphs, limits and continuity, differentiation of algebraic and trigonometric functions, applications of derivative, differentials and antiderivatives, and definite integral and its applications.
Lecture: 5 hours
Prerequisite(s): MATH-1540 Trigonometry or MATH-154H Honors Trigonometry, or MATH-1580 Precalculus, or appropriate score on Math Placement Test, or departmental approval: equivalent coursework.
OAN Approved: TMM005 and TMM017 (1 of 2 courses, both must be taken).

MATH-161H Honors Calculus I
5 Credits
First of a three-semester sequence designed for math, science, and engineering majors. Focuses on conceptual understanding of logarithmic and exponential functions, trigonometric and inverse trigonometric functions, and hyperbolic and inverse hyperbolic functions, develops their properties, characteristics, derivatives, and graphs. Includes techniques of integration, polar coordinates, conic sections, limits of indeterminate forms of quotients of functions, improper integrals, and sequences and series. Emphasizes proofs of theorems and solving challenging examples, exercises, and application problems. Stresses development of research projects. Underscores cooperative work, students presentation of one of the course projects, and use of technology: graphics calculators and computers.
Lecture: 5 hours
Prerequisite(s): MATH-161H Honors Calculus I, or departmental approval: equivalent coursework.
OAN Approved: TMM006, and TMM017 (2 of 2 courses, both must be taken).

MATH-1620 Calculus II
5 Credits
Second of three-semester sequence. Includes study of logarithmic and exponential functions, trigonometric and inverse trigonometric functions, and hyperbolic and inverse functions; techniques of integration, parametric and polar coordinates, conics, indeterminate forms, improper integrals; and sequences and series.
Lecture: 5 hours
Prerequisite(s): MATH-1610 Calculus I, or departmental approval: equivalent coursework.
OAN Approved: TMM006, and TMM017 (2 of 2 courses, both must be taken).

MATH-162H Honors Calculus II
5 Credits
Second of three-semester sequence designed for mathematics, science, business, and engineering majors. Focuses on conceptual understanding of logarithmic and exponential functions, trigonometric and inverse trigonometric functions, and hyperbolic and inverse hyperbolic functions, develops their properties, characteristics, derivatives, and graphs. Includes techniques of integration, polar coordinates, conic sections, limits of indeterminate forms of quotients of functions, improper integrals, and sequences and series. Emphasizes proofs of theorems and solving challenging examples, exercises, and application problems. Stresses development of research projects. Underscores cooperative work, students presentation of one of the course projects, and use of technology: graphics calculators and computers.
Lecture: 5 hours
Prerequisite(s): MATH-161H Honors Calculus I, or departmental approval: equivalent coursework.
OAN Approved: TMM006, and TMM017 (2 of 2 courses, both must be taken).

MATH-179H Honors Contract in Mathematics
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Other Required Hours: 0.
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

MATH-1800 Special Topics in Mathematics
1-3 Credits
Study of selected topics or current issues. Provides student an opportunity to explore various topics in greater detail. Repeatable for different topics. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.
MATH-1820 Independent Study/Research in Mathematics
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MATH-182H Honors Independent Study/Research in Mathematics
1-3 Credits
Honors-level directed individual study in Math. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors course credits.

MATH-2010 Introduction to Discrete Mathematics
4 Credits
Foundation course in discrete mathematics with applications. Topics include logic, methods of proof, elementary number theory, set theory, functions, efficiency of algorithms, and mathematical induction.
Lecture: 4 hours
Prerequisite(s): MATH-1530 College Algebra or MATH-153H College Algebra or MATH-1580 Precalculus; or sufficient score on assessment test; or departmental approval: equivalent coursework.
OAN Approved: TMMSL.

MATH-2310 Introduction to Linear Algebra
3 Credits
Includes study of vector spaces, linear transformations and matrices, determinants, invariant subspaces, eigenvalues and eigenvectors, and applications.
Lecture: 3 hours
Prerequisite(s): MATH-1620 Calculus II, or departmental approval: equivalent coursework.
OAN Approved: TMM019 and OMT019.

MATH-231H Honors Calculus III
4 Credits
Third of three-semester sequence. Includes vectors, parametric equations, analytic geometry of space, partial differentiation, and multiple integrals, line and surface integrals.
Lecture: 4 hours
Prerequisite(s): MATH-162H Honors Calculus II, or high school Honors Calculus II, or departmental approval: equivalent coursework.
OAN Approved: TMMSL.

MATH-2520 Differential Equations
3 Credits
Study of first- and higher-order differential equations focusing on using linear and nonlinear first-order differential equations, homogeneous and nonhomogeneous linear equations, simultaneous systems, linear and nonlinear differential equations, power series, Laplace and inverse Laplace transforms to solve various application problems.
Lecture: 3 hours
Prerequisite(s): MATH-1620 Calculus II, or departmental approval: equivalent coursework.
OAN Approved: TMM020 & OMT020.

MATH-2800 Special Advanced Topics in Mathematics
1-3 Credits
Study of selected advanced topics or current issues. Provides student an opportunity to explore various topics in greater detail. Repeatable for different topics. No more than six credits of special topics courses may be applied toward elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic

MATH-2820 Independent Advanced Study/Research in Mathematics
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MATH-282H Advanced Honors Independent Study/Research in Mathematics
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.
Mechanical Engineering/Manufacturing Industrial Technology (MET)

MET-1040 Foundations of Manufacturing
2 Credits
Students will review learning styles, studying techniques, exam techniques, stress management, and time management as applied to manufacturing skills. Application of applied quantitative procedures to typical manufacturing, warehouse, construction, logistics, and allied industries situations. Covers concepts of numbers, exponential and logarithmic functions, algebraic word problems, right triangle trigonometry and basic trigonometric identities, foundational geometry, vectors and vector algebra, matrices, and solving systems of linear equations as applied to warehouse, logistics, manufacturing, and construction.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): None.

MET-1050 Applied Mathematics for Engineering Technology
1 Credit
Application of applied quantitative procedures to typical manufacturing, warehouse, and construction situations. Covers use of decimals, fractions, geometric properties, right angle trigonometry and vectors, and common unit conversions. Concepts are applied to reading engineering drawings, use in various warehouse operations, dimensioning parts, and solving systems of equations.
Laboratory: 3 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score to place into MATH-0955 Beginning Algebra, or MET-1040 Foundations of Manufacturing.

MET-1100 Technology Orientation
2 Credits
Orientation and exploration of technician's role as part of industrial team including technical careers, opportunities and job hunting skills. Topics include use of the computer, basic measurement and calculation skills and engineering drawing concepts. Introduction to oral, technical writing and graphic methods of communication. Introduction to professional organizations, journals and tools for professional enhancement to provide a path for lifelong learning.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MATH-0965 Intermediate Algebra or appropriate Math placement score to place into MATH-1530 College Algebra, or OAN Approved: OES001.

MET-1120 Computer Applications and Programming
2 Credits
Design and debug windows-based application software in Microsoft Visual Basic and C Programming languages. Apply designed software and spreadsheets in technological problem solving. Applying programming concepts to customize spreadsheets and chosen engineering specific application software.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

MET-1230 Drawing & AutoCAD
3 Credits
Apply visualization skills in the interpretation of orthographic projections and pictorial drawings. Applied geometry, use of scales, sections, and auxiliary views are studied. Dimensioning standards and conventions as applied to detail and assembly drawings in manual drafting as well as use of CAD system to accomplish drafting tasks are emphasized. Includes overviews of computer terms and functions of the Windows Operating System. Covers special terms and definitions used in computer-assisted drafting and the roles technical drawings play in production, manufacturing and product design process.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

MET-123A Engineering Drawing
1 Credit
Apply visualization skills in the interpretation of orthographic projections and pictorial drawings. Applied geometry, use of scales, sections, and auxiliary views are studied. Dimensioning standards and conventions as applied to detail and assembly drawings in manual drafting.
Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

MET-123B 2D AutoCAD
2 Credits
Dimensioning standards and conventions as applied to detail and assembly drawings in manual drafting as well as use of CAD system to accomplish drafting tasks are emphasized. Includes overviews of computer terms and functions of the Windows Operating System. Covers special terms and definitions used in computer-assisted drafting and the roles technical drawings play in production, manufacturing and product design process.
Lecture: 2 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

MET-1240 Machine Tools and Manufacturing Processes
3 Credits
Application of traditional and contemporary machine tools processes to accomplish the mechanical parts production or the maintenance and/or repairs of mechanical parts or equipment. Laboratory experiences include measuring and inspection, layout and fundamentals of machine tool setup and techniques for drilling, turning, milling and grinding. Manufacturing processes including the production of metals and alloys, polymers and plastics, forming, machining, fabrication, conditioning and finishing of metallic, plastic and composite engineering parts.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score to place into MATH-0965 Intermediate Algebra, or OAN Approved: OET010. CTAN Approved: CTEMET004.

MET-1250 Introduction to Additive Manufacturing
3 Credits
Principles of the applications of Additive Manufacturing. Advantages of using Additive Manufacturing over traditional Subtractive Manufacturing processes are studied.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra I or appropriate score on Math placement test to placement into 1000-level Mathematics.
MET-1261 Product Ideation & Design I
3 Credits
Introduction to product ideation and design process from development to production. Covers critical thinking, project planning, iterative processes, teamwork, and hand sketching. Additionally, learn contemporary design and development processes, identify customer needs, and design for manufacturing and production prototypes. Course emphasizes critical thinking skills and problem solving; students will transfer basic ideas to 2D representations and 3D prototype models.
Lecture: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math placement test.

MET-1300 Engineering Materials and Metallurgy
3 Credits
Analysis of the behavior and characteristics of metals and other materials used in manufacturing including polymers, ceramics, and composites: their structure, physical and mechanical properties. Examining and interpreting phase diagrams and crystallized microstructures of metals and alloys; heat treatment of ferrous and nonferrous metals; hardness, tensile, and charpy impact tests.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math Placement Test to enroll in MATH-0965 Intermediate Algebra.
OAN Approved: OET013.

MET-1400 CNC Programming and Operation
3 Credits
Emphasis on blueprint analysis, using math concepts to determine programming points; ascertaining implied part dimensions; calculation of speeds; feeds and tool offset; establishment of work zero and tools home positions. Manual programming of computer numerical control (CNC) machines using G-codes for FANUC controllers; tooling and set-up of CNC lathes and milling machines for machining operations; verification of tool paths by simulation; operating CNC machines to produce mechanical parts.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1400 Machine Tools and Manufacturing Processes, or concurrent enrollment; or departmental approval: work experience.

MET-1601 Technical Statics
3 Credits
Study of forces on structures and machines at rest. Topics include composition and resolution of forces, moments, freebody diagrams, trusses, frames, simple machines, friction, centers of gravity, centroids, and plane and polar moments of inertia.
Lecture: 3 hours
Prerequisite(s): MATH-1530 College Algebra; and PHYS-1210 College Physics I, or concurrent enrollment.
OAN Approved: OET007.

MET-1621 Technical Dynamics
3 Credits
Study of motion and forces on rigid members. Includes plane and curvilinear motion, kinetics, work, energy, power, efficiency, impact and momentum. Introduction to balancing and vibrations.
Lecture: 3 hours
Prerequisite(s): MET-1601 Technical Statics.

MET-1631 Industrial Supply Logistics
2 Credits
An introduction to supply chain logistics and warehouse operations for manufacturing processes. Fundamentals of supply chains, transportation modes, inventory control, documentation required in warehouses, types of warehouse equipment, workplace safety, proper handling of material, quality control systems, inspection methods, specifications, ISO 9001, product handling, and print reading. Designed to prepare students to take the MSSC CLA examination.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

MET-1801 Special Topics: Applied Mathematics for Engineering Technology
1 Credit
Application of applied quantitative procedures to typical manufacturing, warehouse, and construction situations. Us of common fractions as applied to engineering drawings, decimal and fractions as applied to warehouse operations, geometric properties when dimensioning parts, right triangle trigonometry and vectors as applied to study of motion, solving complex systems of equations, and units and unit conversions between measurement units common in applied settings.
Laboratory: 3 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate Math placement score to place into MATH-0955 Beginning Algebra, or MATH-1040 Foundations of Manufacturing.

MET-1806 Special topics in Foundations of Manufacturing
1 Credit
Application of manufacturing and allied industries success models. Application of applied quantitative procedures to typical manufacturing, warehouse, construction, logistics, and allied industries situations. Concepts of numbers, exponential and logarithmic functions, algebraic word problems, right triangle trigonometry and basic trigonometric identities, foundational geometry, vectors and vector algebra, matrices, and solving systems of linear equations as applied to warehouse, logistics, manufacturing, and construction. Students will review learning styles, studying techniques, exam techniques, stress management, and time management as applied to manufacturing skills.
Lecture: 2 hours
Prerequisite(s): None.

MET-2000 CAD/CAM Processes
3 Credits
Using Mastercam and other Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM) software to graphically model parts; graphic display manipulation; geometrical analysis; graphic and data files management; exchange and conversion of graphic files to formats readable by Mastercam or given CAD/CAM software; generating codes, post processing to G-codes interpretable by given computer numerical controller; verification and validation of tool-paths by graphical simulation; downloading path programs to machine; tooling and setting up parts on CNC lathe and milling machines; operating CNC machines to produce parts.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1400 CNC Programming and Operation or concurrent enrollment.
MET-2041 CAD II & GD&T
3 Credits
Advanced engineering drawing concepts used with computer-aided drafting software. Drawing applications include size tolerancing, geometric dimensioning, thread and fastener specifications, detail and assembly drawings, weldments, external references, bill of materials and standardized drawing formats. Introduction to solid modeling.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1230 Drawing & AutoCAD, and MET-1120 Computer Applications and Programming, or departmental approval.
OAN Approved: OET012. CTAN Approved: CTMET005.

MET-2060 Product Ideation & Design II
3 Credits
Build upon critical thinking and product development concepts introduced in Product Ideation & Design I. Develop solutions for real-world product design problems using hand sketching, 3D modeling, additive manufacturing, and other techniques. Also covers engineering principles as they apply to product design, development and manufacture.
Lecture: 3 hours
Prerequisite(s): MET-1261 Product Ideation & Design I; and MATH-0955 Beginning Algebra, or appropriate Math placement score.

MET-2070 Introduction to Industrial Warehousing
2 Credits
A continuation of industrial supply logistics and go into further detail of warehouse management and operations. Fundamentals of receiving product, storage of production output, processing orders, packaging and shipping, inventory control, handling of hazardous materials, transportation modal evaluation, customs, and dispatch and tracking operations. Designed to prepare students to take the MSSC CLT examination.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MET-1631 Industrial Supply Logistics, and MET-1100 Technology Orientation.

MET-2140 Manufacturing Automation and Control
3 Credits
Automation and control of manufacturing machines and their auxiliary equipment to enable manufacturing systems integration, applying fundamental concepts of Programmable Logic Controllers (PLC’s) with emphasis on ControlLogix-LOGIX5000 System. Basic programming and interface of robots to facilitate materials transfer in an integrated manufacturing environment.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1120 Computer Applications and Programming or concurrent enrollment.

MET-2151 3D Digital Design & Printing
3 Credits
Covers the major technology shifts in human history that have transitioned into 3D printing and explore emerging trends of the technology. Includes fundamentals of preparing CAD files for 3D printing, comparison of various 3D printing technologies in terms of advantages, relative precision, applications, advantages, and material use, engineering processes employing 3D printing, using applicable software to produce 3D models, and an emphasis on advance digital design using Solidworks for 3D printing.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2601 3D Solid Modeling.

MET-2160 3D Scanning, Reverse Engineering, and Quality Inspection
3 Credits
Covers the principles of engineering parts inspection and reverse engineering processes through the applications of 3D scanning, blueprint reading, hand tools measuring and Coordinate Measuring (CMM technologies.) Emphasis on performing laser scanning to generate 3D images; converting scanned images into 2D/3D models utilizing applicable software; employing CMM technologies for parts inspection and generating points cloud for 3D modeling; and interfacing generated models with reverse engineering methods.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2601 3D Solid Modeling

MET-2191 Additive Manufacturing Project Capstone
2 Credits
Examines the key elements of product development from the concept through design to production. Application technologies learned in the Additive Manufacturing curricula to complete individual and team projects involving product development and production.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MET-2151 3D Digital Design & Printing.

MET-2200 Strength of Materials
3 Credits
Study of stress, strain and deformation of mechanical bodies due to static tensile, compressive, torsional, bending and combined loading. Deflection of beams and columns, design of beam for strength and structural connections.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MET-1601 Technical Statics.
OAN Approved: OET008.

MET-2220 Advanced CAD/CAM Processes
3 Credits
Applying Mastercam for advanced CAD/CAM operations; creating wireframe, surface and solid models; generating, editing, verifying, and post-processing codes interpretable by given CNC controllers, with emphasis on FANUC controller; downloading path programs to CNC machines; tooling and setting up parts; operating CNC machines to produce parts.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1240 Machine Tools and Manufacturing Processes, and MET-2000 CAD/CAM Processes.

MET-2240 Mechanical Engineering Lab
1 Credit
Introduction to fundamental laboratory measurement techniques, data acquisition and analysis, and technical report writing in the form of engineering reports and executive summaries. Troubleshoot and correct hydraulic/electromechanical equipment and digital data acquisition hardware. Experiments are drawn from thermal sciences, dynamics, solid mechanics and materials science.
Laboratory: 2 hours
Prerequisite(s): MET-1601 Technical Statics.
MET-2250 Robotics Operations Certification
3 Credits
This course is intended for an operator, technician, engineer or programmer who must setup and record programs on a robot for industrial applications. The course covers the Robot Operations outline intermixed with the tasks required to set up the Handling Tool application, test, run and refine the program and production setup. It prepares students to take Robotics Operations Certification, Tests for FANUC robots and other systems.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2250 Robotics Operations Certification or departmental approval.

MET-2260 Infrared Robotic Vision
3 Credits
Course provides preparation to sit for the robotic infrared vision industry certification test. Covers vision system components, programming, error recovery, and inspection process. Also includes setup of a 2D or 3D Single view process a vision system.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2250 Robotics Operations Certification or departmental approval.

MET-2270 Advanced Robotic Welding/Arc Tool
3 Credits
Course provides preparation to sit for the Arc Tool Certification test. Covers powering up robots, safety procedures, using a teaching pendulum, mastering and calibrating the robot. Also includes setup, creating and editing weld programs of arc tool for specific weld applications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ISET-1101 Welding Blue Print Reading or departmental approval.

MET-2300 Fluid Power
3 Credits
Concepts and practices related to modern hydraulic and pneumatic systems. Includes basics of fluid flow, fluid dynamics, properties of hydraulic fluid, components of hydraulic system, hydraulic circuit, design, operation and control of hydraulic/pneumatic system.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): PHYS-1210 College Physics I or PHYS-2310 General Physics I, or concurrent enrollment; or students in Integrated Systems Engineering Technology program may fulfill prerequisite requirements with ISET-1320 Fundamentals of Fluid power; or departmental approval.
OAN Approved: OET009.

MET-2320 Thermal Dynamics
3 Credits
Heat, work, kinetic theory of gases, equation of state, thermodynamics system, control volume, first and second laws of thermodynamics, reversible and irreversible processes, and introduction to basic thermodynamic cycles.
Lecture: 3 hours
Prerequisite(s): MATH-1620 Calculus II and PHYS-2310 General Physics I.

MET-2400 Statistical Quality Control
3 Credits
Statistical quality control is the collection, analysis, and interpretation of data for use in quality control activities. Introduction to quality; fundamentals of probability and statistics; process capability; control chart applications; sampling systems; lot-by-lot acceptance sampling by attributes; reliability; quality control methods and tools; applications of computers and software to quality control.
Lecture: 3 hours
Prerequisite(s): MATH-1530 College Algebra; and MET-1240 Machine Tools and Manufacturing Processes or concurrent enrollment; or departmental approval: work experience. *Note: MATH-1521 College Algebra completed with "C" or higher prior to Fall 2016 will also be accepted to meet prerequisite requirements for this course.

MET-2422 Fundamentals of Engineering Economics
3 Credits
Analysis of cost elements in engineering projects and operations. Topics include: comparison of project alternatives; selecting an alternative by applying Benefit/Cost Analysis, Present Worth Method, Annual Worth Method, and Internal Rate of Return; introduction to risk analysis, accounting fundamentals, financial statements, and capital financing and allocation. Ethical and social responsibilities as applied to engineering project decisions. Practical applications of cost concepts and the application towards the different phases of manufacturing or project implementation. Use of Microsoft Excel in performing analysis.
Lecture: 3 hours
Prerequisite(s): MATH-1530 College Algebra or higher.
OAN Approved: OES005.

MET-2430 Engineering Probability and Statistics
3 Credits
Course covers probability and statistics for engineers. Course topics include: measures of central tendency and dispersion, probability axioms and rules, standard discrete distributions, standard continuous distributions, point and confidence interval parametric values, central limit theorem, sampling distributions, hypothesis testing for one-sample and two-sample means and proportions, relationships between two random variables, correlation analysis, and simple linear regressions. Examples, problems, and case studies can be from manufacturing, mechanical, civil, electrical, and construction engineering.
Lecture: 3 hours
Prerequisite(s): MATH-1610 Calculus I.
OAN Approved: OES004.

MET-2500 Fundamentals of Products Development and Manufacture
3 Credits
Capstone Course. This course examines the fundamentals of new product development (NPD) including: preparing for product innovation, success factors of product innovation, ideation and concept creation, customers input, market analysis, use of social media, strategies for developing products, product launches and supply chain, post launch product management, and intellectual property implications.
Lecture: 3 hours
Prerequisite(s): MET-1240 Machine Tools and Manufacturing Process; or MET-2060 Product Ideation & Design II or concurrent enrollment.
MET-2550 Engineering Analysis Using MATLAB
3 Credits
Provide basic programming concepts and apply computational methodologies to solve engineering problems by emphasizing MATLAB interactive environment software. Particularly focused on matrix/vector computation, built-in MATLAB functions, numerical analysis, scientific and engineering graphics, m-files (source code), and introduction to visualization tools. Designed for people who may not have any previous MATLAB, computer or programming experience.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-1610 Calculus I, and highly recommend concurrent enrollment in MATH-1620 Calculus II.

MET-2601 3D Solid Modeling
3 Credits
Introduction to computer-aided engineering, design of mechanical component and system using computer-aided design technique, AutoCAD solid and surface model for product development, optimization of design and design documentation. Complete set of production drawings created using 3D drawing environments. Principles of parametric design, and functional assemblies directly applied. Emphasis tailored to 3D modeling for enhanced part description. Students work on Individual design projects to stimulate spatial abilities and problem-solving techniques.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-1230 Drawing & AutoCAD.

MET-2610 Statics
3 Credits
Course designed for students planning to transfer to a 4-year engineering program. Covers mechanics of forces and loads in static equilibrium. Includes fundamentals of particle statics in 2D and 3D. Emphasis on rigid bodies equivalent force systems, equilibrium of rigid bodies in 2D and 3D, centroids and centers of gravity, friction, and analysis of trusses, frames, and beams; Also covers moments of inertia and radii of gyration; and method of virtual work.
Lecture: 3 hours
Prerequisite(s): MATH-1610 Calculus I and PHYS-2310 General Physics I, or concurrent enrollment.
OAN Approved: OES002.

MET-2620 Dynamics
3 Credits
Covers mechanics of forces and torques and the effects on motion. Emphasis on kinematics of particles and rigid bodies, Newton's Laws of Motion, Work and Kinetic Energy, Kinetics of rigid bodies, and 3D dynamics of rigid bodies. Also includes vibration and time response.
Lecture: 3 hours
Prerequisite(s): MET-2610 Statics.
OAN Approved: OES003.

MET-2630 Engineering Strength of Materials
3 Credits
Course designed for students planning to transfer to a 4-year engineering program. Focused on fundamental principles and methods of solid mechanics and their applications. Topics covered include normal, shear, torsional, and thermal stress-strain analysis; generalized Hook's law; bending moment and shear force diagrams; transformation of stress-strain and principle stresses; Mohr's circle for plane stress; state of stress in three-dimension; stress due to combined loading; deflection of beams; plane stress in thin-walled members; strain measurements; analysis of columns; and design principles based on mechanics of solids.
Lecture: 3 hours
Prerequisite(s): MET-2610 Statics and PHYS-2310 General Physics I.

MET-2630 Engineering Strength of Materials
3 Credits
Course designed for students planning to transfer to a 4-year engineering program. Focused on fundamental principles and methods of solid mechanics and their applications. Topics covered include normal, shear, torsional, and thermal stress-strain analysis; generalized Hook's law; bending moment and shear force diagrams; transformation of stress-strain and principle stresses; Mohr's circle for plane stress; state of stress in three-dimension; stress due to combined loading; deflection of beams; plane stress in thin-walled members; strain measurements; analysis of columns; and design principles based on mechanics of solids.
Lecture: 3 hours
Prerequisite(s): MET-2610 Statics and PHYS-2310 General Physics I.

MET-2700 Machine Design
4 Credits
Capstone course in Mechanical Engineering Technology. Study of mechanical motion and design of machine elements. Includes displacement, velocity and acceleration in linkages, cams and power transmission devices. Design of machine elements include checking of assembled machines, fasteners, weldments, springs, bearings, belts, chains, shafts, clutches and brakes. Laboratory consists of using CAD, computer programming and manufacturer's catalogs, and professional journals to aid in design. Proper completion of the project depends on the team as a whole.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): MET-1621 Technical Dynamics or MET-2620 Dynamics; and MET-2041 CAD II & GD&T, or concurrent enrollment; and MET-2200 Strength of Materials or MET-2630 Engineering Strength of Materials.

MET-2730 Lean Manufacturing
3 Credits
Application of Lean manufacturing concepts and Lean tools in structuring industrial manufacturing processes in efforts to minimize manufacturing costs, enhance workplace safety, improve work flow, eliminate process variations, and to shorten products delivery time.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MET-1230 Drawing & AutoCAD, and MET-1120 Computer Applications and Programming, and MATH-1530 College Algebra or higher; or departmental approval.

MET-2740 Quality Manufacturing
3 Credits
Practical application of quality principles to process improvement and reduction of variation. Application of statistical techniques and concepts used in quality control; acceptance sampling; quality cost; reliability; applications of computers, software to other quality control tools to quality improvement.
Lecture: 3 hours
Prerequisite(s): MET-2400 Statistical Quality Control; and MATH-1530 College Algebra, or departmental approval: work experience.
MET-2750 Technical Operations Management
3 Credits
Introduction to the design and management of manufacturing operations. Emphasis is focused on identifying appropriate management processes and potential management models used to efficiently manage industrial resources. Various techniques and methodologies for solving industrial operations management problems will be explored including statistical models, linear programming, and Microsoft Excel.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MET-2430 Engineering Probability and Statistics or MET-2400 Statistical Quality Control.

MET-2830 Cooperative Field Experience
1-3 Credits
Limited to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour
Prerequisite(s): Formal application into the Cooperative Education Program.

MET-2941 Additive Manufacturing Internship
1-4 Credits
Explore career interest in additive manufacturing careers while applying knowledge and skills learned in the classroom in a work environment. Internship experience will provide practical, hands-on job training in additive manufacturing providing students with an opportunity to gain experience and build professional networks. May be repeated for up to 4 credits total. Requirement for each credit hour is 180 hours of approved work.
Other Required Hours: 12 hours per week of internship/field experience per credit (total of 180 hours per credit hour)
Prerequisite(s): MET 1250 Introduction to Additive Manufacturing, and MET 1230 Drawing & AutoCAD, and MET 2601 3D Solid Modeling, or concurrent enrollment; and MET 2151 3D Digital Design & Printing, or concurrent enrollment; or departmental approval.

MJS-1310 Film Appreciation
3 Credits
Introduction to cinema studies including: film genres, narrative story telling, directing, acting, cinematography, editing, and sound in films. Includes survey of world film history and criticism. Class views motion picture masterpieces from a number of countries.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MJS-1320 Social Media Communication
3 Credits
Introduces students to blogging, Facebook, Twitter, LinkedIn and other kinds of social media as an important, natural evolution of modern journalism. Examines social media of all kinds and teaches students about using social media for fun and profit. In addition, examines the affects of social media on business, government and politics, and sociological behavior.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

MJS-1610 Survey of the Black Press
3 Credits
Nature and function of Black press including broadcast, with emphasis on history and function of Black press and impact of Black press on minorities in general. Special attention on career opportunities for minorities and problems of black journalist working with general press.
Lecture: 3 hours
Prerequisite(s): None.

MJS-1820 Independent Study/Research in Media and Journalism Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MJS-182H Honors Independent Study in Media and Journalism Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

MJS-2000 Digital Media Writing
3 Credits
Good writing is a key in many careers. Develop your writing, rewriting and editing skills for news, public relations, advertising, business and other careers, as well as for your college writing projects. Focus on the process of writing – not just composing but planning, revising, proofreading and editing. Emphasis on writing for digital media, developing media literacy, elements of covering and writing news, and writing for specific audiences.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition.
MJS-2010 News Writing
4 Credits
News information gathering and writing for all media. An advanced look at structure of news stories and emphasis on writing against deadlines. Ethical, policy and legal questions confronting reporters, their newspapers and publishers. Completion of a professional portfolio of in-class clips. Survey of career opportunities in print, broadcast and internet journalism.
Lecture: 4 hours
Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition I.

MJS-2040 American Cinema
3 Credits
American film history from its beginnings to the present day. American film as an expression of American society and popular culture. Topics include: classical Hollywood cinema; the studio system; the star; genre studies of the western, comedy, musical, combat films, and film noir; Hollywood in the age of television; the film school generation; and into the 21st century.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

MJS-2050 Mass Media and Society
3 Credits
Designed to increase your understanding of research and theory of the impact of media on individuals and society to help you become a more aware and critical consumer of media. Includes an overview of the scientific approach to the study of media. Theory and research on media effects within a variety of areas, including media violence, sexual media content, frightening images, news, political media content, media stereotypes, and new media technologies.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MJS-1010 Principles of Media Communication.

MJS-2060 Principles of Public Relations
3 Credits
Introduction to the profession of public relations; learn how to develop, implement and evaluate a public relations plan; and engage in professional practice by carrying out public relations activities on behalf of a local club, campus organization, or local community.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

MJS-2070 Sports Reporting & Broadcasting
3 Credits
This course will examine the nuances of objectively covering local sporting events, including the writing, taking game notes, interviewing, meeting a deadline and writing game stories, features and notes composites. Students will also learn to post brief interviews in the form of podcasts and videos. Students will learn the specific language and enthusiasm level needed for writing for a sports audience.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

MJS-2220 Broadcast and Multimedia Journalism
3 Credits
Lecture: 3 hours
Prerequisite(s): MJS-1010 Principles of Media and Communications.

MJS-2310 Screenwriting I
3 Credits
Provides an introduction to screenwriting for feature films.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-1010 College Composition I, and MJS-1010 Media and Communications or MJS-1310 Film appreciation, or departmental approval.

MJS-2410 Television: Videojournalism and Documentary Production
3 Credits
Introduction to basic concepts of video production for non-fiction producers. Emphasis on operation of video/audio equipment and visual story telling process. Basic producing workflow for TV news-magazine segments and documentary films: research, planning, writing, recording, editing, marketing, and distribution. Teamwork and group production emphasized.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MJS-1010 Principles of Media and Communications, or departmental approval: comparable knowledge or skills.

MJS-2820 Advanced Independent Study/Research in Journalism and Mass Communications
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MJS-282H Advanced Honors Independent Study/Research in Journalism and Mass Communications
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test and must have earned an A or B in at least 3 honors courses.
**MJS-2830 Cooperative Field Experience**

1-3 Credits

Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

*Other Required Hours: 180 clock hours of approved work per credit hour.*

**Prerequisite(s):** See campus CO-OP Advisor for the Cooperative Education Program application.

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**Media Arts and Filmmaking (MARS)**

**MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media**

3 Credits

Study dramatic theory while writing an original script. Explore cultural uses of storytelling. Take real-life scenarios and respond to them with arguments constructed by the traditional elements of drama. Learn to write outlines, log lines, treatments, and character descriptions. Discuss facets of pre-production. Learn the organizational tools and techniques used in film industry to prepare a script for production.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

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**MARS-1120 Media Arts and Studies Colloquium**

1 Credit

Introduces students to leading local and national practitioners in media arts and filmmaking. Industry professionals representing the filmmaking, commercial production, corporate, non-profit and entertainment industries present specific case histories. Expand your professional network while researching your own creative career path.

*Lecture: 1 hours*  
**Prerequisite(s):** ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

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**MARS-1180 Introduction to Media Arts and Filmmaking**

3 Credits

Provides a technical foundation for further study and practice in the art and technology of digital filmmaking. Analysis of examples of visual storytelling with regard to how lighting, color palette, picture composition, sound, performance, staging, editing and graphics work in concert to communicate theme. Hands-on instruction in producing and maintaining desired image and sound quality in production and post-production. Introduces the three phases of a media production: pre-production, production, and post-production.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** None. OAN and CTAN Approved: OCM008 and CTMDA003.

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**MARS-1813 Special Topics: Photographic Explorations for Aspiring Filmmakers**

3 Credits

Through the completion of photography and digital imaging projects, students acquire skills in camera operation, lighting, picture composition and finishing to prepare for future Media Arts and Filmmaking classes in Cinematography, Visual Effects, and Motion Graphics. Introduction to equipment checkout, camera operation and lenses, picture composition, visual narrative, quality of light, lighting instruments and modifiers, digital imaging and design elements.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** Concurrent enrollment in MARS-1180 Introduction to Media Arts and Filmmaking; or departmental approval.

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**MARS-1820 Independent Study: Media Arts and Filmmaking**

1-3 Credits

Directed individual study. Study/Research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

*Lecture: 1-3 hours*  
**Prerequisite(s):** Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

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**MARS-2110 Editing**

3 Credits

Basic motion media editing using industry standard, non-linear, editing software and hardware. Students will learn the basic concepts and techniques used to edit a project from the organizational phase through fine-tuning a completed project including delivery.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** MARS-1180 Introduction to Media Arts and Filmmaking or departmental approval.

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**MARS-2120 Advanced Editing**

3 Credits

Advanced motion media editing using industry standard, non-linear, editing software and hardware. Builds upon concepts introduced in prerequisite coursework including the basics in motion media editing using industry standard, non-linear, editing software and hardware. Concepts and techniques used to edit a project from the organizational phase through fine-tuning a completed project including delivery.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** MARS-1180 Introduction to Media Arts and Filmmaking, and MARS-2110 Editing.

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**MARS-2180 Digital Cinematography**

3 Credits

Focus on issues facing cinematographers, camera operators, digital imaging technicians, and others working in digital cinematography. Basic introduction to microphones and sound recording. Discussion of current options in acquisition format for digital filmmaking. Introduction to crew roles and set etiquette. Hands-on experience in using a variety of lighting instruments to produce desired effects. Emphasis on the practical use of light, color, picture composition, and camera movement to communicate a mood and tell a story.

*Lecture: 2 hours. Laboratory: 3 hours*  
**Prerequisite(s):** MARS-1180 Introduction to Media Arts and Filmmaking, and VCPH-1261 Photography I, or concurrent enrollment; or departmental approval.
MARS-2220 Advanced Crew and Set Operations for Motion Media
3 Credits
Learn to work as a skilled crew member to a film or video production on location and/or soundstage environment.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): MARS-2180 Digital Cinematography, or departmental approval.

MARS-2280 Short Films: Exploring Genre & Technique
3 Credits
Intensive, intermediate-level course in scripting, directing, and editing short films with a focus on genre. Participate in acting and directing exercises designed to evoke believable performances on screen. Editing approaches to narrative and experimental film are examined in relation to film theory and conventions of genre. Emphasis on expanding global awareness through examination of genre-specific themes, characters, and archetypes in international film. Exploration of the relationship between mainstream media production and the avant-garde. Application of practical methods of collaboration in professional filmmaking and media production.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MARS-2180 Digital Cinematography, or departmental approval.

MARS-2380 Visual Effects
3 Credits
Focus on planning, producing and editing visual effects for motion media. Digitally combine multiple motion and graphic sources to create convincing moving image composites. Emphasis on shot composition, matching lighting and color, focus, depth of field, camera angles and movement. Hands-on projects involve green screen filming, motion mattes, vector-based animation for mattes, titles and motion graphics, rotoscoping and digital painting.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I.

MARS-2480 Motion Graphics
3 Credits
Focus on combining visual elements from a variety of sources into a composite motion graphic. Projects include film titles, logo animation, broadcast graphics, and kinetic digital display. Emphasis on the interplay of typography, animated graphics, movie clips and sound. Exploration of the literal and stylistic communication of meaning through interaction of type and image.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, and MARS-1180 Introduction to Media Arts and Filmmaking, or departmental approval.

MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production
3 Credits
Practical experience in a real-world pre-production environment. Skills learned in Story and related technical classes are applied to an actual communications mission. Students take on roles as members of the pre-production team as they cover all facets of planning and pre-production for a major motion media project. Diverse media projects may include: advertising/public service campaigns, feature films, documentaries, media-centered performances, or media installations.
Laboratory: 6 hours
Other Required Hours: Seminar: 1 hour a week.
Prerequisite(s): MARS-1180 Introduction to Media Arts and Filmmaking, and MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media, and departmental approval.

MARS-2680 Digital Cinematography II
3 Credits
Focus on advanced issues facing directors of photography working in digital formats both in the studio and on location. Study of current acquisition formats for motion media productions and their limitations vs. advantages. Gain professional level competency in controlling lighting instruments and cameras, to produce desired effects for a variety of productions. Emphasis on practical use of light, color, picture composition, lens choice and camera movement to communicate a mood or theme, and how the craft of cinematography is used as a storytelling device.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MARS-2180 Digital Cinematography

MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media
3 Credits
Application of skills learned in introductory media arts courses and related technical classes to a motion media production. Collaborate on a project as a member of a student-lead production team. Project may include: advertising/public service campaigns, short or feature film, documentary, media-centered live performance, or media installation. Course may be repeated once for up to six credits.
Laboratory: 6 hours
Other Required Hours: Seminar: 1 hour per week.
Prerequisite(s): MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production, or departmental approval: permission of instructor.

MARS-2780 Motion Graphics II
3 Credits
Focus on technical proficiency in industry-standard motion graphics software application. Builds upon concepts and techniques introduced in MARS-2480 Motion Graphics.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MARS-2480 Motion Graphics, or departmental approval.

MARS-2820 Advanced Independent Study/Research in Media Arts and Filmmaking
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MARS-2940 MARS Field Experience
1-2 Credits
Planned activity within the professional community, which relates to students’ occupational objectives. Experience would reinforce classroom/lab skills. May be repeated for a maximum of six credits with departmental approval.
Other Required Hours: Field Experience: 12 hours per week per credit hour.
Prerequisite(s): Departmental approval.
MARS-2990 Media Arts and Filmmaking Professional Prep and Portfolio Review
2 Credits
Capstone Course. Preparation to interview for jobs within the field of motion media, along with professional resume and portfolio development for completion. Focuses on individual attributes in presentation skills and creativity. Students refine their best work completed during the program, adding items that might enhance their transfer into the job market. Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Concurrent enrollment in MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media, or departmental approval.

Medical Assisting (MA)

MA-1010 Introduction to Medical Terminology
2 Credits
Introduction to medical terminology used by health care professionals with emphasis on basics of word building, defining, spelling, reading practice, and pronunciation. Designed to provide students with a foundation for medical word building and to help students who intend to enroll in Medical Terminology I and/or Anatomy and Physiology. Lecture: 2 hours
Prerequisite(s): None. CTAN Approved: CPT001 (1 of 2 courses, both must be taken).

MA-1020 Medical Terminology I
3 Credits
Terminology utilized by health care professionals. Emphasis on correct spelling, definition, and pronunciation. Usage of basic and complex medical terms related to the body as a whole, and to the musculoskeletal, digestive, respiratory, urinary, female reproductive, male reproductive and cardiovascular systems. Proficient use of medical dictionary emphasized. Lecture: 3 hours
Prerequisite(s): None. OAN Approved: OHL020. CTAN Approved: CMT001.

MA-1321 Medical Office Laboratory Procedures
2 Credits
Basic principles of laboratory knowledge in the operations of a physician’s office laboratory. Safety regulations along with the regulatory agency guidelines and requirements. A heavy emphasis is placed on patient instruction in the collection of a specimen, the proper processing of specimen to ensure a reliable result, and the reporting of test results. Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology; and concurrent enrollment in MA-132L Medical Office Laboratory Procedures, and departmental approval: admission to Medical Assisting program. CTAN Approved: CMTAT09 (1 of 2 courses, both must be taken).

MA-132L Medical Office Laboratory Procedures
1 Credit
Laboratory component to the Medical Office Laboratory Procedures course. Includes the importance of quality control and quality assurance in the physician’s office laboratory. Technical procedures for venipuncture and capillary sticks, and collection and processing of specimens covered. Laboratory testing including basic urinalysis, microbiology testing, serological testing, hematology testing and point of care testing. Occupational Safety & Health Administration (OSHA) and Clinical Laboratory Improvement Amendment (CLIA) regulations will be taught as they apply to the Physician Office Laboratory (POL).
Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology; and concurrent enrollment in MA-1321 Office Laboratory Procedures, and departmental approval: admission to Medical Assisting program. CTAN Approved: CMTAT09 (2 of 2 courses, both must be taken).

MA-1402 Basic Clinical Medical Assisting
2 Credits
Discuss theory of fundamental clinical procedures in physician’s offices and related ambulatory care settings. Review of basic anatomy and physiology of the cardiovascular system as relate to diseases, disorders and diagnostic testing. Provide patient communication focusing on diverse populations and special needs. Theory and practice of pharmacology and pharmacology math associated with the ambulatory setting. Completion of course requires ten mandatory hours outside class time in the Preventive Care Center under supervision of faculty and staff. Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology or MA-1020 Medical Terminology I; and concurrent enrollment in MA-140L Basic Clinical Medical Assisting Lab, and departmental approval: admission to Medical Assisting program. CTAN Approved: CMTAT09 (1 of 2 courses, both must be taken).

MA-140L Basic Clinical Medical Assisting Lab
1 Credit
Laboratory component to Basic Clinical Medical Assisting course. Perform fundamental clinical assisting procedures in the physician’s office, clinic, family practice centers, urgent cares, or hospitals. Perform procedures used in patient examinations including medical asepsis, vital signs including anthropometric measurements, positioning and draping, visual and hearing acuity screenings, perform EKG’s, Holter Monitors, Pulmonary Function Tests, Phlebotomy, Capillary sticks, and the administration of injections.
Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology or MA-1020 Medical Terminology I; and concurrent enrollment in MA-1402 Basic Clinical Medical Assisting; and departmental approval: admission to the Medical Assisting program. CTAN Approved: CMTAT09 (2 of 2 courses, both must be taken).
MA-1503 Administrative Procedures for the Medical Office
2 Credits
Prepares students to handle the day-to-day front office operations in a medical facility. Office communications are simulated by typing various forms of correspondences seen in the physician's office. Receiving and sorting of incoming mail, scheduling appointments and surgeries, setting up new offices, phone techniques and etiquette, maintaining medical records, and Health Insurance Portability and Accountability Act (HIPAA) emphasized. Learn the skills necessary to become an office manager, including terminations, hearings, bookkeeping and finances. Emphasis is placed on electronic technology used in today's medical office practices.
Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology or MA-1020 Medical Terminology I; and concurrent enrollment in MA-150L Administrative Procedures Laboratory, and departmental approval: admission to Medical Assisting program. CTAN Approved: CTMAT004 and CTMAT005 (1 of 2 courses for both CTMAT004 and CTMAT005, both must be taken)

MA-150L Administrative Procedures Laboratory
1 Credit
Laboratory component of Administrative Procedures for the Medical Office course. Practice handling the day-to-day operations in the front office of a medical practice. Communicate both verbally and non-verbally, receiving and sorting mail, appointment scheduling (both manually and electronically), filing, handling prescription refills, telephone techniques, maintaining medical records, finances and banking of the practice, human resources, marketing and customer service techniques. Protection of patient information and records, including the Health Insurance Portability and Accountability Act (HIPAA). Strong emphasis in teaching and learning the Electronic Medical Health Record.
Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MATH-0955 Beginning Algebra or appropriate math placement score; and MA-1010 Introduction to Medical Terminology or MA-1020 Medical Terminology I; or concurrent enrollment in MA-1503 Administrative Procedures for the Medical Office and departmental approval: admission to Medical Assistant program. CTAN Approved: CTMAT004 and CTMAT005 (2 of 2 courses for both CTMAT004 and CTMAT005, both must be taken)

MA-1600 EKG - Electrocardiogram Fundamentals
1 Credit
Theory and practice of 12-lead EKG that allows certification as an EKG Technician by the National Health Career Association upon completion of the course. Emphasis placed on identifying normal rhythm strips and assessing for artifacts, definitions of medical terminology of the cardiovascular system, application of universal precautions and patient safety
Laboratory: 2 hours
Prerequisite(s): None.

MA-1820 Independent Study/Research in Medical Assisting
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MA-182H Honors Independent Study in Medical Assisting
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

MA-2010 Medical Terminology II
2 Credits
Terminology utilized by healthcare professionals. Emphasis on spelling, definition, pronunciation, and usage of basic and complex medical terms related to hematology, lymphatic, integumentary, special senses, nervous, psychiatric and endocrine systems. Emphasis on reading, translating and composing medical documents. Proficient use of medical dictionary emphasized.
Lecture: 2 hours
Prerequisite(s): MA-1020 Medical Terminology I, or departmental approval: related work experience.

MA-2110 Reimbursement for Physician Services
2 Credits
Basic overview of insurance forms, terms, and coding methodologies used in the physician office. Introduction to reimbursement methodologies and claims processing procedures for the medical office. Review basics of CPT, ICD 9, and HCPCS. Includes electronically filing a CMS1500 form and completing "clean claims", and how to follow up on rejected claim forms. Also provides a brief introduction of ICD 10.
Lecture: 2 hours
Prerequisite(s): MATH-1100 Mathematical Explorations and departmental approval. CTAN Approved: CTMAT006.

MA-2413 Advanced Clinical Medical Assisting
3 Credits
Theory necessary for the medical assistant (MA) to perform and assist with advanced procedures in the physician's office, clinic, and other ambulatory settings. Coverage of body systems in relation to specialized exams/treatments, laboratory/diagnostic.
Lecture: 3 hours
Prerequisite(s): MA-1321 Medical Office Laboratory Procedures, and MA-132L Medical Office Laboratory Procedures Lab, and MA-1402 Basic Clinical Medical Assisting, and MA-140L Basic Clinical Medical Assisting Lab, and MA-1503 Administrative Procedures for the Medical Office, and MA-150L Administrative Procedures Laboratory, and concurrent enrollment in MA-241L Advanced Clinical Assisting Lab. CTAN Approved: CTMAT010 (1 of 2 courses, both must be taken).
MA-241L Advanced Clinical Assisting Lab
1 Credit
Laboratory component to Advanced Clinical Assisting course. Practice psychomotor skills required by the medical assistant to perform advanced procedures in the physicians office, clinic, or family practice centers. Emphasis will be placed on mastering those skills related to Ophthalmology, Otology, Gastroenterology, Urinary, Male Reproduction, Obstetrics, Gynecology, Pediatrics, Orthopedics, Neurology, Mental Health, Endocrinology, Pulmonary, and Geriatric Medicine.
Lecture: 2 hours
Prerequisite(s): MA-1321 Medical Office Laboratory Procedures, and MA-132L Medical Office Laboratory Procedures, and MA-1402 Basic Clinical Medical Assisting, and MA-140L Basic Clinical Medical Assisting Lab, and MA-1503 Administrative Procedures for the Medical Office, and MA-150L Administrative Procedures Laboratory, and concurrent enrollment in MA-2413 Advanced Clinical Medical Assisting. CTAN Approved: CTMAT010 (2 of 2 courses, both must be taken).

MA-2600 Patient Navigator Fundamentals
2 Credits
Introduction to basic patient navigation techniques: Patient resources, health promotion, preventative medicine, professional conduct, patient interviewing techniques. Learning how to recognize health disparities and increase health literacy.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Patient Navigator Program.

MA-2610 Advanced Health Care Delivery Coordination
2 Credits
Advanced training in competent delivery of coordination care in the ambulatory and the inpatient settings to patients with chronic illness and assist with end-of-life care. Includes navigation between the medical team, patients and their families.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Patient Navigator program.

MA-2620 Patient-Centered Medical Home
2 Credits
Advanced training for students to work with Patient-Centered Medical Homes by coordinating care between the medical team and the patient. Includes concepts, applications, intervention strategies, and implementations for successful patient care.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Patient Navigator program.

MA-2805 Special Topics: University Hospitals Patient Navigator Training
2 Credits
This course will provide training for patient navigators to develop resources for assisting patients. Potential patient barriers and solutions will be covered as well as methods to patients. Potential patient barriers and solutions will be covered as well as methods to assist patients through complex healthcare systems. Tools for educating patients in chronic disease will be provided including methods for engaging and motivating patients in behavior changes. Students will learn how to assist the medical team and engage with patients to provide a better patient experience and therefore a better quality of life.
Lecture: 2 hours
Prerequisite(s): Departmental approval: completion of an accredited medical assisting program or a CMA certification.

MA-2806 Special Topics: Patient Care Navigator
2 Credits
Children with complex chronic conditions create challenges for the parents/caregivers. Patient Advocates determines barriers the child/parent/caregiver face and provides solutions to those barriers. Patient Advocates engage the family/caregiver in a meaningful way to deliver and provide proper health care to the child for a better quality of life.
Lecture: 2 hours
Prerequisite(s): Departmental approval: completion of an accredited medical assisting program, CMA certification, current CPR/First Aid certified, and in good standing with credentialing organization.

MA-2820 Advanced Independent Study/Research in Medical Assisting
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MA-2840 Patient Navigator Practicum
3 Credits
Capstone course in Patient Navigator Professional Certificate. Review of Patient Navigator principles, procedures and practical applications. Compare and contrast various clinical settings. Supervised clinical experience in a medical setting (inpatient or outpatient). Students will perform duties of a patient navigator under the auspices of a preceptor at the site.
Lecture: 1 hour
Other Required Hours: 210 hours at practicum/Clinical site; seminar: 15 hours per semester (1 hour a week).
Prerequisite(s): Departmental approval: admission to Patient Navigator program.

MA-2860 Medical Assisting Practicum
2 Credits
Capstone course in Medical Assisting. Supervised clinical experience in a physicians office, clinic or family practice center. Students perform duties of a medical assistant while rotating through administrative and clinical areas of a physicians office, clinic or family practice center.
Other Required Hours: Practicum: 210 hours per semester.
Prerequisite(s): MA-1503 Medical Office Procedures, and concurrent enrollment in MA-2413 Advanced Clinical Medical Assisting, and concurrent enrollment in MA-2980 Medical Assisting Seminar. CTAN Approved: CTMAT011 (2 of 3 courses, all must be taken).

MA-2980 Medical Assisting Seminar
1 Credit
Principles, procedures, and practical application of administrative, clinical and special medical assisting procedures. Opportunity to compare and contrast practices in various clinical settings. Discussion of certification and preparation to function as a certified medical assistant. Discussion of future trends in medical assisting profession.
Other Required Hours: Seminar: 1 hour per week.
Prerequisite(s): Concurrent enrollment in MA-2860 Medical Assisting Practicum, or departmental approval. CTAN Approved: CTMAT011 (3 of 3 courses).
Medical Laboratory Technology (MLT)

MLT-1000 Introduction to Medical Laboratory Technology
3 Credits
This introduction to Medical Laboratory Technology provides an overview of the profession, safety, blood collection and processing, code of ethics, basic clinical laboratory equipment and instrumentation, basic lab math, quality control and assurance.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra, or appropriate score on Math placement test, and departmental approval.
OAN Approved: OHL008. CTAN Approved: CTMLT001.

MLT-1300 Introduction to Blood Collection
3 Credits
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test to enroll in ENG-1010 College Composition I, and departmental approval.
OAN Approved: OHL010.

MLT-1351 Problem Solving Techniques for the Medical Laboratory
2 Credits
Review of basic algebra and measurement systems. Study of formula evaluation, unit analysis and conversions, dilutions, concentrations, calculations specific to clinical analytes and Beer's Law. Construction of standard curves, calculation and application of quality control parameters related to clinical laboratory medicine. Application and activities to build skills in problem solving.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1410 Elementary Probability and Statistics I, and departmental approval.

MLT-1491 Urinalysis and Body Fluids
3 Credits
Theory and application of urine and body fluid analysis. Includes the anatomy and physiology of the kidney, physical, chemical and microscopic examination of the urine, cerebrospinal and other body fluids. Also includes diagnostic significance of test results and correlation with disease states, quality control, quality assurance and safety.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology or departmental approval: related work experience.
OAN Approved: OHL010.

MLT-1820 Independent Study/Research in Medical Laboratory Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MLT-1851 Medical Laboratory Practicum I
2 Credits
Supervised clinical experience. Students rotate through inpatient or outpatient phlebotomy departments of local clinical sites for 26.25 hours per week (8 weeks) meeting performance objectives for laboratory phlebotomy technician.
Other Required Hours: 26.25 hour per week for 8 weeks (210 total hours).
Prerequisite(s): MLT-1300 Introduction to Blood Collection or concurrent enrollment, and concurrent enrollment in MLT-2970 Advanced Phlebotomy, and departmental approval.

MLT-2461 Hematology
3 Credits
An introduction to the theory, principles and procedures used in hematologic and coagulation (hemostasis). Hematopoiesis, enumeration, differentiation and evaluation of blood formed elements and the basic process of coagulation are discussed. Manual and automated techniques are explained, demonstrated, and performed. Anemias, leukemias and other hematologic disorders are studied, correlating test results with disease states. Problem solving skills are applied in related case studies and unknowns.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MA-1020 Medical Terminology I and departmental approval.
OAN Approved: OHL009.

MLT-2471 Immunohematology & Serology
5 Credits
Study of immunohematologic (blood banking), immunologic and serologic principles and the application of testing procedures. Antigen-antibody reactions for ABO antigens, Rh (Rhesus) and other major blood group systems, compatibility testing, component therapy and production, acceptable donor criteria, transfusion transmitted diseases, diagnostic uses of serological tests. Performance of associated laboratory tests. Analysis of case studies, problem solving and clinical significance of results in diagnosis.
Lecture: 3 hours. Laboratory: 6 hours
Prerequisite(s): MLT-2501 Clinical Chemistry.

MLT-2482 Clinical Microbiology
5 Credits
Application of the principles and procedures utilized in clinical microbiology, mycology, parasitology and virology in the collection, identification and serological detection of organisms. Pathogenesis and prevention of disease. Media, methods of culture and isolation, biochemical and susceptibility testing, aseptic and staining techniques, sterilization and safety protocols are studied. Analysis of case studies, problem solving and clinical significance of results in diagnosis.
Lecture: 3 hours. Laboratory: 6 hours
Prerequisite(s): BIO-2500 Microbiology and MLT-1000 Introduction to Medical Laboratory Technology.

MLT-2501 Clinical Chemistry
5 Credits
Principles, procedures and application of basic and advanced diagnostic tests in clinical chemistry for all body fluids. Emphasis on correlation of results with clinical significance, interpreting quality control data, and mastering basic lab skills.
Lecture: 3 hours. Laboratory: 6 hours
Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology, and MLT-1351 Problem Solving Techniques for the Medical Laboratory, and departmental approval.
MLT-2820 Advanced Independent Study/Research in Medical Laboratory Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MLT-282H Advanced Honors Independent Study/Research in Medical Laboratory Technology
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

MLT-2940 Medical Laboratory Field Experience
3 Credits
Capstone course in Medical Laboratory Technology. Supervised clinical experience. Students rotate through chemistry, microbiology, serology, immunohematology, hematology/coagulation, body fluids laboratories, and phlebotomy departments for thirty-six (36) hours per week meeting performance objectives of medical laboratory personnel at the MLT level. Other Required Hours: Field Experience: 36 hours per week. Prerequisite(s): MLT-2990 Advanced MLT Applications.

MLT-2970 Advanced Phlebotomy
1 Credit
Review of theory and techniques for phlebotomy procedures. Presentation of basic procedures involved in point-of-care testing and unregulated laboratory test procedures. Emphasis on universal precautions, safety, communication, interpersonal skills, and ethical considerations relating to patients. Seminar discussion of practicum experience. Other Required Hours: Seminar: 1 hour per week. Prerequisite(s): Concurrent enrollment in MLT 1851 Medical Laboratory Practicum I, and MLT-1300 Introduction to Blood Collection, or departmental approval.

MLT-2980 Professional Development and Life Skills
1 Credit
Integration of knowledge acquired in basic, technical and non-technical areas in preparation for professional roles and life-long professional growth and development. Seminar discussion of clinical experience. Other Required Hours: Seminar: 1 hour per week. Prerequisite(s): MLT-2990 Advanced MLT Applications; and concurrent enrollment in MLT-2940 Medical Laboratory Field Experience.

MLT-2990 Advanced MLT Applications
6 Credits
Manual laboratory skills related to clinical chemistry, hematology, coagulation, body fluids, microbiology, parasitology, mycology, immunohematology/serology are refined. The operation and maintenance of laboratory equipment, function verification, analysis of quality control and application of corrective action is studied and performed. Emphasis on organization, increased speed, accuracy, confidence and independent performance. Case studies are analyzed, data interpreted and findings are correlated to clinical significance and differential diagnoses. Advanced concepts in parasitology, mycology, immunohematology/serology, principles of education, molecular diagnostics, point of care, information systems and troubleshooting are introduced.
Lecture: 1 hour. Laboratory: 15 hours
Prerequisite(s): MLT-1491 Urinalysis and Body Fluids, and MLT-2461 Hematology, and MLT-2501 Clinical Chemistry, and BIO-2500 Microbiology.

Microsoft Application (ZMSA)

ZMSA-1111 Microsoft Excel (Beginner)
0.7 CEU's
Work with the spreadsheet concepts required to produce basic worksheets including inputting data and running calculations. Topics covered include creating a basic worksheet, performing calculations, modifying a worksheet, formatting a worksheet, printing workbooks and managing large workbooks. Contact hours: 7
Not financial aid eligible.

ZMSA-1112 Refresh Microsoft Excel (Intermediate)
0.7 CEU's
Streamline and enhance your spreadsheets with customized Microsoft Excel elements including templates, charts, graphics and formulas. Apply visual elements and advanced formulas to a worksheet to display data in various formats. Create templates, sort and filter data, import and export data, analyze data and work with Excel on the web. Contact hours: 7
Not financial aid eligible.

ZMSA-1113 Microsoft Outlook, Intermediate
0.7 CEU's
This course is designed for students who would like to learn intermediate-level operations of the Microsoft Office Access program. You will consider how to maintain data consistency and integrity, customize database components, improve queries, forms, and reports, and integrate Access with other applications. Contact hours: 7
Not financial aid eligible.

ZMSA-1114 Microsoft Outlook, Beginner
0.7 CEU's
Learn the basic operations of the Microsoft Access database application to design and create new databases, tables, and relationships; create and maintain records; locate records; and produce reports based on the information in the database. You will examine the basic database concepts, and create and modify databases and their various objects using the MS Access relational database application. Contact hours: 7
Not financial aid eligible.
ZMSA-1115 Microsoft Outlook, Advanced
0.7 CEU's
This course will take you through creating and optimizing complex Access databases by learning techniques to structure existing data for optimization, writing advanced queries, working with macros, making effective use of forms and reports, and performing database maintenance tasks.
Contact hours: 7
Not financial aid eligible.

ZMSA-1125 Microsoft Excel Data Analysis
0.8 CEU's
This course is designed for advanced Microsoft Office Excel professionals who work or are interested in finance, statistics, project analysis and market analysis, including the fields of micro and macroeconomics. Topics include forecasting data using functions, using data analysis tools, using financial functions to make investment decisions, examining data using math functions, manipulating data using text and information functions, creating templates, working with advanced chart options and managing data in Excel workbooks.
Contact hours: 8
Not financial aid eligible.

ZMSA-1127 Microsoft Excel (Advanced)
0.7 CEU's
This course is for students who want to gain the advanced skills required to utilize the specialized capabilities of Excel. Automate common tasks, apply advanced analysis techniques to more complex data sets, collaborate on worksheets with others, and share Excel data with other applications. Topics include creating macros, collaborating with others, auditing and analyzing worksheet data, incorporating multiple data sources, and importing and exporting data.
Contact hours: 7
Not financial aid eligible.

ZMSA-1152 Microsoft Office Training: Excel, Outlook, Word, PowerPoint
3.5 CEU's
Whether you are transitioning to a new role, fresh out of college, or need to increase your productivity and efficiency, this course is designed to help you. Comprehensive Microsoft Office Training covers Excel, Outlook, Word, and PowerPoint. As a Tri-C student you will have access to these programs during class and on your home computer to practice. Gain experience using the most up to date version of Microsoft Office in a safe learning space. No question is too elementary! Learn the best use of each application. Shortcuts and other tips. Prepare to have several "ah-ha" moments throughout the course.
Contact hours: 35
Not financial aid eligible.

ZMSA-1153 Microsoft Administrative Professional (MAP) Academy
17.05 CEU's
Become a Microsoft Certified Administrative Professional! This five-week program prepares entry-level computer users for certification in four separate Microsoft applications: Word, Outlook, PowerPoint and Excel. A different application will be highlighted each week, with innovative instruction and guided practice. Exams will be given on Fridays. Materials and fees for all four exams are included.
Contact hours: 170.5
Not financial aid eligible.

ZMSA-1164 Microsoft Project 2016, Advanced
0.8 CEU's
This course provides a continuation of learning Microsoft Project 2016. The materials provide up-to-date information on setting up projects and building a project schedule. The goal of this course is thus to impart an overall understanding of Microsoft Project through a focus upon advanced concepts, definitions, tools, strategies, processes and phases of schedule management.
Contact hours: 8
Not financial aid eligible.

MS Cert Prof Sys Engineer (ZMCP)

ZMCP-1086 SQL - Beginner
3 CEU's
This course gives students the technical skills required to write basic Transact-SQL queries for Microsoft SQL Server 2008. Students will be introduced to client/server architecture and will examine various database and business tasks that can be performed using SQL Server 2008. They will also be introduced to SQL Server database concepts such as relational databases, normalization and database objects.
Contact hours: 17.5
Not financial aid eligible.

ZMCP-1115 Project Management for Executives
0.8 CEU's
Project Management for Executives focuses on the five processes and ten knowledge areas of project management. Through this course you will be exposed to the industry standard methodology behind the process through guided practice, group discussion, and real-world based exercises.
Contact hours: 8
Not financial aid eligible.

ZMCP-1116 Project Management Fundamentals - Essential Skills for Project Managers
2.4 CEU's
Using the Steps from the Project Management Institute, learn all the basic steps needed for the new project manager or supervisor to successfully complete a project. This class supports all the charts and graphs needed for perfect implementation, and includes a full day discussing people skills and negotiation for project resource usage. The process consists of three components—initiating, planning, and Executing—and 14 steps which are learned, practiced, and applied during the workshop. Once a step is talked about, the participants then work in teams to complete a case that leads to actually building the project in the class. After each step, each participant then works on their own project brought from their jobs.
Contact hours: 24
Not financial aid eligible.
Music (MUS)

MUS-1010 Survey of European Classical Music
3 Credits
Introduction to elements and styles of European classical music. Composers, works, instrumentation and forms studied in their cultural and historical context. Focus on listening and understanding European classical music.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MUS-1020 Survey of Jazz
3 Credits
Introduction to basic elements and techniques of jazz. Function of jazz instrumentation, forms, improvisation and other musical elements and conventions indigenous to jazz. Characteristic features of various styles and artists studied. Focus on listening to and understanding jazz.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MUS-1030 Survey of Rock and Roll
3 Credits
Survey of most influential and innovative works and artists of rock music from origins to present. Includes terminology, techniques, style, instrumentation and lyrics, with references to cultural and historical context. Course involves listening to, reading and discussing of artists and recordings. Focus on listening to and understanding rock and roll music.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MUS-1040 Survey of African-American Music
3 Credits
Chronological study of history of African-American music from eighteenth century through 1920s. Oral traditions and performance practices studied in cultural and historical context. Sacred, folk, popular, and classical music, and precursors of jazz discussed. Focus on listening to and understanding African-American music.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MUS-1050 Survey of World Music
3 Credits
Introduction to elements and styles of music of diverse ethnic cultures. Instruments, forms, and concepts of music explored through art and folk music to develop an understanding of how basic materials of music work together. Focus on listening to and understanding music of diverse cultures.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

MUS-1110 Music Business I
3 Credits
Examination of multiple facets of music industry. Includes exploration of career options, recording industry, performance and promotion, music business contracts, marketing of songs, music publishing, copyrights, and retail.
Lecture: 3 hours
Prerequisite(s): None.

MUS-1120 Music Business II
3 Credits
Artist promotion, management, music agents, music in advertising, concert promotion, arts administration, and music entrepreneurship.
Lecture: 3 hours
Prerequisite(s): MUS-1110 Music Business I.

MUS-1130 MIDI Technology I
3 Credits
Basic audio signal flow, MIDI (Music Instrument Digital Interface) principles and techniques, the virtual studio concept, computer-based sequencing and notation software and operation of modern keyboard equipment.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

MUS-1140 MIDI Technology II
3 Credits
Further development of concepts and skills introduced in MIDI Technology I. Advanced sequencing and editing techniques, synchronization, digital audio recording, music notation and MIDI studio organization.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MUS-1130 Midi Technology I.

MUS-1170 Songwriting I
2 Credits
Instruction in art of contemporary songwriting. Includes consideration of form, rhythm, melody, lyric content, harmony, arranging, and development of individual style. Development of listening skills and criticism utilizing songs of class members and established artists.
Lecture: 2 hours
Prerequisite(s): None.

MUS-1200 Music Reading Skills
3 Credits
Introduction to concepts and skills of reading music and music theory for pre-music and non-music majors. Includes study of notation, rhythm, scales, key signatures, intervals and triads.
Lecture: 3 hours
Prerequisite(s): None.

MUS-1210 Introduction to Music Theory
3 Credits
Terminology, symbols, skills, and concepts of music theory for pre-music and non-music majors. Includes study of intervals, chords, voice leading and figured bass, compositional devices, transposition, analysis, and basic forms.
Lecture: 3 hours
Prerequisite(s): MUS-1200 Music Reading Skills, or departmental approval.
MUS-1220 Basic Ear Training
2 Credits
Introduction to development of aural skills for pre-music and non-music majors. Students develop discrimination skills including pitch and rhythm perception through sight singing and dictation.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1200 Music Reading Skills, or departmental approval.

MUS-1230 Critical Listening
1 Credit
Use of critical and analytic listening methods to evaluate frequency, sound quality, musical mix structure and to analyze common sound problems.
Lecture: 1 hour
Prerequisite(s): None.

MUS-1250 Class Keyboard I
2 Credits
Basic piano techniques and performance skills for pre-music and non-music majors. Emphasis on keyboard development in sight reading, improvising, transposing and harmonizing melodies in various styles. Includes solo and ensemble literature.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OAH019 (1 of 2 courses, both courses must be taken).

MUS-1260 Class Keyboard II
2 Credits
Functional piano techniques and keyboard skills for pre-music and non-music majors. Keyboard development in second level sight reading, transposing, improvising, and ensemble playing in various styles. Development of second level solo and ensemble repertoire.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1250 Class Keyboard I.
OAN Approved: OAH019 (2 of 2 courses, both must be taken).

MUS-1270 Class Voice
2 Credits
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

MUS-1280 Class Guitar
2 Credits
Basic guitar techniques and performance skills for pre-music and non-music majors. Emphasis on left hand development, plectrum technique, and chord and scale vocabulary and performance. Application of principles to solo and ensemble literature. Students will need their own guitar.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

MUS-1290 Basic Applied Music I
1 Credit
Individual instruction for pre-music and non-music majors on any standard band, orchestral instrument or voice. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Other Required Hours: A private lesson and 7 hours of concentrated practice each week.
Prerequisite(s): Departmental approval.

MUS-1301 Applied Piano Minor I
1 Credit
Private piano instruction for music majors with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for first semester. A juried end of semester performance is required.
Other Required Hours: A private lesson and 7 hours of concentrated practice each week.
Prerequisite(s): Departmental approval: audition.

MUS-1302 Applied Piano Minor II
1 Credit
Second level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for second semester. A juried end of semester performance is required.
Other Required Hours: A private lesson and 7 hours of concentrated practice each week.
Prerequisite(s): MUS-1301 Applied Piano Minor I.

MUS-1460 Applied Music I
2 Credits
Applied instruction in musical instruments and voice for college students pursuing degrees in music. Development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for first semester music majors. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.
Other Required Hours: A private lesson and 14 hours of concentrated practice each week. As a final exam, students will play a performance jury in front of music faculty at the end of the term of study to demonstrate proficiency.
Prerequisite(s): Departmental approval.
OAN Approved: OAH020 (1 of 4 courses, any 1 of the 4 courses may be taken).

MUS-1470 Applied Music II
2 Credits
Second level private instruction for music majors. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Standard repertoire including selected solo and method literature appropriate for second semester music majors. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.
Other required hours: One private lesson and 14 hours of concentrated practice each week. As a final exam, students will play a performance jury in front of music faculty at the end of the term to demonstrate proficiency.
Prerequisite(s): MUS-1460 Applied Music I.
OAN Approved: OAH020 (2 of 4 courses, any 1 of the 4 courses may be taken).
MUS-1510 Choral Ensemble
1 Credit
Performance of choral literature from Renaissance through 20th Century for small select ensemble. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): Departmental approval: audition.
OAN Approved: OAH022 (1 of 3 courses, any 1 of the 3 courses may be taken).

MUS-1520 Jazz Ensemble
1 Credit
Study and experimentation in performance of jazz ensemble literature and styles. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): Departmental approval: audition.

MUS-1530 Concert Band
1 Credit
Performance of band and wind ensemble literature by woodwinds, brass, and percussion players. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): Departmental approval: audition.
OAN Approved: OAH022 (2 of 3 courses, any 1 of the 3 courses may be taken).

MUS-1540 Orchestra
1 Credit
Performance of selected orchestral literature by string, woodwind, brass and percussion players. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): Departmental approval: audition.
OAN Approved: OAH022 (3 of 3 courses, any 1 of the 3 courses may be taken).

MUS-1550 Instrumental Ensemble
1 Credit
Performance of traditional and contemporary ensemble literature. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): Departmental approval: audition.
OAN Approved: OAH022 (4 of 8 courses, all must be taken).

MUS-1570 Technology Tools I
2 Credits
Designed to give music students practical knowledge and skills in the use of current computer, MIDI (Musical Instrument Digital Interface), and electronic instrument technologies for application in music theory, arranging, composition and performance. Includes basic computer, MIDI principles and techniques, computer-based notation and sequencing software, and operation of modern electronic keyboard instruments.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1210 Introduction to Music Theory, or departmental approval.

MUS-1590 Music Theory Fundamentals
1 Credit
Survey of music concepts including music reading, scales, chords, key, rhythm, meter, and musical styles. Public performance required. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Laboratory: 3 hours
Prerequisite(s): MUS-1210 Introduction to Music Theory, or departmental approval.
OAN Approved: OAH022 (1 of 3 courses, any 1 of the 3 courses may be taken).

MUS-1600 Traditional Theory I
3 Credits
Manipulation of musical materials including harmonic, melodic, rhythmic, and basic formal procedures with correlated creative works and analysis. Harmonization of figured bass and chorale writing including diatonic harmony and voice leading, melodic procedures and all non-harmonic tones. Analysis of common-practice literature. Integrates harmonic and contrapuntal approaches to analysis and composition.
Lecture: 3 hours
Prerequisite(s): Departmental approval through appropriate score on Music Theory Placement Test offered through the Music Department. Students who do not achieve the appropriate score on the Music Theory Placement Test will be required to complete MUS-1200 Music Reading Skills and MUS-1210 Introduction to Music Theory with a grade of “C” or higher prior to enrolling in this course.
OAN Approved: OAH052 (1 of 8 courses, all must be taken).

MUS-1610 Ear Training I
2 Credits
Identification of diatonic and chromatic intervals, triad qualities, scales and phrases. Melodic and rhythmic dictation, sight singing, and analytic listening. Introduction to harmonic function and holistic listening.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1220 Basic Ear Training.
OAN Approved: OAH052 (2 of 8 courses, all must be taken).

MUS-1620 Traditional Theory II
3 Credits
Examination of modulation, chromatic materials, and 20th century techniques. Integrates harmonic and contrapuntal approaches to analysis and composition.
Lecture: 3 hours
Prerequisite(s): MUS-1600 Traditional Theory I, and MUS-1610 Ear Training I.
OAN Approved: OAH052 (3 of 8 courses, all must be taken).

MUS-1630 Ear Training II
2 Credits
Second level identification of intervals, chord qualities, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1610 Ear Training I.
OAN Approved: OAH052 (4 of 8 courses, all must be taken).

MUS-1650 Jazz Theory I
2 Credits
Introduction to theoretical foundations of jazz including systematic examination of scales, modes and their practical applications, chord construction and notation, chord_SCALE relationships and applications, melodic construction and development, and analysis of transcribed solos and compositions from jazz repertoire including American standard song.
Lecture: 2 hours
Prerequisite(s): MUS-1620 Traditional Theory II, and MUS-1630 Ear Training II; or departmental approval.
MUS-1720 Arranging I
2 Credits
Writing and Arranging for the modern rhythm section including piano, guitar, bass, drums and auxiliary percussion: writing and arranging techniques address the rhythm section as a unit and as part of a small or large ensemble.
Lecture: 2 hours
Prerequisite(s): MUS-1600 Traditional Theory I, or departmental approval.

MUS-179H Honors Contract in Music
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

MUS-1806 Special Topics: History and Instrumental Performance of The Blues
2 Credits
Study of history of Blues from Mali, Africa through its journey to America through the Great Migration and to its place in modern popular culture. The focus of the class will be understanding Roots (Blues) Music and the role it has played in the development of popular music through lecture and application. Students will learn instrumental solo and ensemble literature for guitar, piano, voice, and solo instruments within the classroom setting. Students will need their own instruments or will use the piano in the classroom to apply their studies. (Students can gain access to the campus practice room for individual practice outside of class.)
Lecture: 1 hour, Laboratory: 2 hours
Prerequisite(s): MUS 1200 Music Reading Skills, and MUS 1250 Class Piano, MUS 1270 Class Voice, or MUS 1280 Class Guitar, or requisite playing and music-reading experience and instructor approval.

MUS-1820 Independent Study/Research in Music
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MUS-182H Honors Independent Study/Research in Music
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

MUS-2140 Studio Maintenance
2 Credits
Reviews basic electronics and sound principles, discusses set-up, calibration and operation of digital and analog recording and test equipment. Topics include studio layout, technical signal routing, equipment interface, grounding, maintenance and troubleshooting.
Laboratory: 4 hours
Prerequisite(s): RAT-1500 Recording Theory I, RAT-1511 Recording Lab I, and EET-1130 Basic Audio Electronics, or departmental approval.

MUS-2290 Basic Applied Music II
2 Credits
Individual instruction for pre-music and non-music majors on any standard band, orchestral instrument or voice. May be repeated for credit, however, no more than 4 credits may be applied to degree requirements.
Other Required Hours: A private lesson and 14 hours of concentrated practice each week.
Prerequisite(s): Departmental approval.

MUS-2301 Applied Piano Minor III
1 Credit
Third level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for third semester. A juried end of semester performance is required.
Other Required Hours: A private lesson and 7 hours of concentrated practice each week.
Prerequisite(s): MUS-1302 Applied Piano Minor II.

MUS-2302 Applied Piano Minor IV
1 Credit
Fourth level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for fourth semester. A juried end of semester performance is required.
Other Required Hours: A private lesson and 7 hours of concentrated practice each week.
Prerequisite(s): MUS-2301 Applied Piano Minor III.
MUS-2460 Applied Music III
2 Credits
Third level applied instruction in musical instruments and voice for college students pursuing degrees in music. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for third semester music majors. Analysis of the forms of music for the individual instrument and historical perspective. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.
Other Required Hours: A private lesson and 14 hours of concentrated practice are required each week.
Prerequisite(s): MUS-1620 Traditional Theory II, and MUS-1630 Ear Training II.
OAN Approved: OAH020 (3 of 4 courses, any 1 of the 4 courses may be taken).

MUS-2470 Applied Music IV
2 Credits
Fourth level applied instruction in musical instruments and voice for college students pursuing degrees in music. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for fourth semester music majors. Introduction to beginning teaching issues and techniques for the individual instruments. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.
Other Required Hours: A private lesson and 14 hours of concentrated practice are required each week.
Prerequisite(s): MUS-2460 Applied Music III, or departmental approval.
OAN Approved: OAH020 (4 of 4 courses, any 1 of the 4 courses may be taken).

MUS-2520 Jazz History I
2 Credits
Chronological study of history and development of classic jazz from origins through Swing period. Detailed attention to selected jazz masters and analysis of their most important works.
Lecture: 2 hours
Prerequisite(s): MUS-1650 Jazz Theory I.
OAN Approved: TMAH.

MUS-2540 Jazz History Listening I
1 Credit
Through directed, analytical and comparative listening experiences, students gain detailed knowledge of and familiarity with selected works of jazz masters (circa 1850s-1940s) from pre-jazz roots music and early jazz through swing jazz. A listening laboratory and aural training course, this is a companion and supplement to MUS-2520 Jazz History I.
Laboratory: 2 hours
Prerequisite(s): MUS-1650 Jazz Theory I, and concurrent enrollment in MUS-2520 History I, or departmental approval.

MUS-2600 Traditional Theory III
3 Credits
Theory, analysis, and composition of European classical music from origins through 18th century. Detailed attention to compositions from Medieval, Renaissance, Baroque and Classical periods.
Lecture: 3 hours
Prerequisite(s): MUS-1620 Traditional Theory II, and MUS-1630 Ear Training II.
OAN Approved: OAH052 (5 of 8 courses, all must be taken).

MUS-2610 Ear Training III
2 Credits
Third level identification of intervals, seventh chords, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1630 Ear Training II.
OAN Approved: OAH052 (6 of 8 courses, all must be taken).

MUS-2620 Traditional Theory IV
3 Credits
Theory, analysis, and composition of European classical music from 19th century through present time. In-depth analysis of modern compositional techniques and the works of representative composers.
Lecture: 3 hours
Prerequisite(s): MUS-2600 Traditional Theory III, and MUS-2610 Ear Training III.
OAN Approved: OAH052 (7 of 8 courses, all must be taken).

MUS-2630 Ear Training IV
2 Credits
Fourth level identification of intervals, seventh chords, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-2610 Ear Training III.
OAN Approved: OAH052 (8 of 8 courses, all must be taken).

MUS-2650 Jazz Theory II
2 Credits
Second level study of theoretical foundations of jazz. Includes diatonic and chromatic harmony, harmonic embellishment and substitution, voicings, rhythm, blues progressions and forms, phrase analysis, lyric import and analysis of transcribed solos and compositions from jazz repertoire.
Lecture: 2 hours
Prerequisite(s): MUS-1650 Jazz Theory I.

MUS-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Music complements and exceeds requirements and expected outcomes for an existing Music 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in Music, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.
MUS-2820 Advanced Independent Study/Research in Music
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

MUS-282H Advanced Honors Independent Study/Research in Music
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Non-Destructive Testing (ZNDT)
ZNNDT-1000 Nondestructive Testing - Introduction
0.3 CEU's
This course introduces students to terms, definitions and an overview of the methods and applications of the nondestructive testing profession. Methods to be briefly covered include: visual, liquid penetrant, magnetic particle, radiography and ultrasonic testing. Certification versus qualification of NDT personnel will be discussed.
Contact hours: 3
Not financial aid eligible.

ZNNDT-1001 Nondestructive Testing - Visual Inspection (VT) Levels 1 & 2
2.4 CEU's
Visual inspection is the most widely used method of nondestructive testing. This course covers the visual inspection techniques used to detect various discontinuities associated with the power plant industry, structural steel fabrication and construction industry, aerospace industry, petro-chemical industry and manufacturing processes. Borescopes and various weld inspection gages will be utilized in the lab.
Contact hours: 24
Not financial aid eligible.

ZNNDT-1002 Nondestructive Testing - Liquid Penetrant (PT) Levels 1 & 2
3.2 CEU's
This course covers the principles and practices of liquid penetrant inspection. Learn why and when to use various types of penetrant materials; proper techniques necessary for a reliable inspection; how to evaluate liquid penetrant indications and interpret standards and specifications; and how to inspect welds, castings, forgings and machined components.
Contact hours: 32
Not financial aid eligible.

ZNNDT-1003 Nondestructive Testing - Liquid Penetrant (PT) Levels 1 & 2
3.2 CEU's
This course covers the principles and practices of magnetic particle inspection. Learn how and why to use different types of equipment, magnetization techniques, when and why to use wet or dry particles, evaluate magnetic particle indications, interpret standards and specifications and inspect welds, castings, forgings and machined components.
Contact hours: 32
Not financial aid eligible.

ZNNDT-1004 Nondestructive Testing - Magnetic Particle (MT) Levels 1 & 2
3.2 CEU's
This course covers the principles and practices of magnetic particle inspection. Learn how and why to use different types of equipment, magnetization techniques, when and why to use wet or dry particles, evaluate magnetic particle indications, interpret standards and specifications and inspect welds, castings, forgings and machined components.
Contact hours: 32
Not financial aid eligible.

ZNNDT-1005 Nondestructive Testing - Magnetic Particle (MT) Levels 1 & 2
3.2 CEU's
This course covers the principles and practices of magnetic particle inspection. Learn how and why to use different types of equipment, magnetization techniques, when and why to use wet or dry particles, evaluate magnetic particle indications, interpret standards and specifications and inspect welds, castings, forgings and machined components.
Contact hours: 32
Not financial aid eligible.

ZNNDT-1006 Nondestructive Testing - Radiographic Inspection (RT) Level 1
4.2 CEU's
This course introduces radiographic principles, terms, definitions and basic theory. Students will gain an understanding of how an X-ray tube generates X-radiation, how to use X-ray film, film speed and film processing; digital imaging; and how to identify discontinuities.
Contact hours: 42
Not financial aid eligible.

ZNNDT-1007 Nondestructive Testing - Radiographic Inspection (RT) Level 2
4.2 CEU's
This course continues the instruction in introduced in Radiographic Inspection (RT) Level 1. Emphasis will be on radiographic evaluation and interpretation to industry standard codes such as the American Society of Mechanical Engineers, American Welding Society Structural Welding Code and American Petroleum Institute. Students will develop and evaluate radiographic exposures using X-ray machines with images captured on digital technology equipment utilizing radiographic techniques commonly used in industrial applications.
Contact hours: 42
Not financial aid eligible.

ZNNDT-1008 Nondestructive Testing - Ultrasonic Inspection (UT) Level 1
4.2 CEU's
This course introduces ultrasonic principles of sound wave propagation and term definitions. It will also introduce the student to calibration of the ultrasonic equipment, cover the linearity test and the various straight beam testing methods. Thickness measurements, Snells law and introduction to angle beam calibration and testing will also be covered.
Contact hours: 42
Not financial aid eligible.

ZNNDT-1009 Nondestructive Testing - Ultrasonic Inspection (UT) Level 2
4.2 CEU's
This course continues the instruction introduced in Ultrasonic Inspection (UT) Level 1, with an emphasis on immersion inspection principles and the use of angle beam testing to locate and size welding flaws. Advanced inspection will be performed using normal beam testing and angle beam testing techniques. This course covers the application of advanced ultrasonic techniques to procedures, codes and specifications as they apply to industry. Techniques used in the power, construction, manufacturing and aerospace industries will be performed.
Contact hours: 42
Not financial aid eligible.
**ZNDT-1014 Nondestructive Testing Internship**  
5.4 CEU's  
Initial course in a Fast Track training program in nondestructive testing. Course covers safety, math, blueprint reading, measurement and visual inspection techniques.  
Contact hours: 54  
Not financial aid eligible.

**Nuclear Medicine Technology (NMED)**

**NMED-1010 Nuclear Medicine Math and Statistics**  
1 Credit  
Examines the mathematics associated with the field of nuclear medicine including formulas and calculations involving radioactive decay, radiations safety, quality control, clinical procedures, statistical analysis, and kit and dose preparation.  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: admission to program.

**NMED-1100 Computers in Nuclear Medicine**  
1 Credit  
Study of computer systems used in the field of nuclear medicine. Topics include the gamma camera computer system interface, data acquisition, image processing software and techniques, quality control, tomography, and radiopharmacy record keeping. Teleradiography and medical informatics is included.  
Lecture: 0.5 hours. Laboratory: 1 hour  
Prerequisite(s): Departmental approval: admission to specified program.

**NMED-1200 Radiation Safety & Biology**  
2 Credits  
Potential effects of ionizing radiation on biological systems, especially humans including known high dose effects and theories of low dose effects. Radiation risks and applicable quantities and units. Estimating absorbed doses from internally administered radioactive materials. Safe handling of radioactive materials and the disposal of radioactive waste. Radiation safety regulations and safety guidelines including personnel monitoring and accurate record keeping.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to program.

**NMED-1301 Nuclear Medicine Procedures I**  
3 Credits  
Methods of performing patient organ visualization procedures in nuclear medicine. Review of anatomy, physiology and pathology of the various organs, radiopharmaceuticals, applicable instrumentation, methodologies, and techniques utilized, including radiation safety techniques, patient care, patient preparation, and patient imaging for nuclear studies.  
Lecture: 3 hours  
Prerequisite(s): Concurrent enrollment in NMED-130L Nuclear Medicine Laboratory I and departmental approval: admission to program.

**NMED-130L Nuclear Medicine Laboratory I**  
1 Credit  
Introduction to and application of lab practices of a Nuclear Medicine Technologist including radiopharmaceutical and instrumentation principles. Emphasis on radiation safety, practicing quality assurance, and instrumentation controls.  
Laboratory: 2 hours  
Prerequisite(s): Concurrent enrollment in NMED-1301 Nuclear Medicine Procedures I and departmental approval: admission to program.

**NMED-1401 Patient Care for Nuclear Medicine**  
1 Credit  
Practice of advanced patient care skills, essential to providing high-quality patient care. Includes patient positioning skills, patient safety, communication, age-specific needs, and emergency care. Respect for individuals from different cultures, beliefs, gender orientations, and socioeconomic backgrounds are discussed. Legal and compliance issues, scopes of practice, and patients' rights are addressed. Includes certification in cardiopulmonary resuscitation.  
Laboratory: 3 hours  
Prerequisite(s): NMED-1301 Nuclear medicine Procedures I, and departmental approval: admission to program.

**NMED-1501 Radiation Physics**  
2 Credits  
Study of physics as it relates to radiation and medical imaging. Focuses on the principles of radioactivity, effects of radiation on matter, and emerging technologies as they relate to nuclear medicine and advanced molecular imaging. Topics include applicable classical physics concepts, atomic structure, mass-energy relationships, types of radiation, calculations of radioactive decay, production of radionuclides and x-rays, and principles and operation of SPECT, PET, CT, MRI and fusion imaging systems.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: Admission to the Nuclear Medicine program.

**NMED-1603 Nuclear Radiopharmacy and Pharmacology**  
3 Credits  
Theory and practice of radiopharmacy including non-radioactive interventional drugs and contrast media. Addresses the routes of administration, bio-distribution mechanisms, interfering agents, contraindications, and adverse effects for all administered materials. Preparation and calculation of the dose to be administered, quality control, radiation safety, and applicable regulations are also covered.  
Departmental approval: admission to the program.  
Lecture: 3 hours

**NMED-1701 Nuclear Medicine Instrumentation**  
3 Credits  
Demonstration of instrumentation use for both non-imaging and imaging such as: monitoring equipment (surveys), dose calibrators, well counters, uptake probes, laboratory equipment, gamma probe and gamma camera. Provide review regarding imaging components, use, and QC performance and requirements. Explain and demonstrate configuration, function and application of computers and networks used in the reconstruction of images. Includes practical considerations, concepts, data analysis, measurement concerns, and spectroscopy.  
Lecture: 3 hours  
Prerequisite(s): NMED-1501 Radiation Physics, or concurrent enrollment; and NMED-1603 Nuclear Radiopharmacy and Pharmacology.
NMED-1770 Immunology and Pathophysiology for Sectional Imaging
2 Credits
Introduction to pathophysiology and immunology. Emphasis is on common pathologies found in nuclear medicine, computed tomography, and magnetic resonance imaging and the appearance of these pathologies across multiple planes in various imaging protocols. Includes all commonly-imaged body systems with recognition of abnormal conditions across multiple planes and ability to make the associated imaging changes required to adequately demonstrate the patients pathology.
Lecture: 2 hours
Prerequisite(s): Concurrent enrollment in NMED-1780 Sectional Anatomy for Advanced Molecular Imaging.

NMED-1780 Sectional Anatomy for Advanced Molecular Imaging
2 Credits
Study of human anatomy and its appearance in multiple planes. Includes all commonly imaged body systems and areas as well as discernment of abnormal pathology and how to make the associated imaging changes required to adequately demonstrate the patients anatomy and pathology. Covers imaging planes and anatomy imaged by nuclear medicine, computed tomography, and magnetic resonance imaging.
Lecture: 2 hours
Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I; and concurrent enrollment in NMED-1770 Immunology and Pathophysiology for Sectional Imaging; and departmental approval: admission to program.

NMED-2301 Nuclear Medicine Procedures II
3 Credits
Study of diagnostic nuclear medicine procedures relating to the central nervous, genitourinary, and cardiovascular systems as well as tumor imaging. This course includes anatomy and physiology, pathophysiology, and protocols for routine and non-routine nuclear medicine procedures.
Lecture: 3 hours
Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I and NMED-1603 Nuclear Radiopharmacy and Pharmacology; and NMED-1501 Radiation Physics.

NMED-230L Nuclear Medicine Laboratory II
1 Credit
Continued application of lab practices of a Nuclear Medicine Technologist including experimentation with radiopharmaceutical and instrumentation principles. Emphasis on radiation safety, practicing quality assurance, and instrumentation.
Laboratory: 2 hours
Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I and concurrent enrollment in NMED-2301 Nuclear Medicine Procedures II.

NMED-2600 Molecular and Fusion Imaging
2 Credits
Examines the methodology of advanced molecular imaging and fusion imaging in the field of nuclear medicine and analyzes current trends and advances in the field. Focus is made on patient preparation, imaging protocols, radiation safety, and special considerations for fusing nuclear medicine studies with computed tomography and magnetic resonance imaging.
Lecture: 2 hours
Prerequisite(s): NMED-1501 Radiation Physics and NMED-1701 Nuclear Medicine Instrumentation.

NMED-2660 Nuclear Medicine Therapy
1 Credit
Study the principles and practices of nuclear medicine therapies including palliation, cancer treatment, theranaustics, radioimmunotherapies with monoclonal antibodies, and regulations for therapy. Examines special considerations in regards to patient preparation, radiation safety, and dose determination for various therapies. Examines radionuclides used in therapy including characteristics and production. Emerging technologies and clinical trials will be explored.
Lecture: 1 hours
Prerequisite(s): NMED-1200 Radiation Safety & Biology.

NMED-2700 Nuclear Medicine Research Methods
1 Credit
Basic types of scientific and clinical research, research methods, and the components of a research study. Requires the research, review, discussion, and analysis of current research related to the field of nuclear medicine and advanced molecular imaging.
Lecture: 1 hours
Prerequisite(s): NMED-2600 Molecular and Fusion Imaging and NMED-2660 Nuclear Medicine Therapy.

NMED-2940 Nuclear Medicine Field Experience I
3 Credits
Clinical experience in the nuclear medicine department under the direct supervision of qualified personnel. Participation in variety of nuclear medicine procedures emphasizing application of theory related to nuclear imaging protocols, patient care, radiopharmaceutical preparation, quality control, survey and wipe techniques, instrumentation, radiation accident prevention and radiation safety to include clinical projects and case studies. Clinical rotations through variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies.
Lecture: 1 hour
Other Required Hours: Field Experience: 360 hours experience at a clinical site per semester (average of 36 hours per week).
Prerequisite(s): NMED-2301 Nuclear Medicine Procedures II, or departmental approval.

NMED-2950 Nuclear Medicine Field Experience II
4 Credits
Supervised sessions in nuclear medicine department with specific assignments and case studies to include math problems and instrumentation. Clinical rotations through variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies.
Lecture: 1 hour
Other Required Hours: Field Experience: 544 hours of experience at a clinical site per semester (average of 36 hours per week).
Prerequisite(s): NMED-2940 Nuclear Medicine Field Experience I or departmental approval.
NMED-2960 Nuclear Medicine Field Experience III
4 Credits
Capstone course in Nuclear Medicine. Supervised sessions emphasizing team approach to daily operation of a nuclear medicine department. Includes patient care, procedures, radiation safety, quality control, equipment manipulation and patient positioning. Clinical rotations through a variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies. Preparation for employment in nuclear medicine and for the American Registry of Radiologic Technologists’ examination in Nuclear Medicine to include mock examinations.
Lecture: 1 hour
Other Required Hours: Field Experience: 544 hours of experience at a clinical site per semester (average of 36 hours per week).
Prerequisite(s): NMED-2950 Nuclear Medicine Field Experience II or departmental approval.

Nurse Aide Training (ZNAT)

ZNAT-1000 State Tested Nursing Assistant Training Program
10.8 CEU's
If you are a caring individual who enjoy helping people, the STNA position is for you. Working with patients who need your assistance and care will provide a sense of purpose at work. Are you looking for a rewarding career where you are able to help others live a more fulfilling life? If so, train for this in-demand health career through our Ohio Department of Health approved training program. Register Today with Tri-C!
Contact hours: 108
Not financial aid eligible.

ZNAT-1013 State Tested Nursing Assistant (Accelerated)
8.8 CEU’s
If you are a caring individual who enjoy helping people, the STNA position is for you. Working with patients who need your assistance and care will provide a sense of purpose at work. Are you looking for a rewarding career where you are able to help others live a more fulfilling life? If so, train for this in-demand health career through our Ohio Department of Health approved training program. Register Today with Tri-C!
Contact hours: 88
Not financial aid eligible.

Nursing (NURS)

NURS-1010 Introduction to Healthcare Concepts
1 Credit
Introduces students to conceptual learning and examines concepts relevant to health care and professional nursing. Covers role development of the professional nurse, clinical judgment, communication, evidenced-based practice, health promotion, informatics, patient-centered care, professionalism, safety, collaboration within an interdisciplinary team, and specific standards/regulations that apply at the LPN and RN levels of practice.
Lecture: 1 hour
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English placement test; and MATH-0955 Beginning Algebra, or appropriate score on Math placement test.

NURS-1010 Introduction to Patient Care Concepts
4 Credits
Introduces basic concepts necessary to care for patients within a variety of health care settings specifically focusing Long Term Care settings. Emphasis on developing observation and communication skills, safety and emergency procedures, mobility/ergonomics, promoting and respecting patient rights, personal and restorative care, basic nursing skills, mental health and social service needs, and infection control. Successful course completion qualifies student to register for state nurse aid exam and Ohio Department of Health STNA Certificate of Completion.
Laboratory: 4.5 hours
Other Required Hours: 112.5 hours of clinical lab experience.
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English placement test; and MATH-0955 Beginning Algebra, or appropriate score on Math placement test; and concurrent enrollment in NURS-1000 Introduction to Health Care Concepts, and departmental approval: cleared background check and successful completion of the HESI.

NURS-1300 Health Assessment
2 Credits
Focuses on development of assessment skills including obtaining a health history, performing physical assessment of the adult, and evaluating physiologic changes related to aging. Major emphasis on developing interviewing skills, assessing cultural factors, and utilizing basic assessment techniques. Documentation and reporting of findings discussed. Laboratory screening procedures introduced.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval: admission to Associate Degree Nursing program or Practical Nursing program. CTAN Approved: CTPADNUR002 (1 of 3 courses, all must be taken).

NURS-1451 Self-Care Needs: Adult Life Span
7 Credits
Study of basic nursing care of adults through the adult life span, using Orem’s self-care deficit theory. Specialized care of the elderly is included. Introduces major nursing curriculum themes: nursing process, communication, human development, cultural diversity, critical thinking and role of the associate degree nurse. Basic concepts of pharmacology and normal nutrition presented. Note: Laboratory hours includes both on-campus and clinical experiences.
Lecture: 4 hours. Laboratory: 2 hours
Other Required Hours: 7 Clinical Lab hours per week.
Prerequisite(s): BIO-1100 Introduction to Biological Chemistry, BIO-2331 Anatomy and Physiology I or concurrent enrollment; and ENG-1010 College Composition I, MATH-1240 Contemporary Mathematics, NURS-1300 Health Assessment or concurrent enrollment; and PSY-1010 General Psychology; and PSY-2020 Life Span Development, or concurrent enrollment; and departmental approval: admission to Nursing Program. CTAN Approved: CTPADNUR002 (2 of 3 courses, all must be taken).
NURS-1601 Health Deviations I
7 Credits
Focuses on patients with acute and chronic health deviations. Critical thinking, Orem’s self-care deficit theory, and the nursing process provide the framework for delivery of nursing care to adult patients. Emphasis on health deviations related to respiratory and musculoskeletal function, fluid and electrolyte balance, reproductive, and urologic disorders, surgery, diabetes, pain, HIV and oncology.
Lecture: 4 hours. Laboratory: 2 hours
Other Required Hours: 7 Clinical Lab hours per week.
Prerequisite(s): NURS-1451 Self-Care Needs: Adult Life Span, and BIO-2341 Anatomy and Physiology II or concurrent enrollment; and BIO-2500 Microbiology, or concurrent enrollment; and departmental approval. CTAN Approved: CTPADNUR002 (3 of 3 courses, all must be taken).

NURS-160A Access to Registered Nursing
3 Credits
Designed to facilitate transition of Licensed Practical Nurses into Associate Degree Nursing program. Concepts related to role of associate degree nurse, therapeutic communication, nursing process and teaching/learning.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Departmental approval.

NURS-160D Health Deviations I for LPNs
3 Credits
Designed for Licensed Practical Nurses entering the Associate Degree Nursing program with advanced credit. Introduces nursing curriculum themes. Focuses on patients with acute and chronic health deviations related to fluid and electrolyte balance, urologic disorders, diabetes, and oncology. Laboratory hours are completed at assigned clinical site.
Lecture: 2 hours
Other Required Hours: 3 Clinical Lab hours per week.
Prerequisite(s): NURS-160A Access to Registered Nursing, or concurrent enrollment; BIO-2341 Anatomy and Physiology II, or concurrent enrollment; BIO-2500 Microbiology, or concurrent enrollment; FSY-2020 Life Span Development, or concurrent enrollment; and departmental approval: admission to the Associate Degree Nursing Program.

NURS-1701 Community/Home Nursing
1 Credit
Principles and competencies related to community health nursing are presented Critical thinking, Orem’s self-care deficit theory, and the nursing process provide the framework for the delivery of nursing care to individuals and groups within the community. Emphasis is placed on health promotion, risk reduction, cultural sensitivity, and nursing management of vulnerable populations and patients with selected sexually transmitted, parasitic, and other infectious disease processes.
Lecture: 1 hour
Prerequisite(s): NURS-1601 Health Deviations I or concurrent enrollment; or NURS-160A Access to Registered Nursing and NURS-160D Health Deviations I for LPNS; and departmental approval.

NURS-2301 Specialized Health Care Needs
8 Credits
Critical thinking, Orem’s self-care deficit theory, and the nursing process provide the framework for delivery of nursing care to the specialized populations of childbearing families, children and their families, and individuals with psychiatric-mental health needs. Emphasis is on therapeutic nurse-patient relationships and communication, and common psychiatric and behavioral health conditions; pediatric growth and development and common pediatric conditions; and care of childbearing women and their families.
Lecture: 5 hours
Other Required Hours: 9 Clinical Lab hours per week.
Prerequisite(s): NURS-1601 Health Deviations I, or NURS-160D Health Deviations I for LPNS; and NURS-1701 Community/Home Nursing, and departmental approval.

NURS-2501 Health Deviations II
8 Credits
Capstone Course. Focuses on chronic, acute and critically ill patients. Orem’s theory of self-care deficits, critical thinking, and the nursing process provide the framework for delivery of nursing care to groups of patients and their families. Concepts of communication, human development, and cultural diversity are integrated throughout course material. Emphasis is placed on care required to meet self-care deficits for patients with cardiac, hematological, gastrointestinal, respiratory, neurological, skin, autoimmune, and endocrine disorders. Principles of management and delegation are applied through a nursing leadership experience.
Lecture: 4 hours. Laboratory: 76 hours
Other Required Hours: 10.7 Clinical Lab hours per week.
Prerequisite(s): NURS-2301 Specialized Health Care and departmental approval.

Occupational Therapy Assisting Technology (OTAT)

OTAT-1300 Occupational Therapy Principles
2 Credits
Provides an overview of the history, development, philosophy, theory and practice, and the role of Occupational Therapy in today's health care environment. Includes discussion of the role and responsibilities of the occupational therapy assistant. Study of models of health, illness, wellness, therapeutic and professional relationships; exploration of cultural, ethical and legal issues in health care and the framework of Occupational Therapy practice. Also covers, the educational requirements and roles of occupational therapy practitioners as well as legal and ethical issues affecting occupational therapy practices.
Lecture: 2 hours
Prerequisite(s): None.

OTAT-1310 Task Analysis
2 Credits
 Enables students to perform task analysis of varied activities addressing occupational performance areas of self-maintenance, play/leisure, and productivity. Covers selection of adaptive devices, adapting/grading and use of assistive technology.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I or concurrent enrollment, and departmental approval.
OTAT-1320 Fundamentals of Developmental Disabilities
2 Credits
Overview of developmental disabilities including physical and psychosocial conditions commonly referred to and treated by occupational therapists.
Lecture: 2 hours
Prerequisite(s): OTAT-1300 Occupational Therapy Principles, and departmental approval.

OTAT-1330 Techniques in Developmental Disabilities
3 Credits
Application of occupational therapy skills and techniques used in treatment programs planned for persons with developmental disabilities.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): OTAT-1310 Task Analysis, and departmental approval.

OTAT-1420 Fundamentals of Psychosocial Dysfunction
2 Credits
Overview of psychosocial issues and psychiatric diagnoses in mental health and other clinical settings commonly referred to occupational therapy for treatment. Focuses on signs, symptoms and effects that mental illness and psychosocial issues have on an individual’s life tasks and roles.
Lecture: 2 hours
Prerequisite(s): PSY-2020 Life Span Development or concurrent enrollment, and OTAT-1320 Fundamentals of Developmental Disabilities.

OTAT-1430 Techniques in Psychosocial Dysfunction
3 Credits
Designed to familiarize student with a variety of therapeutic techniques, processes, and programming used by occupational therapists treating individuals with psychosocial dysfunction. Emphasis on self-awareness and group dynamics relevant to clinical settings serving clients with psychological and psychiatric disorders.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): OTAT-1330 Techniques in Developmental Disabilities, and departmental approval.

OTAT-1850 Practicum I
2 Credits
Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignment to agencies includes traditional and non-traditional settings servicing clients with developmental disabilities.
Lecture: 1 hour
Other Required Hours: Practicum: 105 hours per semester. Seminar: 15 hours per semester.
Prerequisite(s): OTAT-1310 Task Analysis, and departmental approval.

OTAT-1860 Practicum II
2 Credits
Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignment to agencies includes traditional and non-traditional settings serving clients with psychosocial dysfunctions.
Lecture: 1 hour
Other Required Hours: Practicum: 105 hours per semester. Seminar: 15 hours per semester.
Prerequisite(s): PSY-2020 Life Span Development or concurrent enrollment, and departmental approval.

OTAT-1980 Therapeutic Use of Self
2 Credits
Practical experiences in relating to others through a series of intrapersonal, interpersonal, cross-cultural and small group activities. Students develop an understanding of the implementation of therapeutic use of self in a variety of communication contexts.
Lecture: 2 hours
Prerequisite(s): None

OTAT-2320 Fundamentals of Physical Dysfunction
4 Credits
Overview of physical disabilities including physical and psychosocial conditions commonly referred to and treated by occupational therapist. Presented within a developmental frame of reference covering adult through old age.
Lecture: 4 hours
Prerequisite(s): PTAT-1300 Functional Anatomy, OTAT-1420 Fundamentals of Psychosocial Dysfunction, and OTAT-1430 Techniques in Psychosocial Dysfunction.

OTAT-2330 Techniques in Physical Disabilities
4 Credits
Overview of occupational therapy treatment strategies and techniques for physically disabled adults from late adolescence to the end of life. Emphasis on current, authentic and effective occupational therapy practice.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): PTAT-1300 Functional Anatomy, and OTAT-1430 Techniques in Psychosocial Dysfunction.

OTAT-2340 Occupational Therapy Issues
3 Credits
Capstone course in Occupational Therapy Assisting. Integrates knowledge and skills acquired in academic work and field practice placements to clarify role and function of Certified Occupational Therapy Assistant; evolving issues, concepts and responsibility to professional organizations; credentialing process; research; continuing education and public relations. Role of COTA as activities director.
Lecture: 3 hours
Prerequisite(s): OTAT-2330 Techniques in Physical Disabilities, or concurrent enrollment.

OTAT-2820 Advanced Independent Study/Research in Occupational Therapy Assisting Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OTAT-2860 Practicum III

2 Credits

Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignments to health care agencies include, but are not limited to, hospitals, nursing homes, and rehabilitation centers serving adult and/or geriatric populations with physical conditions referred to occupational therapy.

Lecture: 1 hour
Other Required Hours: Practicum: 105 hours per semester. Seminar: 15 hours per semester.
Prerequisite(s): OTAT-1860 Practicum II, and departmental approval.

OTAT-2940 Field Experience

3 Credits

Students assigned to two consecutive 8-week full-time field placements under supervision of licensed occupational therapists. Provides student opportunities to apply principles and techniques learned in previous courses to actual treatment situations in preparation for entry level practice.

Other Required Hours: Field experience: 576 hours per semester.
Prerequisite(s): OTAT-2320 Fundamentals of Physical Dysfunction, OTAT-2330 Techniques in Physical Disabilities, OTAT-2860 Practicum III, and departmental approval.

Online Professional Development Courses (ZONL)

ZONL-1058 Networking, Intermediate - Online

2.4 CEU's

Learn real-world applications for the concepts you learned in Introduction to Networking. Build your knowledge of networks and networking, with detailed treatments of TCP/IP, how switches and routers operate, DNS, and more.

Contact hours: 24
Not financial aid eligible.

ZONL-1438 Intermediate CSS and XHTML -Online

2.4 CEU's

Today's websites require streamlined code that adapts to a variety of devices, screen resolutions, Web browsers, and user needs. In this course, you'll take your CSS and HTML skills to the next level and learn how to create professional-quality websites.

Contact hours: 24
Not financial aid eligible.

ZONL-1578 Introduction to Illustrator CS5 - Ed2Go Online

2.4 CEU's

Adobe Illustrator is the industry standard for creating vector images you can resize to fit on anything from a dome to a billboard. And if you think of vector graphics as hard-edged and sharp, think again — because you can now create stunning blends, brushstrokes, and shading effects.

Contact hours: 24
Not financial aid eligible.

ZONL-1586 Intermediate Photoshop CS5 -Online

2.4 CEU's

If you're already using the basic tools in Adobe Photoshop CS5, take your photo-editing skills to a new level! Become more experienced using layers, layer masks, and other advanced features.

Contact hours: 24
Not financial aid eligible.

ZONL-1607 Intermediate Java Programming - Online

2.4 CEU's

Deepen your understanding of the Java programming language, and start writing programs that are more sophisticated and professional. Learn how to save data permanently on a disk by writing it to a sequential data file. Organize information using multiple classes in Java's class hierarchy and inheritance. Learn how to create GUI applications in Java using tools like windows, menus, buttons, text boxes, check boxes, scroll bars, and other GUI tools.

Contact hours: 24
Not financial aid eligible.

ZONL-1679 Intermediate Flash CS5 - Online

2.4 CEU's

It's time to take your Flash design skills to the next level! In this course, you'll learn how to use Movie Clip symbols to create movies inside movies. Then you'll practice using ActionScript to control Movie Clips and the objects inside them, and you'll use external ActionScript class files to draw and animate graphics dynamically. After that, you'll discover how to load and format external content such as text and images on the fly, mastering techniques for keeping your lengthy SWFs lean, mean, and responsive. This course is full of ActionScript examples, and you'll even learn how to use ActionScript to create Flash applications that make decisions based on user input. You'll also delve into advanced Flash animation and special-effects techniques including the Motion Editor, Bone tool, and Spray Brush tool. By the time you finish this course, you'll know more than enough to confidently market yourself as a Flash designer.

Contact hours: 24
Not financial aid eligible.
ZONL-1758 Project 2013 Essentials - Online
0.2 CEU's
The Microsoft Project 2013 Essentials course uses a scenario to guide students through the basic steps of creating and tracking a plan. You will create a new plan to learn how to create a schedule, add tasks to the plan, add resources to the plan, and assign the resources to tasks. Additionally, you will learn how to create Project reports to share with others, and track progress on tasks.
Contact hours: 2
Not financial aid eligible.

ZONL-1774 How to Get Started in Game Development
2.4 CEU's
Whether you want to start your own indie game project or work with a small creative team or for a large game development studio, this course will prepare you to start developing your own games.
Contact hours: 24
Not financial aid eligible.

ZONL-1775 Introduction to Dreamweaver CS6
2.4 CEU's
In this course, you will work with images, build navigation elements, discuss effective layout methods, learn where and when to use tables, examine successful site planning strategies, and more using Dreamweaver CS6. Windows Requirements: Intel® Pentium® 4 or AMD Athlon® 64 processor, Microsoft® Windows® XP with Service Pack 2 (Service Pack 3 recommended); Windows Vista® Home Premium, Business, Ultimate, or Enterprise with Service Pack 1; or Windows 7, at least 512MB of RAM, at least 1GB of available hard-disk space; additional free space required during installation, 1280x800 display with 16-bit video card, Java Runtime Environment 1.6 (included) and DVD-ROM drive. Macintosh Requirements: Multicore Intel processor, Mac OS X v10.6.8 or v10.7, at least 512MB of RAM, at least 1.8GB of available hard-disk space for installation; additional free space required during installation, 1280x800 display with 16-bit video card, Java Runtime Environment 1.6 and DVD-ROM drive.
Contact hours: 24
Not financial aid eligible.

ZONL-1776 Intermediate Flash CS6
2.4 CEU's
Take your Adobe Flash skills to the next level to create more sophisticated and powerful Flash applications.
Contact hours: 24
Not financial aid eligible.

ZONL-1777 Intermediate Dreamweaver CS6
2.4 CEU's
Examine pure CSS layout, incorporate multimedia elements such as video, and manipulate data using XML data and XSL in this new intermediate-level Dreamweaver course. Get hands-on experience with Dreamweaver as you develop a sample site using your new skills.
Contact hours: 24
Not financial aid eligible.

ZONL-1780 Introduction to Flash CS6
2.4 CEU's
Using Flash, you can create a wide variety of file formats, including apps (iOS and Android), HTML5, and video that work on virtually any device. Learn how to create animation, interactive movies, mobile apps, and develop several full-blown Flash applications in Flash CS6.
Contact hours: 24
Not financial aid eligible.

ZONL-1789 Introduction to Microsoft Project 2013
2.4 CEU's
Discover how to effectively plan, implement, and control projects using the world's most popular project management software, Microsoft Project 2013. From sequencing tasks, producing a baseline, and assigning resources and costs, to tracking progress, analyzing variances, and revising your project plan, Microsoft Project can help you organize all your project's details quickly and effectively.
Contact hours: 24
Not financial aid eligible.

ZONL-1836 Intermediate CSS3 and HTML5
2.4 CEU's
In this course, you’ll take your CSS and HTML skills to the next level and learn how to create professional-quality websites.
Contact hours: 24
Not financial aid eligible.

ZONL-1839 Developing Microsoft® .NET Applications for Windows® (Visual C# .NET)
1.4 CEU's
In this course, you will learn the skills required to build Windows Forms applications by using the .NET Framework. You will create and deploy fully functional, accessible, and secure Windows Forms. This course is intended for the intermediate programmer who is responsible for designing and building Windows Forms applications by using the .NET Framework. It is designed for developers who have C# development skills. Typically, these individuals perform the following key activities: help create functional specifications; design and develop user interfaces; create and test prototypes; and write Windows Forms applications.
Contact hours: 14
Not financial aid eligible.

ZONL-1845 Windows Azure for IT Pros Jump Start
0.81 CEU's
View the latest capabilities with the newest Windows Azure release! This Jump Start focuses on key technical topics including Windows Azure Virtual Machines, Virtual Networks and PaaS Implementation for IT Pros.
Course length: 8.10 hours, excluding labs and assessments.
Contact hours: 8.1
Not financial aid eligible.

ZONL-1850 Administrative Professional with Microsoft Office Specialist 2013
45.5 CEU's
The Administrative Professional with Microsoft Office Specialist 2013 training program teaches the key skills you need to become an Administrative Professional and prepare you for the Microsoft Office Specialist Certification Exams 77-418, 77-425, and 77-426 (Word), 77-420, 77-427, and 77-428 (Excel), 77-422 (PowerPoint), 77-423 (Outlook), and 77-424 (Access).
Contact hours: 455
Not financial aid eligible.
ZONL-1853 Microsoft PowerPoint 2013 Certification Training 6 CEU's

The Microsoft PowerPoint 2013 Certification Training program prepares students for the Microsoft Office Specialist (MOS) Certification Exam 77-422. This course prepares you to create professional presentations for any audience, including internal business meetings, sales conferences, or client presentations. The material is presented in a step-by-step manner, and you will learn by completing readings and hands-on exercises and watching video presentations. The course also includes quizzes and exams, so your skills will be tested at regular intervals throughout the material. Through these methods, you will learn essential PowerPoint skills including creating customized presentations with templates, adding special effects, using slides, notes, and handout masters, creating, editing, and importing charts, managing hyperlinks, creating custom shows, and securing and sharing presentations with others.  
Contact hours: 60  
Not financial aid eligible.

ZONL-1855 Microsoft Access 2013 Certification Training 9 CEU's

The Microsoft Access 2013 (MOS) training program teaches the skills you need to work in Access 2013 and prepares you for the Microsoft Office Specialist Certification Exam 77-424. You will learn basic database concepts, as well as how to design and create databases and tables. You will also learn how to query tables, and create forms and reports. Additionally, you will learn how to design databases at an advanced level. The material is presented in a step-by-step manner, and you will learn by completing readings and hands-on exercises, in addition to watching video presentations. The course includes quizzes and exams so you can assess your skills at regular intervals.  
Contact hours: 90  
Not financial aid eligible.

ZONL-1858 Administering Microsoft SQL Server 2012 Jump Start 0.64 CEU's

This Jump Start focuses on security, data management, and disaster recovery/high availability, along with their implications for the configuration of the enterprise. It includes demos on storage design and capacity configuration, security configuration, optimization of the instance, and automation. It helps you prepare for Exam 70-462, a component of the MCSA: SQL Server certification, and it is the prerequisite for the Implementing a Data Warehouse with SQL Server Jump Start course.  
Contact hours: 6.37  
Not financial aid eligible.

ZONL-1859 Course 70007: Master Pages and CSS, Client-side Scripts and Services 0.07 CEU's

This course describes the implementation of master pages, CSS, client-side scripts, and client-side services into ASP.NET web applications. Master pages combined with the concepts of Themes, Skins, and Cascading Style Sheets (CSS) allow you to easily structure and consistently apply a design to your web application. Code executed on the server side can have a performance overhead when posting back simple control interactions, such as a selection in a list or a button click to update one or more values displayed. When performance is of the essence, you can use client-side code or script to make your web application appear much more responsive, and to alleviate the load on the web server.  
Contact hours: .67  
Not financial aid eligible.

ZONL-1861 Administering Windows Server 2012 4 CEU's

This course is part two in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. The course focuses on the administration tasks necessary to maintain a Windows Server 2012 infrastructure (configuring and troubleshooting name resolution, user and group management with Active Directory Domain Services (AD DS) and Group Policy, implementing Remote Access solutions such as DirectAccess, VPNs and Web Application Proxy, implementing Network Policies and Network Access Protection, Data Security, deployment and maintenance of server images, as well as update management and monitoring of Windows Server 2012 environments). This course maps directly to the Microsoft Certified Solutions Associate (MCSA): Exam 70-412: Administering Windows Server 2012. Labs in this course are based on Windows Server 2012 R2 and Windows 8.1.  
Contact hours: 40  
Not financial aid eligible.

ZONL-1862 Configuring Advanced Windows Server 2012 Services 4 CEU's

This course is part of a 3-part series that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. It focuses on advanced configuration of services necessary to deploy, manage and maintain a Windows Server 2012 infrastructure, such as advanced networking services, Active Directory Domain Services (AD DS), Active Directory Rights Management Services (AD RMS), Active Directory Federation Services (AD FS), Network Load Balancing, Failover Clustering, business continuity and disaster recovery services as well as access and information provisioning and protection technologies such as Dynamic Access Control (DAC), and Web Application Proxy integration with AD FS and Workplace Join. This course maps directly Exam 70-412: Configuring Advanced Windows Server 2012 Services. Note: Labs in this course are based on Windows Server 2012 R2 and Windows 8.1.  
Contact hours: 40  
Not financial aid eligible.

ZONL-1870 Introduction to Database Development 2.4 CEU's

This course is an introduction to Windows 10 and Office 2016 and is designed to provide the fundamental computer competencies needed to survive and prosper in today's fast-changing workplace.  
Contact hours: 24  
Not financial aid eligible.

ZONL-1878 Introduction to Microsoft Project 2016 2.4 CEU's

Use this popular project management software to plan, implement, and control projects, track costs and resources, and generate reports using Gantt Chart and Calendar views.  
Contact hours: 24  
Not financial aid eligible.
ZONL-1882 CompTIA™ Network+ Certification Training

11 CEU's

This program will prepare you for a career as a network technician and qualify you to take the CompTIA™ Network+ certification exam (N10-006). CompTIA’s Network+ certification is vendor-neutral and will give you the skills you need to manage, maintain, troubleshoot, install, and configure basic network infrastructure. You’ll master basic networking concepts and gain a fundamental knowledge of network design, security, cloud computing, forensics, advanced IP addressing concepts, and routing and switching.

Contact hours: 110
Not financial aid eligible.

ZONL-1885 Introduction to Windows 10

2.4 CEU’s

Learn to use this powerful new operating system, including how to customize your desktop, manage files and folders, and navigate the Web with the new Microsoft Edge browser.

Contact hours: 24
Not financial aid eligible.

ZONL-7036 Project Management Essentials with CAPM Prep

3.5 CEU’s

In this program, you’ll learn the knowledge and skills essential to project managers and those who work on projects in other support roles. The materials in this program are aligned with the international recognized standards of project management. This program is oriented to concepts and knowledge areas such as Time, Cost, Risk and Communications. Each lesson focuses exclusively on a single topic so that you can more easily grasp that topic before moving onto the next.

Contact hours: 30
Not financial aid eligible.

Optical Technology (OPT)

OPT-1310 Theoretical Optics I

2 Credits

Study of ophthalmic and geometric optics, modern lens theory and construction as it relates to design, fitting and dispensing of spectacles and contact lenses.

Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program.

OPT-1320 Theoretical Optics II

2 Credits

Study of theories of light, geometric laws of refraction, modern lens theory, and construction as it relates to finishing, surfacing, and dispensing of complex and special lens types. Includes calculation of refractive errors, corrective methods and calculating American National Standards Institute (ANSI) standards for complex ophthalmic eyewear.

Lecture: 2 hours
Prerequisite(s): OPT-1310 Theoretical Optics I.

OPT-1400 Introduction to Fabrication Principles

1 Credit

Basic understanding of ophthalmic prescriptions and lenses. Use of ophthalmic equipment to neutralize and verify single vision, multifocal, and progressive addition lenses. Introduction to the skills necessary to meet accepted opticianry standards, including laboratory safety, personal safety, and instrument maintenance.

Lecture: .5 hours. Laboratory: 1.5 hour
Prerequisite(s): Departmental approval: admission to program.

OPT-1411 Basic Spectacle Fabrication

1 Credit

Introduction to ophthalmic laboratory procedures. Basic laboratory concepts and manipulative skills required to make a pair of single vision eyewear. Includes topics on laboratory safety, personal safety, and maintenance of ophthalmic machines and ophthalmic instruments.

Lecture: .5 hours. Laboratory: 1.5 hour
Prerequisite(s): OPT-1400 Introduction to Fabrication Principles or concurrent enrollment.

OPT-1421 Advanced Spectacle Fabrication

1 Credit

Advanced laboratory concepts and manipulative skills required to make a pair of single vision or segmented multifocal eyewear. Includes topics on laboratory safety, personal safety, application of machine and instrument maintenance.

Laboratory: 3 hours
Prerequisite(s): OPT-1411 Basic Spectacle Fabrication.

OPT-1510 Optical Dispensing I

3 Credits

Introduction, history, and development of modern opticianry, spectacles, and fitting procedures. Principles of interpersonal relationships. Instruction in basic frame types and parts.

Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval: admission to Optical Technology program.

OPT-1520 Optical Dispensing II

3 Credits

Beginning principles of design, fitting, verification and dispensing of spectacles.

Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): OPT-1510 Optical Dispensing I.

OPT-1610 Contact Lens I

2 Credits

Focuses on history of contact lenses, differences between hard and soft contact lenses, and physical and physiological properties of contact lenses.

Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to program.

OPT-1621 Contact Lens II

2 Credits

Principles of operation and design of instruments applicable to fitting of rigid gas permeable contact lenses. Optical principles and materials applicable to design processes and relationship to physical condition and structure of the eye in its abnormal state. Discussion of the delivery of both soft and rigid gas permeable contact lenses.

Lecture: 2 hours
Prerequisite(s): OPT-1610 Contact Lens I.

OPT-1710 Introduction to Patient Care

3 Credits

Introduction to concepts and skills important to an allied health professional in the field of Ophthalmology such as ocular anatomy and physiology, patient history, and lensometry.

Lecture: 3 hours
Prerequisite(s): Departmental approval.
OPT-1721 Advanced Patient Care
2 Credits
Study of skills that are important to an allied health professional in the field of Ophthalmology such as refraction, tonometry, depth perception, pupillary evaluation, and instrument maintenance. Designed to prepare the student to work within an Ophthalmology practice as well as pursue certification as an Ophthalmic Assistant.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): OPT-1710 Introduction to Patient Care.

OPT-1801 ST: Intro to Optical Tech
1 Credit
This course engages students with the Tri-C community and introduces resources and skills necessary for student success. Topics will include personal responsibility, motivation, career and academic planning, time management, and study skills. Students will learn what is necessary to be successful in the ophthalmic environment, including: the ophthalmic professions and the scope of practice of each, job outlook, basic ocular anatomy, and common ocular conditions and diseases.
Lecture: 1 hours
Prerequisite(s): None.

OPT-1820 Independent Study/Research in Optical Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

OPT-1911 Ophthalmic Assisting Directed Practice
4 Credits
Application of ophthalmic assisting techniques in a clinical setting. Emphasis on records keeping, preliminary examination of the eye, cleaning and disinfection of equipment, ophthalmic pharmacology, refracting, and professionalism.
Other Required Hours: Directed Practice: 30 hours per week for the duration of 16 weeks.
Prerequisite(s): Concurrent enrollment in OPT-1721 Advanced Patient Care

OPT-2501 Optical Business
3 Credits
Covers organizations, sales, third party insurance, inventory, hiring and supervision. Interpret financial data; set sales goals; evaluate inventory control systems; attracting and retaining superior employees.
Lecture: 3 hours
Prerequisite(s): Departmental approval.

OPT-2550 Advanced Optical Dispensing Lab
1 Credit
Development of advanced dispensing techniques including troubleshooting, advanced lens design, advanced fitting theory and repair techniques.
Laboratory: 3 hours
Prerequisite(s): OPT-1520 Optical Dispensing II.

OPT-2650 License Review Spectacle
1 Credit
Focus on key optical concepts as they relate to spectacles with in-depth look at theory, optical nomenclature, and test domains outlined by American Board of Opticianry Exam.
Lecture: 1 hours
Prerequisite(s): Departmental approval.

OPT-2660 License Review Contact Lens
1 Credit
Focus on key optical concepts as they relate to contact lenses with in-depth look at theory, optical nomenclature, and test domains outlined by National Contact Lens Exam.
Lecture: 1 hours
Prerequisite(s): Departmental approval.

OPT-2702 Refractometry
2 Credits
Entry level knowledge of theory and performance of refraction as it relates to human eye. Study of ocular structures, ametropia neutralization, astigmatism, objective and subjective refraction, anomalies of vision, and clinical refraction and retinoscopy.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): OPT-1710 Introduction to Patient Care, or departmental approval.

OPT-2750 Ophthalmic Third Party Insurance
1 Credit
Specialized study of third party insurance as it relates to Ophthalmology and Optical Dispensing. Discussion of the interpretation of ophthalmic benefits and proper submission of claims form to ophthalmic third party insurance providers.
Lecture: 1 hours
Prerequisite(s): ENG-1010 College Composition I.

OPT-2820 Advanced Independent Study/Research in Optical Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

OPT-2940 Optical Field Experience I
2 Credits
Supervised field experience in an ophthalmic health care setting designed to emphasize role of dispensing optician. Students gain exposure to professional practice through direct supervision by a licensed optician. Expect students to demonstrate advancing assessment skills and assume more individual responsibility as member of an ophthalmic department.
Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester)
Prerequisite(s): Concurrent enrollment in OPT2971 Optical Field Experience Seminar I.
OPT-2950 Optical Field Experience II
2 Credits
Supervised field experience in a clinical ophthalmic setting designed to emphasize role of dispensing optician. Students assigned to clinical sites under direct supervision of licensed optician. Students take on advanced responsibilities and have more input into decision making process. Demonstrate advanced assessment skills in patient care and business management and assume more individual responsibility as member of optical team.
Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester)
Prerequisite(s): OPT-2940 Optical Field Experience I, and concurrent enrollment in OPT-2971 Optical Field Experience Seminar I.

OPT-2971 Optical Field Experience Seminar I
3 Credits
Integrates concepts and knowledge gained from field experience rotations into total learning process. Focuses on patient and professional communication and lifelong learning. Discusses current issues.
Other Required Hours: Seminar: 3 hours per week
Prerequisite(s): Concurrent enrollment in OPT-2940 Optical Field Experience I.

OPT-2981 Optical Field Experience Seminar II
3 Credits
Capstone course in Optical Technology. Integrates advanced concepts and knowledge gained from field experience into total learning process. Focus on organization of health care delivery system. Discussions of current issues included.
Other Required Hours: Seminar: 3 hours per week
Prerequisite(s): Concurrent enrollment in OPT-2950 Optical Field Experience II.

Organizational Strategy & Assessment (ZSTA)

Paralegal Studies (PL)

PL-1001 Introduction to the Paralegal Profession
3 Credits
Introduction to the practical aspects of working within the paralegal field. Instruction includes the legal status of paralegals, career opportunities for paralegals, legal ethical constraints, sources of American law, an overview of the U.S. legal system, possible career settings for paralegals, and paralegal skills, including organizational skills and attention to detail. Students are encouraged to begin professional development, including membership in paralegal organizations. A significant portion emphasizes the importance of legal writing.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

PL-1300 Civil Procedure
3 Credits
Examine Rules of Courts which govern civil lawsuits, with emphasis on the Ohio Rules of Civil Procedure. Analyze and apply Ohio laws and rules pertaining to commencement of action, service, motion practice, discovery issues (including rules pertaining to e-Discovery). Distinguish between federal rules, Ohio rules, and county local rules. Students begin portfolio of legal documents developed throughout program of study, including the creation of an electronic case file.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and PL-1001 Introduction to Paralegal Profession or concurrent enrollment.

PL-1401 Legal Research and Writing I
3 Credits
Introduction to skills essential for effective identification, analysis, and research of primary and secondary sources needed to address legal issues. Learn to formulate research plans that require efficient use of basic research tools to locate primary and secondary authority; obtain practice in accessing sources in print and online through introduction to Lexis Advance; and utilize research and analytical skills in order to complete drafting projects, such as an in-house legal memorandum and an opinion letter, consistent with professional standards of style and citation. Emphasis on validating research and quickly accessing statutory and case law.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-1010 College Composition I; and PL-1001 Introduction to Paralegal Profession.

PL-1460 Workers’ Compensation Law
3 Credits
Lecture: 3 hours
Prerequisite(s): None.

PL-1502 Law Office Technology
3 Credits
Designed for student already conversant with basic functions of word processing, presentation software, database management, and spreadsheet design. Student will perform advanced word processing, spreadsheet and presentation operations to create and manage legal documents and files. Focus on use of computers related to paralegal functions in timekeeping, docket control, litigation support, and case management. Activities constructed to replicate law office experiences and tasks, including E-Discovery fact-finding simulations.
Lecture: 3 hours
Prerequisite(s): ITF-1090 Computer Applications, or departmental approval; or equivalent experience or skills.
PL-1600 Alternative Dispute Resolution
2 Credits
Paralegal involvement within a variety of dispute resolution mechanisms including litigation, voluntary arbitration, court-annexed or mandatory arbitration, negotiation and mediation will be both instructed to the student and practiced by the student. The student will work through the preparation of an arbitration scenario and a mediation scenario, including conducting both legal and factual investigations for these cases.
Lecture: 2 hours
Prerequisite(s): None.

PL-1700 Employment Law
3 Credits
Emphasizes both statutory and common laws, which govern the employment relationship. Specific attention is given to the laws that create, as well as terminate the employment relationship, documentation of employment practices, and litigation of employment-related claims, including discrimination and wrongful termination. Research involving the laws governing the rights of the employer and the employee regarding privacy in the workplace. Emphasis on client interviewing as a role of the paralegal in the employment litigation process.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

PL-1710 Immigration Law and Procedures
3 Credits
Introduction to immigration law covering the various family-based, employment-based, and status-based permissions that can be used to obtain permission to enter and/or remain in the United States. Reviews substantive immigration law, forms, and legal procedures as they relate to non-immigrants and immigrants, and provides experience in completing a variety of commonly used forms used by non-citizens to obtain permission to enter and/or remain in the United States.
Lecture: 3 hours
Prerequisite(s): PL-1001 Introduction to Paralegal Profession.

PL-1730 Criminal Law for Paralegals
3 Credits
The role of the paralegal in the American criminal justice system for both the prosecution and the defense. Criminal law and procedure will be explored along with the legal documents relevant to criminal law practice.
Lecture: 3 hours
Prerequisite(s): PL-1001 Introduction to Paralegal Profession, or concurrent enrollment; and ENG-1010 College Composition I, or concurrent enrollment; or departmental approval: permission from program manager.

PL-1820 Independent Study/Research in Paralegal Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PL-2301 Torts and Evidence
4 Credits
Fundamental principles of tort law (personal injury, malpractice, intentional tort, and products liability) to explore paralegal responsibilities in trial setting. Students collect and prepare evidence according to Ohio and Federal rules of evidence.
Lecture: 4 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1401 Legal Research and Writing I.

PL-2401 Legal Research and Writing II
3 Credits
Advancement of skills learned in Legal Res & Writing I with advanced research assignments using Internet and computer resources for research of state and federal cases, codes, administrative regulations, factual information and secondary authorities. Assess legal problems and locate authority and law-related resources on the Internet. Utilize legal specialty Internet resources as well as Lexis Advance and/or Westlaw®. Prepare an appellate brief, using Ohio Citation format.
Lecture: 3 hours
Prerequisite(s): PL-1401 Legal Research and Writing I; or departmental approval.

PL-2410 Intellectual Property
3 Credits
Introduction to intellectual property law and experience in completing tasks commonly carried out by intellectual property paralegals. General overview of relevant federal and state law related to copyrights, trademarks, service marks, patents, and trade secrets. Information about the nature of material protected and duration of protection are covered for each type of intellectual property. Experience in utilizing the United States Patent and Trademark Office's and U.S. Copyright Office's online databases to conduct searches of existing patent, trademark, and copyright records. Develop familiarity with defenses that can be advanced in intellectual property matters.
Lecture: 3 hours
Prerequisite(s): PL-1401 Legal Research and Writing I.

PL-2421 Wills, Trusts, and Estates
4 Credits
Overview of paralegal concepts and tasks associated with pre-mortem estate planning and post-mortem estate administration. Covers forms of property ownership and documentation utilized to manage property before and after death. Discuss available assistance for older individuals and legal forms utilized to empower third parties assistance regarding management of health and financial matters. Explain post-mortem estate administration procedures including discovery of assets, appointment of fiduciaries, taxation, and property transfer. Also covers advantages/disadvantages of avoiding probate and tax impact on estate planning and administration. Complete paralegal tasks associated with full probate administration.
Lecture: 4 hours
Prerequisite(s): PL - 1001 Introduction to Paralegal Profession or concurrent enrollment.
PL-2440 Business Transactions
3 Credits
Introduction to laws that structure various business relationships such as agency, contracts, bailments, sales, secured transactions and commercial paper. Utilization of appropriate forms to structure such relationships.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1401 Legal Research and Writing I.

PL-2460 Business Organizations
3 Credits
Introduction to various business entities including sole proprietorships, partnerships, corporations, and licensed professional associations. Drafting of partnership agreements and incorporation documents. Introduction to tax consideration and Securities and Exchange Commission ramifications.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1401 Legal Research & Writing I.

PL-2510 Juvenile Law
2 Credits
Designed to train students to effectively assist the juvenile law practitioner. Topics covered include abuse-neglect-dependency; juvenile delinquency; custody, support, and visitation issues; and paternity. Covers the basics of Ohio juvenile law and the process of analyzing juvenile issues; provides practical experience in completing court forms and other documents utilized by juvenile law attorneys; and surveys current and ongoing juvenile law-related issues of importance and concern.
Lecture: 2 hours
Prerequisite(s): PL-1300 Civil Procedure.

PL-2520 Debtor/Creditor Law
3 Credits
Study of basic legal principles governing rights and duties of debtors and creditors. Introduction to Law of Bankruptcy, specifically Chapters 7, 11, and 13 of United States Bankruptcy Code and applicable Ohio law. Preparation of bankruptcy petitions, related schedules and documents needed for initial filing of petitions. Debt counseling protection, compromise and collection techniques including garnishment, foreclosure and attachment of personal property explored.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1401 Legal Research and Writing I.

PL-2540 Family Law
3 Credits
Basic principles and trends in family law including marriage, annulment, dissolution, divorce, child support, child custody, visitation, paternity, and adoption. Emphasis on ethical issues, drafting of appropriate documents, preparing discovery, court proceedings, computer-assisted calculation, and conducting interviews to obtain sensitive client information. The role of the paralegal in assisting the supervising attorney with practical tasks commonly associated with family law matters is explored.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure.

PL-2560 Advanced Litigation
3 Credits
Paralegal practice in preparation for civil litigation through the creation of trial notebooks. Perform the required tasks of mock litigation scenarios including drafting pleadings, subpoenas, motions through the trial preparation process in investigations and discovery. Gather, draft, organize and summarize trial documents and prepare for courtroom demonstration of litigation process.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-2301 Torts and Evidence or concurrent enrollment.

PL-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Paralegal Studies complements and exceeds requirements and expected outcomes for an existing Paralegal Studies 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Paralegal Studies, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

PL-2820 Advanced Independent Study/Research in Paralegal Studies
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PL-282H Advanced Honors Independent Study/Research in Paralegal Studies
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

PL-2851 Paralegal Practicum
1 Credit
Provides supervised work experience in law firm or other legal setting. Student obtains actual work experience by performing paralegal duties under direct supervision of attorney and/or paralegal.
Other Required Hours: Practicum: 10 hours per week.
Prerequisite(s): Concurrent enrollment in PL-2991 Paralegal Capstone, and departmental approval. completion of all required courses and completion of all program requirements.
PL-2991 Paralegal Capstone
1 Credit

Capstone course in Paralegal Studies. This course is designed to ready the student for entry into the legal community through intensive study of the paralegal profession and additional development of the student’s organizational, communication and critical analysis skills using modalities such as portfolio preparation and mock interviews.

Lecture: 1 hours
Prerequisite(s): Departmental approval: completion or in process of completion, or all required courses and completion of all program requirements.

Performance-Based Programs (ZPBP)

ZPBP-1012 Job Link Services Certificate Program
4 CEU's
Contact hours: 40
Not financial aid eligible.

ZPBP-1019 ATA Personal Development
12 CEU's
Employability and life skills for young adults, age 18 - 21 who are participants in the Advanced Technology Academy
Contact hours: 120
Not financial aid eligible.

ZPBP-1021 NSS Job Link Job Readiness
4 CEU's
Contact hours: 40
Not financial aid eligible.

ZPBP-1024 MAT Job Link Job Readiness
4 CEU's
Contact hours: 40
Not financial aid eligible.

ZPBP-1028 ATA Professional Development Class - 5 week
5.4 CEU's
Shortened version of ATA Personal Development Course
Contact hours: 54
Not financial aid eligible.

ZPBP-1029 iCustomer Care Job Link Services Certificate Program
4 CEU's
Contact hours: 40
Not financial aid eligible.

ZPBP-1030 Professionalism in the Health Care Environment
2.7 CEU's
Learn the key skills needed for career advancement in the healthcare industry and other career fields. Understand the importance of personal qualities that are critical for advancement in all career areas: critical thinking; responsibility; flexibility; self-esteem; interpersonal communication and sociability; integrity/honesty; professional work attitude and work habits. Appreciate the value of these skills and personal qualities as they relate to career advancement. Understand skill requirements from the employer’s perspective.
Contact hours: 27
Not financial aid eligible.

ZPBP-1031 Career Advancement Competitive Edge (30 Hours)
3 CEU's
Learn the key skills needed for career advancement in multiple career fields. Understand the importance of personal qualities that are critical for advancement in all career areas: critical thinking; responsibility; flexibility; self-esteem; interpersonal communication and sociability; integrity/honesty; professional work attitude and work habits. Appreciate the value of these skills and personal qualities as they relate to career advancement. Understand skill requirements from the employer’s perspective.
Contact hours: 30
Not financial aid eligible.

ZPBP-1032 Professionalism in the Health Care Environment (20 Hours)
2 CEU's
Learn the key skills needed for career advancement in the healthcare industry and other career fields. Understand the importance of personal qualities that are critical for advancement in all career areas: critical thinking; responsibility; flexibility; self-esteem; interpersonal communication and sociability; integrity/honesty; professional work attitude and work habits. Appreciate the value of these skills and personal qualities as they relate to career advancement. Understand skill requirements from the employer’s perspective.
Contact hours: 20
Not financial aid eligible.

Pharmacy Technology (PHM)

PHM-1300 Introduction to Pharmacy Practice
3 Credits
Overview of fundamentals of pharmacy practice including technician’s role in drug distribution in various settings, pharmacy abbreviations and terminology, management, organizations, information resources, regulations, law and ethics.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test. CTAN Approved: CTPT001 (2 of 2 courses, both must be taken).

PHM-1350 Pharmacy Practice I
3 Credits
Overview of fundamentals of pharmacy practice in various practice settings with respect to safe and accurate preparation and distribution of parenteral medications. Students learn the technician’s role in drug preparation, drug packaging, and drug labeling.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval: admission to program.

PHM-1360 Pharmacy Practice II
3 Credits
Fundamentals of pharmacy practice including technician’s role in drug distribution in community, home health care, nursing home, and alternative practice settings. Focuses on oral and topical dosage forms including handling, preparation, packaging, labeling, and distribution.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PHM-1350 Pharmacy Practice I, or departmental approval.
PHM-1450 Pharmacology and Therapeutic Principles I
3 Credits
Overview of fundamentals of pharmacology including drug classification, brand and generic drug nomenclature, common drug therapy associated with various disease states, drug indications, side effects, and parameters for safe drug usage.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to program.

PHM-1460 Pharmacology and Therapeutic Principles II
3 Credits
Fundamentals of pharmacology including drug classification, brand and generic drug nomenclature, common drug therapy associated with various disease states, drug indications, side effects, and parameters for safe drug usage.
Lecture: 3 hours
Prerequisite(s): PHM-1450 Pharmacology and Therapeutic Principles I, or departmental approval.

PHM-1751 Medication Calculations for Sterile Preparations
1 Credit
Applications and activities to build skills in medication calculations related to sterile preparations for pharmacy, nursing, and allied health. Includes metric system, formula manipulation, solving algebraic equations and systems, body surface area (BSA), and weight-based dose calculations. Basic skill reviews for metric system, fractions, ratios and percentages.
Lecture: 1 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate math placement score; or departmental approval.

PHM-1760 Calculations for Compounding and Dispensing
1 Credit
Applications and activities to build skills in medication calculations, conversions, and measurements related to medication compounding and dispensing. Includes children’s dosages, weight-based dose calculations, prescription filling, billing, and inventory applications using metric system, formula manipulation, algebraic systems and equations. Basic skill reviews on fractions, ratios and percentages.
Lecture: 1 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate math placement score; or departmental approval.

PHM-1860 Pharmacy Technology Practicum I
3 Credits
Supervised practical field experience designed to emphasize role of technician in various traditional practice settings. Students assigned to practicum training sites and work under direct supervision of registered pharmacists and certified pharmacy technicians to gain exposure to professional practices.
Lecture: 1 hour
Other Required Hours: Practicum: 14 hours per week. Seminar: 1 hour per week.
Prerequisite(s): PHM-1300 Introduction to Pharmacy Practice; and PHM-1350 Pharmacy Practice I or PHM-1360 Pharmacy Practice II; and PHM-1450 Pharmacology and Therapeutic Principles I or PHM-1460 Pharmacy and Therapeutic Principles II; and departmental approval: site assignments.

PHM-2080 Pharmacy Technician Examination Review
1 Credit
Global review of pharmacy practice, pharmacy law, pharmacology, compounding, and calculations. Test taking skills and registration procedure covered. Special focus on exam content outline topics to assist student preparing to take certification examinations for pharmacy technicians.
Lecture: 1 hours
Prerequisite(s): PHM-1360 Pharmacy Practice II, or concurrent enrollment, or departmental approval may be extended to students with adequate documentation showing familiarity with pharmacy practice and ability to perform calculations. CTAN Approved: CTPT002 (1 of 2 courses, both must be taken).

PHM-2701 Current Topics in Pharmacy Practice
4 Credits
Capstone course in Pharmacy Technology. Current topics and changes in practice of pharmacy detailed. Among topics discussed: major trends, issues, and initiatives in pharmacy and healthcare; evolving roles of pharmacists and pharmacy technicians and the interpersonal knowledge and skills required in the pharmacy environment; medication safety practices; current health issues facing men, women, and children of diverse cultures; emerging therapies and the drug approval process; and wellness promotion.
Lecture: 4 hours
Prerequisite(s): PHM-1350 Pharmacy Practice I or concurrent enrollment; and PHM-1360 Pharmacy Practice II; and PHM-1860 Pharmacy Technology Practicum I or concurrent enrollment; and departmental approval. CTAN Approved: CTPT002 (2 of 2 courses, both must be taken).

PHM-2820 Advanced Independent Study/Research in Pharmacy Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PHM-2860 Pharmacy Technology Practicum II
3 Credits
Supervised practical field experience designed to emphasize role of technician in various traditional practice settings. Students assigned to practicum training sites and work under direct supervision of registered pharmacists and certified pharmacy technicians to gain exposure to professional practices. Students will build on experience gained in previous practicum assignment.
Lecture: 1 hour
Other Required Hours: Practicum: 14 hours per week. Seminar: 1 hour per week. Note: Course does not include a lecture hour; listed lecture hour reflects contact time for required seminar.
Prerequisite(s): PHM-1860 Pharmacy Technology Practicum I, PHM-2701 Current Topics in Pharmacy Practice or concurrent enrollment, and departmental approval. CTAN Approved: CTPT003.
PHM-2870 Pharmacy Technology Practicum III
3 Credits
For students pursuing experience in IV admixture, sterile technique, or other advanced pharmacy practice. Supervised practical field experience. Students assigned to practicum training sites and work under direct supervision of registered pharmacists and certified pharmacy technicians to gain exposure to professional practices. Students will build on experience gained in previous practicum assignments.
Lecture: 1 hour
Other Required Hours: Practicum: 14 hours per week. Seminar: 1 hour per week.
Prerequisite(s): PHM-2860 Pharmacy Technology Practicum II, and departmental approval.

Philosophy (PHIL)

PHIL-1000 Critical Thinking
3 Credits
This course serves as an introduction to principles of critical and creative thinking with an emphasis on real-world practical applications. Formal and informal tools of logical analysis will be applied to controversial topical issues.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

PHIL-1010 Introduction to Philosophy
3 Credits
Basic concepts, reasoning skills, and attitudes employed in philosophical inquiry. Study and analysis of perennial philosophical problems through critical examination of writings of classical and contemporary philosophers. Prepares students for further work in philosophy and any area of learning requiring reasoned views.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.
OAN Approved: TMAH and OAH045.

PHIL-101H Honors Introduction to Philosophy
3 Credits
Introduction to basic concepts, reasoning skills, and attitudes employed in philosophical inquiry. Study and analysis of perennial philosophical problems through critical examination of writings of classical and contemporary philosophers. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy and any area of learning requiring reasoned views.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMAH and OAH045.

PHIL-1020 Introduction to Logic
3 Credits
Introduction to evaluation of arguments. Concentration on basic principles of formal logic and application to evaluation of arguments. Explores notions of implication and proof and use of modern techniques of analysis including logical symbolism.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

PHIL-179H Honors Contract in Philosophy
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hour
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

PHIL-1820 Independent Study/Research in Philosophy
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PHIL-182H Honors Independent Study/Research in Philosophy
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

PHIL-2010 Comparative World Religion
3 Credits
Study of origin, nature, and meaning of major world religions: Judaism, Christianity, Islam, Buddhism, Hinduism, and Confucianism.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.
PHIL-2020 Ethics
3 Credits
Study of systems and problems of human conduct with applications to moral problems and decisions. Prepares students with work in philosophy, applied ethics, and any area of learning requiring reasoned views.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H College Composition I.
OAN Approved: TMAH and OAH046.

PHIL-202H Honors Ethics
3 Credits
Study of systems and problems of human conduct with applications to moral problems and decisions. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy, applied ethics, and any area of learning requiring reasoned views.
Lecture: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I, or ENG-1010 College Composition I, with a grade of "B" or higher; or departmental approval.
OAN Approved: TMAH and OAH046.

PHIL-2031 Philosophy of Science
3 Credits
Study of concept formation in science and examination of patterns of scientific investigation and method. Treatment of concepts such as observation, classification, causality, law of nature, explanation, and theory.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.
OAN Approved: TMAH.

PHIL-2040 Philosophy of Art
3 Credits
Examination of types of art theories, their implications for art interpretation, art criticism, creative activity of artist, and appreciation of art objects.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

PHIL-2050 Bioethics
3 Credits
Introduction to study and analysis of moral philosophy as applied to issues in healthcare with emphasis on developing students’ abilities to correctly identify moral problems and defend their moral judgments.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.
OAN Approved: TMAH.

PHIL-205H Honors Bioethics
3 Credits
An in-depth study and analysis of moral philosophy as applied to issues in health and life sciences with emphasis on developing students’ abilities to correctly identify moral problems and defend their moral judgements.
Lecture: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I; or departmental approval.
OAN Approved: TMAH.

PHIL-2060 Business Ethics
3 Credits
Application of moral philosophy including ethical theories and moral principles to issues in business and other organizations with an emphasis on developing the students ability to identify and analyze ethical issues.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

PHIL-208H Honors Social Justice
3 Credits
An advanced intensive study of systems and problems of human conduct with practical application and decision making components. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy, applied ethics, and any area of learning requiring reasoned views. Participants will select a theme that addresses questions of social justice and civic responsibility. Mentor supported, student-directed study, seminars and excursions will serve as basis for examination of the chosen theme. Students will create themerelevant project proposals for eventual presentation.
Lecture: 3 hours
Prerequisite(s): ENG-101H Honors College Composition I; or ENG-1010 College Composition I with grade of "B" or higher; or departmental approval: 3.5 GPA.

PHIL-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Philosophy complements and exceeds requirements and expected outcomes for an existing Philosophy 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Philosophy, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.
PHIL-280H Honors Spec Topics-Philosophy
1-3 Credits
Honors study of selected topics or current issues in Philosophy. Provides
student an opportunity to explore various topics in greater detail (see
Credit Schedule of classes for current offerings). Repeatable for different
topics. No more than six credits of special topics may be applied toward
elective and/or program graduation degree requirements.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval: Members of the Honors Program;
successfully completed a minimum of two Honors course ( 6 or more credit
hours) with a grade of A or B.

PHIL-2819 Special Topics in the Philosophy & History of Capitalism
3 Credits
The history of the philosophical foundations of capitalism. Topics
include individualism, community, liberty, equality, justice, markets, and
democratic representation. The topics will be covered in a historical
context with an emphasis on contemporary leadership applications.
Lecture: 3 hours
Prerequisite(s): ENG 1010 College Composition I or ENG-101H Honors College
Composition I, or departmental approval.

PHIL-2820 Advanced Independent Study/Research in Philosophy
1-3 Credits
Directed individual advanced study. Study/research title and specific
content arranged between instructor and student. May be repeated for a
maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and
ENG-0990 Language Fundamentals II, or appropriate score on English
Placement Test.

PHIL-282H Advanced Honors Independent Study/Research in Philosophy
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in
the Honors Course Checklist used to approve regular honors courses.
Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and
ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Physical Education (PE)

PE-1000 Personal Fitness
2 Credits
Introduction to techniques, principles and benefits of personal conditioning program including flexibility, cardiovascular fitness and muscle endurance training.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None. CTAN Approved: CTBPO001 (6 of 7 courses, all must be taken).

PE-1010 Personal Strength Development
2 Credits
Activities which incorporate the five components of fitness: body composition, cardiovascular fitness, muscle strength, muscle endurance and flexibility with emphasis on strength training.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

PE-1020 Weight Training
1 Credit
Basic instruction in theory of using weights to improve muscular fitness and in fundamentals of correct lifting techniques using dumbbells, nautilus, universal and/or various other machines.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1031 Introduction to Lifetime Fitness I
2 Credits
Participation in basic total wellness/fitness education program. Through instruction, supervision, and evaluation, student will exercise with increased knowledge on how to develop a safe fitness program for his/her goals and needs. Additional fees required.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

PE-1041 Introduction to Lifetime Fitness II
1 Credit
Designed for students who have completed PE-1031 Introduction to Lifetime Fitness I, PE-1000 Personal Fitness; or PE-1010 Personal Strength Development and desire a more individualized total wellness/fitness education program. Additional fees required.
Laboratory: 2 hours
Prerequisite(s): PE-1031 Introduction to Lifetime Fitness I, or PE-1000 Personal Fitness, or PE-1010 Personal Strength Development.

PE-1051 Adapted Lifetime Fitness
1 Credit
Designed for student who desires to participate in individualized circuit training program and has physical limitations which prevent participation in individualized current fitness courses. Students must be registered with the Access Office to enroll. Contact Director for Physical Education. Additional fees required.
Laboratory: 2 hours
Prerequisite(s): Departmental approval: must be registered with Access Office.

PE-1060 Cardio-Fitness
1 Credit
Cardio/respiratory conditioning class, consisting of flexibility and aerobic conditioning exercises and use of variety of training machines.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1070 Walking/Jogging
1 Credit
Introduces walking/jogging activities including warm-up, stretching, and cool down.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1080 Low Impact Aerobics
1 Credit
Instruction and practice in aerobic dance movements which involve minimum stress of joints. Includes exercises to improve cardiovascular fitness, flexibility, and muscle tone.
Laboratory: 2 hours
Prerequisite(s): None.
PE-1100 Step Aerobics
1 Credit
Instruction and practice in aerobic dance movements utilizing a step with emphasis on individual performance levels including techniques to improve cardiovascular fitness, flexibility, muscle tone and strength.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1120 Adapted Physical Education
1 Credit
Individualized program for students with temporary or permanent physical limitations. Contact campus director of Physical Education for registration procedures.
Laboratory: 2 hours
Prerequisite(s): Departmental approval: must be registered with Access Office.

PE-1140 Bowling
1 Credit
Instruction and participation in bowling fundamental skills course. Additional fee required.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1150 Golf for Beginners
1 Credit
Instruction in and development of skills, fundamentals of the swing, and physical skills of the game. Additional fees required.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1160 Golf for Players
1 Credit
Advanced class in golf emphasizing playing the game of golf and improving skills. Most of class time scheduled off campus. Additional fees required.
Laboratory: 2 hours
Prerequisite(s): PE-1150 Golf for Beginners, or departmental approval: comparable skill.

PE-1190 Self Defense I
1 Credit
Instruction, practice and skill development in basic self-defense. Students gain appreciation of fitness and self-discipline.
Laboratory: 2 hours
Prerequisite(s): None. CTAN Approved: CTBPO001 (7 of 7 courses, all must be taken).

PE-1215 Snowboarding
1 Credit
Development of basic skills of snowboarding, selection and use of equipment, terminology, and safety rules. Extra fee required for off-site snowboarding.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1220 Skiing
1 Credit
Development of basic skiing techniques and safety practices and appreciation of skiing as lifetime activity. Extra fee required for off-site skiing.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1230 Tennis for Beginners
1 Credit
Instruction, practice and skill development of tennis as a lifetime activity. Scoring, rules and etiquette of tennis included.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1240 Tennis for Players
1 Credit
Instruction, practice and skill development in tennis with emphasis on Singles and Doubles competition. Additional instruction and drills of beginners skills included.
Laboratory: 2 hours
Prerequisite(s): PE-1230 Tennis for Beginners, or departmental approval.

PE-1260 Basketball
1 Credit
Introduction to fundamentals of basketball for men and women. Rules, safety, and basketball skills stressed.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1270 Softball
1 Credit
Instruction and participation in softball for men and women. Basic softball skills, rules and game strategy stressed.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1280 Soccer
1 Credit
Instruction and participation in soccer for men and women. Basic soccer skills, rules and game strategy stressed.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1290 Volleyball
1 Credit
For men and women. Instruction and practice of volleyball skills including safety procedures, competitive experience, and appreciation of volleyball as lifetime activity.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1300 Aqua Fitness
1 Credit
Non-swimming water fitness class. Includes various types of water workouts in both the shallow and deep ends, cardio and toning components. Swimming skills not required.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1310 Shallow Water Exercise
1 Credit
Shallow water exercises to improve aerobic fitness, muscle tone and flexibility.
Laboratory: 2 hours
Prerequisite(s): None.
PE-1320 Deep Water Exercise  
1 Credit  
Cardiovascular exercises, muscle toning, strengthening, and flexibility in deep water. Requires students to be comfortable in deep water wearing a buoyancy device.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1330 Swimming I  
1 Credit  
Fundamental swimming skills for non-swimmers and shallow water swimmers including water adjustment, floating, breathing techniques, basic swimming strokes, and water safety skills.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1340 Swimming II  
1 Credit  
Swimming for the intermediate and advanced swimmer in the development and/or refinement of a wide variety of swimming strokes. Includes front and back crawl, backstroke, breaststroke, butterfly, sidestroke, elementary backstroke, underwater swimming, turns, and diving. Also includes water safety skills, deep water entry, and treading water.  
Laboratory: 2 hours  
Prerequisite(s): PE-1330 Swimming I, or departmental approval: equivalent skill.

PE-1370 Cardio Kickboxing  
1 Credit  
Instruction and practice in kickboxing/martial arts fitness based program. Emphasis on proper technique, safe kicks, punches, and combinations. Kickboxing movements performed to improve aerobic endurance, flexibility, balance, muscle strength and tone. Instruction and practice with kickboxing bags and gloves included.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1380 Aqua Kickboxing  
1 Credit  
Traditional kickboxing moves, adapted for the water, conducted in both the shallow and deep ends. Swimming skill is not required.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1400 Whitewater Rafting  
2 Credits  
Introduction to outdoor activities including instruction and participation in whitewater rafting. Includes lecture sessions in preparation for outdoor experience. Activity may include weekend and/or overnight participation. Additional laboratory fees vary according to activity. Check course schedule for specific information.  
Lecture: 1 hour. Laboratory: 2 hours  
Prerequisite(s): Departmental approval.

PE-1410 Backpacking  
2 Credits  
Introduction to outdoor activities, including instruction and participation in backpacking, hiking, and orienteering. Includes lecture sessions in preparation for the outdoor experience. Weekend and/or overnight participation required.  
Lecture: 1 hour. Laboratory: 2 hours  
Prerequisite(s): Departmental approval: physical fitness test.

PE-1421 Camping  
2 Credits  
Fundamental class in camping designed to develop basic knowledge and skills pertinent to safe and enjoyable camping. Activity may include weekend and/or overnight participation. Additional laboratory fees vary according to activity. Check current Credit Schedule for specific information.  
Lecture: 1 hour. Laboratory: 2 hours  
Prerequisite(s): None.

PE-1430 Physical Relaxation Techniques  
1 Credit  
Introduces student to basic physical techniques of relaxation including breathing, Jon Kabut-Zinn's body scan method, active and passive meditation. Includes awareness of body tension and stressors.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1440 Yoga  
1 Credit  
Emphasis on basic Hatha yoga practice consisting of pranayama (breath control), asanas (postures), vinyasa (flow of postures), mantra (chanting), mudra (hand positioning) and dhyana (meditation) to benefit and bring balance to the body, mind, and spirit. Introduction to basic yoga philosophies also included.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1450 Intermediate Yoga  
1 Credit  
Emphasis on various Hatha yoga practices at the intermediate and advanced levels. The class will consist of intermediate and advanced pranayama (breath control), asanas (postures), vinyasa (flow of postures), mantra (chanting), and dhyana (meditation) to benefit and bring balance to the body, mind, and spirit.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1460 Pilates  
1 Credit  
Emphasis on proper breathing, core strength, kinesthetic awareness, mind over muscle, strengthening of opposing muscle groups and disease prevention as it relates to stress.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1470 Core Strength  
1 Credit  
Focuses on strengthening the core muscles of the trunk of the body and improving balance. Consists of a warm up, conditioning segment using body weight, stability balls, and other core conditioning equipment, and concludes with a stretching segment.  
Laboratory: 2 hours  
Prerequisite(s): None.

PE-1480 Yoga and Pilates  
1 Credit  
Provides instruction, information, and exploration about the mind-body systems of yoga and pilates, with emphasis on physical exercise, relaxation, mindfulness, and self-awareness.  
Laboratory: 2 hours  
Prerequisite(s): None.
PE-1490 Tai Chi
1 Credit
Explores the traditional Chinese exercise of Tai Chi. Provides for the development of basic skills and techniques that lead toward an integration of mind and body to enhance fitness, health, and well-being. Focus is on the Yang style of 24 forms.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1510 Beginner Middle Eastern Belly Dance
1 Credit
Emphasizes beginner and advanced beginner Middle Eastern belly dance movements and patterns. Provides an overall body workout to improve and enhance cardiovascular fitness, muscle tone, coordination, balance and self-esteem. No prior experience is required.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1520 Intermediate Middle Eastern Belly Dance
1 Credit
This course will focus on Middle Eastern belly dance movements, patterns, and combinations at the intermediate and advanced levels. Emphasis will be on movements that enhance coordination, balance, flexibility, muscle tone, cardiorespiratory fitness, and self-confidence. Prior experience in Middle Eastern belly dance is required.
Laboratory: 2 hours
Prerequisite(s): PE-1510 Beginner Middle Eastern Belly Dance or departmental approval.

PE-1530 Zumba
1 Credit
Zumba is an aerobic exercise program with choreographed movement routines, featuring fast and slow Latin rhythms. Emphasizes cardiorespiratory fitness, muscular strength and toning, and proper, effective and safe Zumba techniques at the beginner/advanced beginner level.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1540 Body Toning
1 Credit
Instruction, practice, and participation in group exercise class consisting of total-body muscular strength and endurance exercises using a variety of equipment and methods.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1550 Hula Hoop Fitness
1 Credit
A low intensity aerobic exercise program that incorporates core and off-body hoop dance skill training. Students will learn choreographed hoop dance routines and drills targeting large muscle groups featuring a variety of rhythms. Introduces hoop dance and toning exercises at the beginner and intermediate levels.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1560 Meditation Techniques
1 Credit
Students will explore the many different forms of meditation to foster a daily practice that is tailored to individual needs.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1600 Indoor Power Cycling
1 Credit
Indoor cycle exercise designed to replicate outdoor cycle training. Use of specialized bikes that students can adjust to simulate anywhere from flat roads to hill climbs.
Laboratory: 2 hours

PE-1807 Special Topics: Indoor Power Cycling
1 Credit
Indoor cycle exercise designed to replicate outdoor cycle training. Use of specialized bikes that students can adjust to simulate anywhere from flat roads to hill climbs.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1809 Special Topics: Boot Camp Fitness
1 Credit
Group exercise class emphasizing the use of functional fitness equipment along with body weight exercises to improve cardiovascular and muscular fitness along a continuum of physical skills and abilities.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1812 Special Topics: Half Marathon Training
1 Credit
The class will consist of a variety of jogging/walking work outs along with resistance training and flexibility exercises to improve and enhance the student’s physical fitness components: cardiovascular (aerobic) fitness, muscular strength and endurance, flexibility and body composition. All work outs will build toward and culminate with the student entering and successfully completing the Cleveland Half Marathon race by running, alternating running and walking, or walking. Class meetings will consist of a proper warm-up, variations of run/walk cardiovascular (aerobic) workouts, resistance training (free weights and circuit training) and a proper cool-down with stretching. Topics included in short discussions will include running technique, training programs, race preparation, mental and physical training, and goal setting.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1813 Special Topics: Cardio & Tone
1 Credit
Instruction, practice and participation in a group exercise class consisting of a combination of aerobic and total body muscular strength and endurance exercises using a variety of methods and equipment.
Laboratory: 2 hours
Prerequisite(s): None.

PE-1815 Functional Training for Sports
1 Credit
Competitive athletes and active individuals will learn exercise and movement strategies to improve function and performance of the neuromyofascial system. The course will provide assessments to identify neuromuscular dysfunctions and corrective exercises and movement strategies to enhance mobility, balance, proprioception, stability, strength, power, agility and coordination.
Laboratory: 2 hours
Prerequisite(s): None.
PE-1817 Special Topics in Barre Fitness
1 Credit
A creative combination of disciplines inspired by ballet, yoga and pilates. The barre is used as a prop to balance while performing strength training exercises. Hand weights, bands, mini stability balls, chairs and mats will be incorporated into the exercise routine. This fusion is designed to help participants reach their fitness goals of becoming more fit, toned and flexible. Supportive exercise shoes or bare feet are encouraged.
Laboratory: 2 hours
Prerequisite(s): None.

PE-2000 Lifeguard Training
2 Credits
Minimum skills training to qualify individuals as nonsurf lifeguard with certification from American Red Cross in Lifeguard, First Aid and CPR for the Professional Rescuer. Additional fees required.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval. Prerequisite swimming test defined by Red Cross.

PE-2010 Lifeguard Instructor
2 Credits
Focuses on teaching skills contained in American Red Cross Lifeguarding, First Aid, CPR for the Professional Rescuer and Community Water Safety courses with the American Red Cross certification as a Lifeguard and CPR for Professional Rescuer Instructor. Additional fees required.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval: 17 years of age by end of class, demonstrate knowledge of lifeguarding and CPR skills.

PE-2020 Water Safety Instructor
2 Credits
Instruction in teaching all skills and courses in the American Red Cross Learn-To-Swim program, Parent and Child Aquatics, Water Safety Courses, and Longfellow’s Whale Tales. Includes American Red Cross certification. Additional fees are required.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Must be 16 years of age by end of course. Demonstrate the ability to perform the following swimming skills consistent with Stroke Performance charts, level 4: front crawl, back crawl, breaststroke, elementary backstroke and side stroke - 25 yards each and butterfly 15 yards.

Physical Science (PSCI)

PSCI-1010 Astronomy [PSCI-1010 is now listed as PHYS-1010; students must register under PHYS-1010]
3 Credits
[This course is cross-listed as PHYS-1010. Credit can only be earned once for either course.] Survey of geology, history of astronomy, planets, asteroids and comets, the sun, stars, galaxies, and cosmology. Contemporary issues and developments in astronomy and space science. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
OAN Approved: TMNS

PSCI-101L Astronomy Laboratory [PSCI-101L is now listed as PHYS-101L; students must register under PHYS-101L]
1 Credit
[This course is cross-listed as PHYS-101L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on measurements, optics, telescopes, the sun, constellations, and other related astronomy topics. Laboratory activities complement and enrich related lecture course.
Laboratory: 3 hours
Prerequisite(s): PSCI-1010 Astronomy or concurrent enrollment.
OAN Approved: TMNS.

PSCI-1020 Everyday Chemistry [PSCI-1020 is now listed as CHEM-1000; students must register under CHEM-1000]
3 Credits
Survey of chemistry as related to environment, health and nutrition, and applications that affect quality of life. Basic concepts and applications of chemistry: consumer chemistry, acids and bases, medicines and drugs, pollution and conservation. Intended for non-science majors. To fulfill laboratory science requirement, student should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test; or departmental approval.
OAN Approved: TMNS.

PSCI-102L Everyday Chemistry Lab [PSCI-102L now listed as CHEM-1000L; students must register under CHEM-1000L]
1 Credit
Intended for non-science majors. Exercises on measurements, separation and synthesis methods, reaction rates, water analysis, household chemistry, forensic and environmental issues, and other related chemistry topics. Laboratory activities complement and enrich related lecture course.
Laboratory: 3 hours
Prerequisite(s): CHEM-1000 Everyday Chemistry or concurrent enrollment; or PSCI-1020 Chemistry or concurrent enrollment.
OAN Approved: TMNS.

PSCI-1030 Earth [PSCI-1030 is now listed as ESCI-1030; students must register under ESCI-1030]
3 Credits
[This course is cross-listed as ESCI-1030. Credit can only be earned once for either course.] Survey of geology of Earth and its impact on the environment. Earth's structure and composition, earthquakes, plate tectonics, hydrologic cycle, weather, resources and energy alternatives, and current related issues. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
OAN Approved: TMNS.
PSCI-103L Earth Laboratory [PSCI-103L is now listed as ESCI-103L; students must register under ESCI-103L]  
1 Credit  
This course is cross-listed as ESCI-103L. Credit can only be earned once for either course. Intended for non-science majors. Exercises on rocks and minerals, soils, weather, plate tectonics, energy and may include other related earth science activities. Laboratory activities complement and enrich related lecture course.  
Laboratory: 3 hours  
Prerequisite(s): PSCI-1030 Earth or concurrent enrollment.  
OAN Approved: TMNS.

PSCI-179H Honors Contract: Physical Science  
1 Credit  
Honors contract complements and exceeds the requirements and expected outcomes for an existing PSCI-1000 level course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with non-honors course. When taken with a non-honors course, the Honors contract adds an honors experience to that course. In conjunction with a faculty member, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credit hours) may be taken at the college (includes 179H and 279H).  
Lecture: 1 hour  
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor approved the contract.

PSCI-1820 Independent Study/Research in Physical Science  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PSCI-182H Honors Independent Study/Research in Physical Science  
1-3 Credits  
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

PSCI-2820 Advanced Independent Study/Research in Physical Science  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PSCI-282H Advanced Honors Independent Study/Research in Physical Science  
1-3 Credits  
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

### Physical Therapist Assisting Technology (PTAT)

**PTAT-1100 Introduction to Physical Therapist Assisting**  
2 Credits  
History and principles of physical therapy. Role, responsibilities, and supervision of the physical therapist assistant. Survey of physical therapy interventions and services. Emphasizes the legal, ethical responsibilities, as well as professional behaviors relating to physical therapy service. Content also covers communication, cultural diversity, and provides introduction to medical record documentation.  
Lecture: 2 hours  
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MA-1020 Medical Terminology; and departmental approval.

**PTAT-1300 Functional Anatomy**  
4 Credits  
Study of anatomy and function of human body to include head, neck, shoulder girdle, trunk, and upper and lower extremities. Study of motion of human body as basic to application of exercise with emphasis on study of functional problems for analysis of body movement.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): BIO-2331 Anatomy and Physiology I, and MA-1020 Medical Terminology I; and departmental approval: admission to Physical Therapist Assisting program or Occupational Therapy program.

**PTAT-1312 Fundamentals of Physical Therapy**  
3 Credits  
Introduces the fundamental procedures and theories for practice of physical therapy. Identify the key elements of posture, movement, body mechanics, lifting and moving patients. Introduces the theories and applications regarding gait, assistive devices, and bandaging. Identify wheelchair features, maintenance and mobility. Introduce professional behaviors and the therapeutic relationship.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): HTEC-1000 Introduction to Patient Care, and concurrent enrollment in PTAT-1300 Functional Anatomy, and departmental approval: admission to program.

**PTAT-1320 Introduction to Therapeutic Exercise**  
2 Credits  
Introduction to the principles of therapeutic exercise including passive, active, active assistive, and resistive exercise. Differentiation of strength, flexibility and stretching exercises.  
Lecture: 1.5 hour. Laboratory: 1.5 hour  
Prerequisite(s): HTEC-1000 Introduction to Patient Care; and concurrent enrollment in PTAT-1300 Functional Anatomy, and departmental approval.
PTAT-1401 Clinical Pathophysiology  
2 Credits  
Introduction to medical conditions commonly encountered in the practice of physical therapy that affect such systems as the Endocrine, Immune, Peripheral Vascular and Vestibular systems. Discuss health and disease and process of inflammation and repair of tissue and mechanisms of pain.  
Lecture: 2 hours  
Prerequisite(s): PTAT-1300 Functional Anatomy, and PTAT-1312 Fundamentals of Physical Therapy, and BIO-2341 Anatomy and Physiology II, and departmental approval.  

PTAT-1411 Physical Therapy Procedures  
3 Credits  
Physical therapy procedures focuses on the principles and application of various therapeutic modalities used in physical therapy treatment that augment rehabilitation intervention as part of the comprehensive physical therapy treatment plan.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting, PTAT-1300 Functional Anatomy, and PTAT-1312 Fundamentals of Physical Therapy, and departmental approval.  

PTAT-1420 Therapeutic Exercise  
3 Credits  
Physical therapy techniques and principles utilized in therapeutic exercise, including the progression of therapeutic exercise.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): PTAT-1300 Functional Anatomy, and PTAT-1312 Fundamentals of Physical Therapy, and PTAT-1320 Introduction to Therapeutic Exercise, and departmental approval.  

PTAT-1820 Independent Study/Research in Physical Therapist Assisting  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.  

PTAT-2200 Physical Therapy in Acute Care Setting  
2 Credits  
Explores the procedures, equipment and common pathologies encountered in the practice of physical therapy in the acute care environment. Physical therapy techniques for intervention are also presented, demonstrated and practiced.  
Lecture: 1.5 hour. Laboratory: 1.5 hour  
Prerequisite(s): PTAT-1312 Fundamentals of Physical Therapy, and departmental approval.  

PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures  
4 Credits  
Physical therapy techniques and procedures required for long term adult rehabilitation in selected diagnoses and impairments.  
Lecture: 3 hours. Laboratory: 3 hours  
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and, PTAT-1401 Clinical Pathophysiology, and PTAT-1420 Therapeutic Exercise, and departmental approval.  

PTAT-2310 Pediatric Physical Therapy  
2 Credits  
Examine the special considerations for the physical therapy approaches and procedures regarding infants and children. Identify typical fetal and postnatal growth and development. Examination of wide range of disease and disabilities affecting infants and children, and physical therapy skills necessary for interaction and treatment of this patient population.  
Lecture: 2 hours  
Prerequisite(s): BIO-2341 Anatomy and Physiology II, PTAT-1401 Clinical Pathophysiology, PTAT-1411 Physical Therapy Procedures, and PTAT-1420 Therapeutic Exercise, and departmental approval.  

PTAT-2330 Geriatric Physical Therapy  
2 Credits  
Course is designed to highlight special considerations of physical therapy approaches, role, and procedures regarding the older adult population. Statistics, myths, and legislation regarding aging population are presented and reviewed, as well as, typical aging and its implications for treatment and wellness.  
Lecture: 2 hours  
Prerequisite(s): PTAT-1401 Clinical Pathophysiology, and PTAT-1420 Therapeutic Exercise; and concurrent enrollment in PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures, and departmental approval.  

PTAT-2341 Psychosocial issues in Physical Therapy  
2 Credits  
Designed to familiarize the student with the common mental health illnesses and psychosocial issues that may affect physical therapy interventions.  
Lecture: 2 hours  
Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting; and PSY-1010 General Psychology or concurrent enrollment; or PSY-101H Honors General Psychology, or concurrent enrollment.  

PTAT-2820 Advanced Independent Study/Research in Physical Therapist Assisting  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.  

PTAT-2840 Clinical Practicum I  
2 Credits  
Capstone course in Physical Therapist Assisting Technology. Application of learned physical therapy techniques in a clinical setting. It is recommended that program students register for this course as pass/no pass.  
Other Required Hours: 240 hours per semester (40 hours per week for 8 weeks).  
Prerequisite(s): Concurrent enrollment in PTAT-2970, and departmental approval: completion of all didactic coursework in the PTAT program.
PTAT-2850 Clinical Practicum II  
2 Credits  
Capstone course in Physical Therapist Assisting Technology. Application of learned physical therapy techniques in a clinical setting. It is recommended that program students register for this course as pass/no pass. Other required hours: Clinical Practicum: 240 hours per semester (40 hours per week for 6 weeks).
Prerequisite(s): PTAT-2840 Clinical Practicum I and PTAT-2970 Practicum Seminar, and departmental approval.

PTAT-2940 Field Experience I  
1 Credit  
Application of learned physical therapy techniques in clinical setting. It is recommended that program students register for this course as pass/no pass.
Other Required Hours: Field experience: 195 hours per semester (39 hours per week for 5 weeks).
Prerequisite(s): PTAT-1420 Therapeutic Exercise or concurrent enrollment, and PTAT-1411 Physical Therapy Procedures or concurrent enrollment, and departmental approval.

PTAT-2970 Practicum Seminar  
1 Credit  
Course covers the integration of knowledge and skills acquired in academic coursework and clinical practicum. Examination of the role and function of the physical therapist assistant in preparation for licensure and entry into the workforce. It is recommended that program students register for this course as pass/no pass.
Other Required Hours: Seminar: 15 hours per semester.
Prerequisite(s): Concurrent enrollment in PTAT-2840 Clinical Practicum I and concurrent enrollment in PTAT-2850 Clinical Practicum II, and departmental approval: completion of all didactic coursework in PTAT program.

Physics (PHYS)  

PHYS-1010 Astronomy  
3 Credits  
[This course is cross-listed with PSCI-1010. Credit can only be earned once for either course.] Survey of astronomy. History of astronomy, planets, asteroids and comets, the sun, stars, galaxies, and cosmology. Contemporary issues and developments in astronomy and space science. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
OAN Approved: TMNS.

PHYS-101L Astronomy Laboratory  
1 Credit  
[This course is cross-listed as PSCI-101L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on measurements, optics, telescopes, the sun, constellations, and other related astronomy topics. Laboratory activities complement and enrich related lecture course.
Laboratory: 3 hours
Prerequisite(s): PHYS-1010 Astronomy or concurrent enrollment.
OAN Approved: TMNS.

PHYS-1050 Everyday Physics  
2 Credits  
Introductory science course designed to develop an understanding of the phenomena of our everyday life via the laws of physics. The emphasis is not on problem-solving course, but on encouraging students to understand and appreciate their environment from a new perspective. Explores application of various fields of physics to everyday living, household applications, sports applications and other applications discussed.
Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-0955 Beginning Algebra, or appropriate score on Math placement test.
OAN Approved: TMNS.

PHYS-1210 College Physics I  
4 Credits  
Kinematics, vectors, and Newtonian mechanics (forces and motion, gravitation, energy, momentum, rotational motion, simple harmonic motion), fluids, heat, and thermodynamics. Emphasis on problem solving using algebra.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0965 Intermediate Algebra, or departmental approval.
Note: MATH-1200, 1270 or MATH-1280 taken prior to Fall 2016 will meet prerequisite requirements for this course.
OAN Approved: TMNS, OSC014, and OSC021 (1 of 2 courses, both must be taken).

PHYS-1220 College Physics II  
4 Credits  
Introductory algebra-based physics course designed for non-physics majors covering areas of physics which include electricity, magnetism, waves, sound, light, special relativity, atomic and nuclear physics.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): PHYS-1210 College Physics I.
OAN Approved: TMNS, OSC015, and OSC021 (2 of 2 courses, both must be taken).

PHYS-1300 Physics of Optical Materials  
4 Credits  
Study the properties of materials related to opticianry including structure, density, conductivity, and effects of mechanical forces on materials. Special emphasis given to the nature and theory of light and its application to ophthalmic optics. Demonstrations of optical bench, blackboard optics, and other instruments used to facilitate understanding of how light functions.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher.

PHYS-1820 Independent Study/Research in Physics  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
PHYS-182H Honors Independent Study/Research in Physics
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

PHYS-2250 Radiographic Physics and Quality Control
4 Credits
Course designed for Radiography program students. Basic introduction to college physics. Reviews basic mathematical operations needed for this course. Discusses energy, matter, Newtonian laws, atomic structure, electrostatic, electrodynamics, magnetism, electromagnetism that will lead to the study of x-ray generators, x-ray circuitry, and automatic exposure devices. Includes laboratory application of related physics experiments and the use of quality assurance testing tools to ensure radiographic quality control.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): RADT-1351 Image Acquisition and Evaluation, and departmental approval: admission to Radiography program.

PHYS-2310 General Physics I
5 Credits
The first semester of a two-semester introductory calculus-based physics course designed for students majoring in science or engineering covering areas in; motion in one, two, and three dimensions, rotational motion, energy and momentum, gravitation, oscillations and waves, and thermodynamics.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1610 Calculus I, or departmental approval. OAN Approved: TMNS, OSC016, and OSC022 (1 of 2 courses, both must be taken).

PHYS-2320 General Physics II
5 Credits
The second semester of a two-semester introductory calculus-based physics course designed for students majoring in science or engineering covering areas in; electrostatics, electricity, magnetism, electromagnetism, optics, atomic and nuclear physics, and introductory modern physics.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): PHYS-2310 General Physics I, or departmental approval. OAN Approved: TMNS, OSC017, and OSC022 (2 of 2 courses, both must be taken).

PHYS-2820 Independent Advanced Study/Research in Physics
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PHYS-282H Advanced Honors Independent Study/Research in Physics
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Plant Science and Landscape Technology (PST)

PST-1300 Horticultural Botany
3 Credits
This course is crosslisted as BIO-1300. Credit can only be earned once for either course.) Plant structure and diversity is examined through the study of the cells, tissues, and organs of plants, as well as their life cycles and reproduction. The physiology of plants is explored through the study of plant transport, nutrients, hormones, growth, and metabolism. Additionally, horticulturally significant bacteria, protists, and fungi are examined.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PST-1311 Deciduous Woody Landscape Plants
3 Credits
Covers the correct identification, cultural requirements, potential and correct uses of deciduous trees and shrubs in the landscape.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants
3 Credits
Covers the cultural requirements, growth habits, potential and correct landscape uses of herbaceous annuals, perennials, hardy bulbs, groundcovers, and evergreen trees and shrubs.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PST-1331 Plant Propagation
3 Credits
Introduction to the techniques used to create new food and ornamental plant crops.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): PST-1300 Horticultural Botany, or concurrent enrollment; or departmental approval.
PST-1351 Plant Production
3 Credits
Exploration of production and marketing of ornamental and food plant materials. Emphasis on basic greenhouse, garden center, small farm, and nursery operations from off season planning, crop timing, pest management, marketing, production, harvesting, and selling. Alternative growing methods including hydroponics, high tunnel aeroponics and other soil-less methods.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): PST 1300 Horticultural Botany, or concurrent enrollment, or departmental approval.

PST-1400 Garden Center and Nursery Management
3 Credits
An in-depth study of the management skills needed to successfully operate a garden center or a wholesale nursery growing establishment, including management of employees, inventory, suppliers, clients, and legal and regulatory environment. Emphasis placed on ensuring management practices are environmentally sustainable and use the most current technologies available.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PST-1411 Equipment Operations and Safety
2 Credits
An overview of common horticultural hand tools, power tools, and large equipment. Emphasis on safe operation with hands-on practice and basic preventative maintenance on each machine.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): None. CTAN Approved: CTHOR003

PST-1420 Landscape Practices
3 Credits
Study of and practical experience in proper techniques of landscape maintenance and installation. Included are proper pruning, planting, preparation mulching, fertilizing, water management, and soil preparation techniques.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PST 1411 Equipment Operations and Safety, or departmental approval. CTAN Approved: CTHOR002

PST-1431 Graphics for Landscape Design and Construction
2 Credits
Foundation and preparatory course for graphic communication processes and methods used in landscape design and landscape construction. Production and applications of a variety of drawing types and the tools and techniques used to produce them. Types of drawings studied will include: plan, section, elevation, isometric, perspective and freehand sketching. Other graphic techniques studied will include color rendering and construction detailing.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): None.

PST-1441 Introduction to Landscape Design
3 Credits
Foundation course for landscape design. Basic principles, elements and processes of design and their relationship to landscape design. Aesthetic, environmental and programmatic systems analysis and the development of basic site and landscape design projects. Preparation of various design drawing types and models provides exposure to design theories applicable to the use of landform, vegetation, water and structural landscape elements.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PST 1311 Deciduous Woody Landscape Plants, or PST 1321 Evergreens, Groundcovers, and Herbaceous Plants, or departmental approval.

PST-1450 Landscape Design - CAD
3 Credits
An introduction to the software's operational components and the methods and procedures to develop the types of drawings typically used for landscape design/sales presentations and construction implementation at a residential scale, from initial file set-up to printing the completed drawings. The software programs utilized in this class are Dynascape™ design, color and sketch 3D.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PST-1441 Introduction to Landscape Design and IT-1090 Computer Applications.

PST-1510 Landscape Contracting
3 Credits
In depth study of the two major sides of landscape contracting. Study of landscape maintenance contracting business including turf-grass maintenance, fertilization services, mulching, pruning, bed maintenance, spring and fall clean up, bed edging, aerating, snow and ice removal, and other value added services. Study of landscape construction and installation contracting including the estimation process, construction documentation, permits and regulations, subcontracting, equipment and material logistics, job site management, project management, and basic landscape construction practices.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score; or departmental approval.

PST-1600 Irrigation and Drainage
2 Credits
Provides an operational knowledge of the theory, design, installation, and maintenance of landscape irrigation and drainage systems.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.

PST-1806 Special Topics: Agricultural Management
2 Credits
The course represents a Youth Outreach Project that focuses on young people interested in the business aspect of Horticulture. The course trains students in understanding how to apply basic business skills towards the growth and proper management in the Horticulture or Agricultultural industries.
Lecture: 1 hour
Other Required Hours: Practicum: Students will spend a minimum of 7 hours per week gaining experience in working on one of the 5 Green Corps Learning Farms.
Prerequisite(s): None.
PST-1820 Independent Study/Research in Plant Science and Landscape Technology  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and  
ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PST-2310 Soil Technology  
3 Credits  
Examination of the critical role soils play in horticulture, agriculture, and construction. Emphasis on soil testing, analysis, and building healthier soils.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): PST-1020 Chemistry, or CHEM-1000 Everyday Chemistry, or BIO-1060 Environment, Ecology, and Evolution; and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

PST-2321 Plant Pest Diagnostics  
3 Credits  
In-depth study of Integrated Pest Management tactics as used in the green industry to provide a sustainable approach to care of plants in the agricultural, nursery, and landscape environment.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants, or PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants; or departmental approval.

PST-2370 Introduction to Turfgrass  
2 Credits  
Study of lawn maintenance and installation including fertilization, spraying, mowing, irrigation, selection and establishment, weed and pest identification, and diagnosis of disorders as pertains to commercial, residential, and municipal applications.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants.

PST-2380 Arboriculture  
2 Credits  
Study of the tree care industry including fertilization, spraying, pruning, bracing and cabling, equipment operation, climbing techniques, safe work practices, diagnosis of disorders, and client interactions.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants, and PST 1411 Equipment Operations and Safety, and HLTH 1230 Standard First Aid and Safety; or departmental approval.

PST-2431 Planting Design  
3 Credits  
Emphasis on the design relationships of plants to their optimum and intended environments. Basic and advanced planning design principles and techniques that address the aesthetic, environmental and engineering uses of plant material. Preparation of various design project drawing types and a personal palette including woody and herbaceous materials for more complex landscape design solutions.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): PST-1441 Introduction to Landscape Design, or departmental approval: Faculty may require samples of previous work to determine skill level.

PST-2820 Independent Advanced Study/Research in Plant Science  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PST-2950 Field Experience  
3 Credits  
Field experience in students occupational objectives in plant science, landscaping and/or horticulture. Student and employer follow training agreement as developed by student, employer and supervising faculty.  
Other Required Hours: Field Experience: 36 hours per week.  
Prerequisite(s): Departmental approval: satisfactory completion of coursework deemed sufficient to prepare student for entry level work in chosen work area.

Political Science (POL)

POL-1010 American National Government  
3 Credits  
Lecture: 3 hours  
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test; or instructor approval.  
OAN Approved: TMSBS and OSS011.

POL-101H Honors American National Government  
3 Credits  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I or eligibility for ENG-101H College Composition I; or departmental approval.  
OAN Approved: TMSBS and OSS011.

POL-1020 State & Local Government  
3 Credits  
Examination of state and local governments within the United States federal system. Intergovernmental relations and dynamics of the electoral process, including impacts of public policy decisions on individual lives. Several policy areas may be studied.  
Lecture: 3 hours  
Prerequisite(s): None.  
OAN Approved: TMSBS and OSS014.
POL-179H Honors Contract in Political Science  
1 Credit  
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).  
Lecture: 1 hours  
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

POL-1820 Independent Study/Research in Political Science  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

POL-182H Honors Independent Study in Political Science  
1-3 Credits  
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

POL-2020 Introduction to Conflict and Peace Studies  
3 Credits  
Introduction to the field of conflict analysis, resolution, and peace studies is intended to provide a solid foundation for further inquiry and application. Examines definitions of conflict and diverse views of its resolution, and explores thinking about human behavior and social systems as they relate to the origins of conflict and the role of conflict in violent and peaceful social changes.  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; or departmental approval: permission from instructor.

POL-2030 Comparative Politics  
3 Credits  
Examination of various political philosophies and ideologies and the study of several nations and their governments including industrialized democracies. Explores the ideological underpinnings, economic systems, and most salient political and social issues of each of these case-study states.  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government, or by instructor’s discretion.  
OAN Approved: TMSBS and OSS013.

POL-2040 Conflict Resolution Skills  
3 Credits  
Explore the role and nature of conflict in both their personal and professional lives. Develop skills that will help prevent and de-escalate intense conflict situations. The topic of conflict in human interaction will be addressed through an interdisciplinary approach that will include texts from relevant academic areas and experiential role playing. Includes the role of intrapersonal intelligence and its affect in interpersonal interactions. Also covers a variety of symbolic systems of meaning making and apply them for understanding human nature and conflict.  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I; or departmental approval.

POL-2050 Study Abroad in Peace and Conflict Resolution  
3 Credits  
Study abroad opportunity covering theory and practice of Conflict Resolution and Peace Studies. Students will have an opportunity to meet with decision makers across fields while experiencing the rich culture of the country/countries. Students will begin to understand issues from multiple cultural perspectives, enhance their intercultural communication and adjustment skills, and analyze conflict resolution efforts and their impact at multiple levels. Basic language and cultural instruction will be included along with excursions to areas of interest. Requires participation in a travel abroad experience. Additional costs required.  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I, and POL-1040 Introduction to Peace and Conflict Studies, and POL-2040 Conflict Resolution Skills; and departmental approval: instructor permission required.

POL-2060 Political Systems of Africa  
3 Credits  
Comparative discussion of selected topics in Africa with particular focus on interrelationship between internal and external affairs. Examination of colonial policies, party systems, interest groups and modes of development.  
Lecture: 3 hours  
Prerequisite(s): POL-1010 American National Government is recommended.  
OAN Approved: TMSBS.

POL-2070 International Relations  
3 Credits  
Study of International Relations. Explores how individuals, nation-states, non-governmental and international organizations interact with one another. Emphasis on major sub-fields of security, international political economy, international development and the global environment.  
Lecture: 3 hours  
Prerequisite(s): ENG-1010 College Composition I and POL-1010 American National Government, or by instructor’s discretion.  
OAN Approved: TMSBS and OSS012.
POL-2100 Constitutional Law
3 Credits
The origins and development of American constitutional and legal system. Emphasizes the structure and role of Supreme Court in constitutional interpretation and major decisions concerning important areas of litigation. Major areas of emphasis include federalism, separation of powers, civil liberties, civil rights, and the rights of the criminally accused. Historical and current court cases discussed.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.
OAN Approved: TMSBS.

POL-2110 Terrorism and Counterterrorism
3 Credits
An inter disciplinary examination of the complex nature, types and historical evolution of terrorism. Will analyze terrorism and its political, economic, religious, psychological and ideological dimensions. Select acts of domestic and global terrorism will be examined to better understand terrorists' motives, methods and objectives. Counterterrorism strategies and how democratic nations should respond to terrorism and future terrorist threats will be evaluated.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

PNUR-1210 Fundamentals of Practical Nursing
2 Credits
This course discusses the principles and practices of basic nursing care to individuals with selected health deviations. Develop assessment skills including physical assessment for the adult and evaluating physiologic changes related to aging. Incorporating skills in problem-solving using the nursing process as applied to individual situations with goal of providing safe and competent nursing care to individual adult patients. Laboratory screening procedures introduced. Documentation and reporting findings are discussed.
Lecture: 1.5 hour. Laboratory: 1 hour
Prerequisite(s): PNUR-1200 Physical Assessment for the Practical Nurse, and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in BIO-105L Human Biology Laboratory; and concurrent enrollment in BIO-1050 Human Biology, and must have earned an A or B in at least 3 honors courses.

PNUR-1211 Fundamentals of Practical Nursing
3 Credits
This course discusses the principles and practices of basic nursing care of adults through the life span using Orem's self-care deficit theory. Introduction to evolution of nursing, legal aspects of nursing, and cultural diversity. Basic concepts of nutrition and medical/ surgical asepsis are presented. Note: Course is offered in the 8 week session. Contact time for the 8 week offering is as follows: Laboratory: On Campus and Clinical: 9 hours per week for 8 weeks. Lecture: 3 hours per week for 8 weeks.
Lecture: 1.5 hour. Laboratory: 1 hour
Other Required Hours: 3.5 Clinical Lab hours per week for 16 weeks.
Prerequisite(s): Departmental approval: admission to Practical Nursing Program, and concurrent enrollment in BIO-1050 Human Biology, and concurrent enrollment in BIO-105L Human Biology Laboratory; and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in PNUR-1210 Fundamentals of Practical Nursing.

PNUR-1212 Fundamentals of Practical Nursing
3 Credits
This course discusses the principles and practices of basic nursing care of adults through the life span using Orem's self-care deficit theory. Introduction to evolution of nursing, legal aspects of nursing, and cultural diversity. Basic concepts of nutrition and medical/ surgical asepsis are presented. Note: Course is offered in the 8 week session. Contact time for the 8 week offering is as follows: Laboratory: On Campus and Clinical: 9 hours per week for 8 weeks. Lecture: 3 hours per week for 8 weeks.
Lecture: 1.5 hour. Laboratory: 1 hour
Other Required Hours: 3.5 Clinical Lab hours per week for 16 weeks.
Prerequisite(s): Departmental approval: admission to Practical Nursing program, and concurrent enrollment in BIO-1050 Human Biology, and concurrent enrollment in BIO-105L Human Biology Laboratory; and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in PNUR-1210 Physical Assessment for the Practical Nurse; and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I.
PNUR-1322 Nursing Management of the Adult I
3 Credits
Focuses on care of adults with acute and recurring medical and surgical conditions. Begin to develop critical thinking skills along with the nursing process providing the framework for delivery of nursing care to the adult patient. Note: Course offered in the 8 week session. Contact time for 8 week offering is as follows: Laboratory On Campus and Clinical: 9 hours per week. Lecture: 3 hours per week.
Lecture: 1.5 hour. Laboratory: 1 hour
Other Required Hours: 3.5 Clinical Lab hours per week for 16 weeks.
Prerequisite(s): Departmental approval: admission to Practical Nursing program; and concurrent enrollment in PNUR-1210 Fundamentals of Practical Nursing; and concurrent enrollment in PNUR-1200 Physical Assessment for the Practical Nurse; and concurrent enrollment in BIO-1050 Human Biology; and concurrent enrollment in BIO-105L Human Biology Laboratory.

PNUR-1330 Nursing Management of Adults II
8 Credits
Focuses on care of adults with acute and recurring medical and surgical conditions. Students develop skills in problem-solving through use of nursing process as applied to individual situations, with goal of providing safe, competent, and standard nursing interventions to individual adult patient.
Lecture: 4 hours. Laboratory: 2 hours
Other Required Hours: 10 Clinical Lab hours per week.
Prerequisite(s): Departmental approval: admission to Practical Nursing program; and concurrent enrollment in PNUR-1322 Nursing Management of Adults I; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1341 Lifespan Nursing for the Practical Nurse
4 Credits
Designed to provide nursing care to individuals with selected health deviations across the lifespan. Emphasis on nursing responsibility in assessment of normal and abnormal occurrences. Childbearing experience, nursing skills, and measures related primarily to ill newborn, children and adolescents considered in relation to entire family. Emotional and physical aspects incorporated. Provides opportunity for leadership in the adult health care setting, with multiple patients.
Lecture: 2 hours. Laboratory: 1 hour
Other Required Hours: 5 Clinical lab hours per week.
Prerequisite(s): Departmental approval: admission to Pracitical Nursing program; and PSY-2020 Life Span Development or concurrent enrollment; and PNUR-1330 Nursing Management of Adults II.

Professional Development Institute (ZPDI)

ZPDI-0450 CompTIA A 220-1001 and 220-1002 (Online)
5 CEU’s
CompTIA A certification is a globally recognized industry standard for establishing an IT career. The A Core Series 220-1001 and 220-1002 exams cover expanded content on growing IT support roles, including expanded baseline security topics. A certification defines competency in operational procedures including basic disaster prevention, recovery and scripting basics, as well as a greater dependency on networking and device connectivity. This course includes professional study of expanded content on high-demand IT jobs. Students execute each practical task in a safe environment, accessible from anywhere, without needing to buy their own hardware or risk damage to their own system.
Contact hours: 50
Not financial aid eligible.

ZPDI-0451 CompTIA A 220-1001 (Online)
2.5 CEU’s
CompTIA A certification is a globally recognized industry standard for establishing an IT career. The A Core Series 220-1001 exam covers expanded content on the growing field of IT support, including expanded baseline security topics. A certification provides a different approach to defining competency in operational procedures including basic disaster prevention, recovery and scripting basics and a greater dependency on networking and device connectivity.
Contact hours: 25
Not financial aid eligible.

ZPDI-0452 CompTIA A 220-1002 (Online)
2.5 CEU’s
CompTIA A certification is a globally recognized industry standard for establishing an IT career. The A Core Series 220-1002 exam covers expanded content on growing IT support roles, including expanded baseline security topics. A certification defines competency in operational procedures including basic disaster prevention, recovery and scripting basics, as well as a greater dependency on networking and device connectivity. This course includes professional study of expanded content on high-demand IT jobs. Students execute each practical task in a safe environment, accessible from anywhere, without needing to buy their own hardware or risk damage to their own system.
Contact hours: 25
Not financial aid eligible.

ZPDI-0460 Microsoft Office 2019: New Features
0.8 CEU’s
An introduction to the new features in Microsoft Office 2019, including updates to Word, Excel, PowerPoint, Outlook and Access.
Contact hours: 8
Not financial aid eligible.
ZPDI-0540 Home Inspector Boot Camp  
13.5 CEU's  
Whether you're looking for a new career or a second income, home inspection can offer the flexibility and earnings you've always dreamed of. Corporate College® has partnered with ATI Training to provide you with the best home inspection training available. This all-inclusive, blended-learning course will teach you proper home inspection processes and practices, and will familiarize you with various building systems and how they work together. The course includes the 80 hours required to obtain a license in the state of Ohio and more, for a total of 135 hours, as participants will help perform real-life home inspections, in addition to online and classroom learning. Participants must take the NHIE exam (study guide included) for licensure. The NHIE study guide, as well as one year of free reporting software and a free one-year membership in the All American Association of Home Inspectors, will be provided to participants at no additional cost.  
Contact hours: 135  
Not financial aid eligible.

ZPDI-1023 Finance for Non-Financial Managers  
0.8 CEU's  
To get ahead and stay ahead, today's managers have to be finance-savvy. You've got to know how to justify a request, quantify your contributions to the company and spot profit drains before they get out of hand. From accruals to write-offs, accounts receivable to working capital, this seminar shows you the concepts, techniques and tools that can help you make each decision pay off — on the job and on the bottom line! No matter how effective your management methods or how innovative your ideas, the results are measured in numbers: dollars and cents.  
Contact hours: 8  
Not financial aid eligible.

ZPDI-1160 Project Management  
2.4 CEU's  
Proper planning is key to success in any endeavor. This program is a hands-on workshop for those in a formal project management role, or for those managers who need to lead others through projects. Participants will practice using tools and techniques to define, plan, implement, and close projects successfully.  
Contact hours: 24  
Not financial aid eligible.

ZPDI-1187 Dynamic Presentation Skills  
0.4 CEU's  
Whether leaders are persuading colleagues, selling a client or energizing a team, the power of their presentation makes the difference between success and failure. In this session, participants will learn how to present thoughts and ideas with self-confidence and organization. Our experienced instruction team will guide participants on how to overcome challenges they may face while practicing presenting in a safe environment.  
Contact hours: 4  
Not financial aid eligible.

ZPDI-1224 Professional Business Writing  
0.8 CEU's  
In the workplace, your writing speaks volumes about you. Whether you are writing a three-line email or a multipage report, you need to write in a polished, professional way. This course reviews the principles of written communication in the workplace. The course introduces students to common formats such as the memo, letter and report and helps students improve their writing skills to gain greater mastery of grammar, mechanics and style.  
Contact hours: 8  
Not financial aid eligible.

ZPDI-1238 Fundamentals of Meeting and Event Management (Part One and Two)  
3 CEU's  
To become a successful event planner, you must first learn the essentials. This course will provide you with the tools and strategies to excel in event management, including logistics, financial management, feasibility, risk management, charts, tools and formulas (including food and beverage). Build the foundation necessary to become an in-demand event planner and discover the career path that best suits your skills.  
Contact hours: 30  
Not financial aid eligible.

ZPDI-1242 Allergen-Friendly Series (Online)  
0.6 CEU's  
This series of interactive online courses provides allergen awareness for your entire operation and staff. In this course, you will learn current information on what causes an allergic reaction, the main food allergens, how to communicate with customers who have food allergies, and how to assure customers' allergen needs are communicated within the operation, from the initial order to the serving process. Upon successful completion of the series, students will earn a certificate that is valid for three years. Three courses are included in the series: Allergen Awareness, Allergen Plan Development and Allergen Plan Specialist.  
Contact hours: 6  
Not financial aid eligible.

ZPDI-1243 Ohio Level Two Food Safety Manager Certification (Online)  
1.5 CEU's  
This interactive online course prepares participants for the state of Ohio's Level Two Food Safety Manager Certification exam. It is fully compliant with the latest FDA Food Code and Conference for Food Protection (CFP) guidelines.  
Contact hours: 15  
Not financial aid eligible.

ZPDI-1244 Strategies for Increasing Sales (Online)  
0.9 CEU's  
This interactive online course assists participants in the development of a written food service operations marketing plan. By the end of the course, students will have completed a fully developed marketing plan ready for evaluation and implementation to increase overall sales and revenue in any food service operation.  
Contact hours: 9  
Not financial aid eligible.
ZPDI-1245 Allergen Awareness (Online)
0.2 CEU's
This interactive online course provides allergen awareness for your entire staff. In this course, you will learn current information on what causes an allergic reaction, the main food allergens, how to communicate with customers who have food allergies, and how to assure customers' allergen needs are communicated throughout the operation, from the initial order to the serving process. Also covered: cross-contact and how to avoid it, and what to do when an allergic reaction occurs. Allergen Awareness was designed to be highly flexible, allowing students to train on their schedule.
Contact hours: 2
Not financial aid eligible.

ZPDI-1246 Allergen Plan Development (Online)
0.2 CEU's
This course walks management through all the elements of food allergens in a food operation, allowing management to decide what action to take. Throughout the course, the user is offered a series of questions and options for how much accommodation the operation will give to the issue of food allergen safety. Even those operations not able to achieve a high level of accommodations will have made the decision with a full awareness of what is not being provided. Operations that decide to offer a high level of food allergen accommodations will end the course with the foundation of their allergen plan. This plan or essay will be saved and used to develop the details of the operation's food allergen safety process.
Contact hours: 2
Not financial aid eligible.

ZPDI-1247 Allergen Plan Specialist (Online)
0.2 CEU's
This course will provide students with an in-depth understanding of food allergens, product ingredients and common allergen foods. Students will learn how to evaluate a menu and its recipes. Knowing all the products used by the operation will help students learn how to identify the food allergen ingredients. Students will learn how to be alert to potential ingredient changes, how to communicate with suppliers and what to do about product recalls due to allergen mislabeling or undocumented allergens. Students will learn how to use this knowledge to create a database to track each allergen, from product to menu. Lesson 2 covers the steps of an operation and how to develop written protocols for each step: receiving, storage, ordering, cooking and serving. Students will learn how to work with other staff to evaluate each step of the operation from an allergen viewpoint.
Contact hours: 2
Not financial aid eligible.

ZPDI-1248 Digital Marketing Manager: Professional Certification (Online)
3 CEU's
The online Digital Marketing Manager professional certification program is ideal for anyone involved in the planning, implementation or measurement of digital strategies or anyone who would like to pursue a career in this area. This course provides a rounded introduction to all core digital marketing disciplines and will prepare participants to take on a more specialized role within the overall marketing domain. Through dynamic video presentations and practical learning activities including tutorials and exercises, students will gain an understanding of the main concepts, techniques and skills required to develop, plan and implement an effective digital marketing strategy.
Contact hours: 30
Not financial aid eligible.

ZPDI-1251 Fundamentals of Meeting and Event Management: Planning
(Part One)
1.5 CEU's
To become a successful event planner, you must first learn the essentials. This course will provide you with the tools and strategies to excel in event management, including logistics, financial management, feasibility, risk management, charts, tools and formulas (including food and beverage). Build the foundation necessary to become an in-demand event planner and discover the career path that best suits your skills.
Contact hours: 15
Not financial aid eligible.

ZPDI-1252 Fundamentals of Meeting and Event Management: Design
(Part Two)
1.5 CEU's
To become a successful event planner, you must first learn the essentials. This course will provide you with the tools and strategies to excel in event management, including logistics, financial management, feasibility, risk management, charts, tools and formulas (including food and beverage). Build the foundation necessary to become an in-demand event planner and discover the career path that best suits your skills.
Contact hours: 15
Not financial aid eligible.

ZPDI-1253 Spanish for Banking (Online)
1.6 CEU's
Spanish for Banking is designed for banking and credit union professionals wanting to better communicate with their Spanish-speaking customers. Students will build their banking Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1254 Spanish for Construction (Online)
1.6 CEU's
Spanish for Construction is a self-paced, online Spanish course designed for construction workers, contractors, foremen and anybody who works with Spanish-speaking employees and coworkers in the construction industry. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1255 Spanish for Dentists and Dental Hygienists (Online)
1.6 CEU's
Spanish for Dentists and Dental Hygienists is a self-paced, online occupational Spanish conversation course that bridges the communication gap between English-speaking dental professionals and Spanish-speaking patients. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.
ZPDI-1256 Spanish for Educators (Online)
1.6 CEU's
Spanish for Educators is a self-paced, online occupational Spanish conversation course that seeks to bridge the communication gap between English and Spanish speakers. This course is ideal for teachers, administrators, and anyone working with Spanish-speaking students and parents. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.

Contact hours: 16
Not financial aid eligible.

ZPDI-1257 Spanish for Firefighters (Online)
1.6 CEU's
Spanish for Firefighters is a self-paced, online Spanish course designed for firefighters and emergency responders wanting to communicate with the Spanish-speaking public. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.

Contact hours: 16
Not financial aid eligible.

ZPDI-1258 Spanish for Food Service (Online)
1.6 CEU's
Spanish for Food Service is an innovative, self-paced, online Spanish course designed for restaurant managers, wait staff, cooks and anyone working with Spanish-speaking employees and co-workers in the food service industry. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.

Contact hours: 16
Not financial aid eligible.

ZPDI-1259 Spanish for Health Care (Online)
1.6 CEU's
Interacting with Spanish-speaking patients may arise frequently in a health care position. In a medical career, lacking basic knowledge of Spanish can be inefficient and dangerous. Taking this course will boost your professional communication skills in the workplace, as well as make you more comfortable and productive. Spanish for Health Care is a self-paced, online occupational Spanish conversation course that seeks to bridge the communication gap between English-speaking health care professionals and Spanish-speaking patients. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.

Contact hours: 16
Not financial aid eligible.

ZPDI-1260 Digital and Social Selling: Professional Certification (Online)
3 CEU's
This online course prepare participants for the Digital Marketing Institute (DMI) Professional Certification in Digital and Social Selling. This course is ideal for salespeople, consultants and sales representatives at all levels; business development executives and managers; account managers; relationship managers; sales team leaders; and anyone looking to develop their digital sales capabilities and consolidate their practical application of digital tools and social selling techniques.

Contact hours: 30
Not financial aid eligible.

ZPDI-1261 Spanish for Housekeeping (Online)
1.6 CEU's
Spanish for Housekeeping is a self-paced, online occupational Spanish conversation course that seeks to bridge the communication gap between English and Spanish-speaking supervisors, coworkers and guests. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.

Contact hours: 16
Not financial aid eligible.

ZPDI-1262 Event Design and Production
0.5 CEU's
Did you ever wonder what it takes to make an event go from an idea to implementation? Whether you are planning a simple event or a complex program, you will need to know the fundamentals that go into event design and production. Content covered in this course will include planning for the technical logistics for an event as well as the people, services and elements that support the event objectives.

Contact hours: 5
Not financial aid eligible.

ZPDI-1263 Weddings and Social Events
0.5 CEU's
Wedding and social event planners are deeply involved in some of life's most cherished events, and the demand for social planners is growing. This two-day course is for individuals who want to learn the best practices, methods and techniques needed to be a successful professional in the wedding and social event industry. Understand why clients seek the skills of a professional party planner and learn how to make important occasions special for your clients.

Contact hours: 5
Not financial aid eligible.

ZPDI-1264 Nonprofits and Fundraisers
0.5 CEU's
Special events are a great way to raise funds and build awareness and community support for an organization. Working with nonprofits can be rewarding, yet challenging. Planning successful nonprofit fundraising events takes a variety of skills as well as mental resilience. Learn planning techniques and explore the elements involved in using special events as a fundraising tool for nonprofits.

Contact hours: 5
Not financial aid eligible.

ZPDI-1265 Festivals and Public Events
0.5 CEU's
Large-scale public events require months of careful planning and organizing. Public events come with their own set of challenges and require additional logistics to create a unique experience for attendees. This course provides a solid understanding of the basics of planning and operating large festivals.

Contact hours: 5
Not financial aid eligible.
ZPDI-1266 Event Safety, Security and Risk Management
1.6 CEU's
Risk management plans are essential when planning events, as they identify the potential risks that may arise from holding an event. Recent world news has raised awareness of the vulnerability of events to safety and security incidents, and many event professionals struggle to devise crisis management plans specific to their events. This course will review best practices for event safety and security. Students will learn the importance of risk management planning and the steps needed to identify and prepare for incidents that could occur.
Contact hours: 16
Not financial aid eligible.

ZPDI-1267 Customer Service in the Hospitality Industry
0.25 CEU's
From the first meeting to the final greeting, the success or failure of event professionals depends on providing exceptional customer service. A satisfied client has a much greater incentive to recommend us to others. Exemplary service also contributes to customer loyalty and is a competitive differentiator in any industry. An exceptional service experience does not simply involve a friendly smile or an easy exchange it results from deeply understanding your customers expectations and responding accordingly in the service moment.
Contact hours: 2.5
Not financial aid eligible.

ZPDI-1268 So, You Want to Start Your Own Event Planning Business?
0.25 CEU's
An event planning business can be a fulfilling and profitable opportunity for someone who is social, organized and detail-oriented with a talent for entertaining and coordinating events. Take your passion for event planning to the next level with the best practices and tools you need to start, manage and grow a successful business. The special events industry has grown enormously in the past decade. Companies and individuals often find they lack the expertise and time to plan events themselves and hire event professionals to give their special events the attention they deserve. Explore the basics of building an event business and the necessary steps to help you succeed.
Contact hours: 2.5
Not financial aid eligible.

ZPDI-1269 Spanish for Law Enforcement (Online)
1.6 CEU's
Spanish for Law Enforcement is a self-paced, online Spanish course designed for police officers and law enforcement personnel wanting to communicate with the Spanish-speaking public. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native-pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1270 Spanish for Manufacturing and Warehousing (Online)
1.6 CEU's
Spanish for Manufacturing and Warehousing is a self-paced, online Spanish course designed for managers, supervisors, team leaders, or anybody who works with Spanish-speaking employees and coworkers in a manufacturing or warehousing setting. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1271 Spanish for Social Services (Online)
1.6 CEU's
Spanish for Social Services is a self-paced, online Spanish course designed for social workers, counselors, non-profit office staff and administrators, ministers and anyone working with Spanish speakers in an outreach capacity. Students will build their workplace Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1272 Spanish for the Medical Front Office (Online)
1.6 CEU's
Interacting with Spanish-speaking patients may arise frequently in a medical front office position. In a medical career, lacking basic knowledge of Spanish can be inefficient and dangerous. Taking this course will boost your communication skills in the workplace, as well as make you more comfortable and productive. Spanish for the Medical Front Office is a self-paced, online, occupational Spanish conversation course that solves the problems of miscommunication. Students will learn basic reception terms as well as insurance and general medical terminology. Students will build their workplace Spanish vocabulary and conversation skills by learning with pictures, native-pronunciations, readings, and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.

ZPDI-1273 Spanish for the Workplace (Online)
1.6 CEU's
Spanish for the Workplace is an innovative, self-paced, online occupational Spanish conversation course that seeks to bridge the communication gap between English and Spanish speaking supervisors and coworkers. The course incorporates visual imagery (photos associated with words and phrases for better retention), native speakers, language tips, intuitive reading exercises, interactive assessments to measure your progress and comprehension, and cultural lessons.
Contact hours: 16
Not financial aid eligible.

ZPDI-1274 Spanish Fundamentals (Online)
1.6 CEU's
Spanish Fundamentals is a self-paced, online Spanish conversation course that seeks to bridge the communication gap between English and Spanish speakers. Build your Spanish vocabulary and conversation skills while learning with pictures, native pronunciations, readings and quizzes, as well as cultural tidbits along the way.
Contact hours: 16
Not financial aid eligible.
ZPDI-1275 Become an Entrepreneur (Online)
13 CEU's
This course provides students with tools, information and strategies for starting a successful business. Discussion topics include risk, economics, the global market, ethics, legal considerations, organization, human resources and marketing. Students will gain a practical understanding of the components of a small business and the steps one must take to create and establish that business from idea to business plan to strategies for helping the business succeed and grow.
Contact hours: 130
Not financial aid eligible.

ZPDI-1276 Event Planner Career Prep (Online)
30 CEU's
This course addresses the principles and practices of event planning.
Contact hours: 300
Not financial aid eligible.

ZPDI-1281 Grant-Writing Certificate (Online)
18 CEU's
This course is ideal for anyone seeking to learn the essentials in writing or acquiring grants for private, public, or government use. If you are thinking of starting a business that utilizes grants, you will need to learn the essentials of writing, researching, obtaining and maintaining grants, and operations and strategies within the grant system.
Contact hours: 180
Not financial aid eligible.

ZPDI-1282 Editing and Proofreading for Business Writers (Online)
2.4 CEU's
To write well, you must follow the rules, so that you can best make yourself understood. We will review some basic grammar and look at correcting common mistakes that can make our writing harder to read.
Contact hours: 24
Not financial aid eligible.

ZPDI-1283 Business Writing for Busy Professionals (Online)
2.4 CEU's
Learn strategies for writing documents faster and better. This course demonstrates how to customize your documents for a specific reader and to accomplish your writing purpose. You will discover ways to create documents when time is limited. You will also master models to organize and format letters, emails and reports in order to make them clear, direct, and reader friendly. Conversational writing style and parallel structure will also be covered.
Contact hours: 24
Not financial aid eligible.

ZPDI-1284 Advanced Writing (Online)
2.4 CEU's
Whether you successfully completed our Beginner's Writing Workshop course, or you've been writing fiction on your own, there is something to be gained by moving to our next level of writing. If you are comfortable with the basics of writing such as plot, story, building characters and editing, it's time to build on your talents and delve into topics such as narratives, viewpoints, scene building and writing beginnings and endings. Join us as we explore these and other topics.
Contact hours: 24
Not financial aid eligible.

ZPDI-1285 Sales and Marketing Professional (Online)
25 CEU's
This course prepares you to work in the sales and marketing industry. Topics will include sales and marketing strategies and best practices, understanding the customer, producing, sales off goods and services, and the global marketplace.
Contact hours: 250
Not financial aid eligible.

ZPDI-1286 Grant-Writing Fundamentals (Online)
1.6 CEU's
Need funding for future projects or planned activities? Are you a student, parent, teacher or school administrator hoping to find a way to pay for research or services? This course provides a step-by-step approach to preparing winning grant proposals. Grant money can help you develop new services, strengthen your operating budget and support existing programs. Students will leave this course more confident in their grant-writing abilities.
Contact hours: 16
Not financial aid eligible.

ZPDI-1287 Marketing Tools and Tips for Success (Online)
2.5 CEU's
Discover how to be more productive and boost the impact of your marketing efforts with this course. Increase your community profile, track engagement, measure analytics and generate brand awareness. This course covers the following software and topics: Bitly, Woobox, HootSuite, and social media rules and tips.
Contact hours: 25
Not financial aid eligible.

Psychology (PSY)

PSY-1010 General Psychology
3 Credits
Scientific study of human behavior. Topics include history of psychology, scientific methods, biological processes, sensation and perception, consciousness, learning, intelligence, human development, motivation and emotion, personality, abnormal behavior, social psychology and diversity.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMSBS and OSS015.

PSY-101H Honors General Psychology
3 Credits
Examination of historical and conceptual foundations of modern psychology, its methodology and enduring issues within subdisciplines. Research basis of psychology and discussion of original source materials emphasized.
Lecture: 3 hours
Prerequisite(s): Completion of ENG-1010 College Composition I with "B" or higher; or eligibility for ENG-101H Honors College Composition; or psychology department approval.
OAN Approved: TMSBS and OSS015.
PSY-1050 Introduction to Industrial/Organizational Psychology 3 Credits
Focuses on the application of research to the workplace and provides an overview of psychological principles as they relate to issues of industry and organizations. Topics include personnel selection, job analysis and design, job descriptions, training, motivational theories, job attitudes, performance appraisal, testing and assessment, teamwork, stress, workplace violence and U.S. employment laws related to personnel decisions.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

PSY-1060 Cross-Cultural Competency for Health Care Providers 1 Credit
Focuses on cultural sensitivity, diversity awareness and multicultural communication skills for health care providers. Includes communicating with patients in ways that are culturally aware and sensitive. Practice communication skills using scenarios involving patients of diverse background.
Lecture: 1 hours
Prerequisite(s): DMS-1303 Introduction to Sonography, and DMS-1351 Patient Care Skills, and PSY-1010 General Psychology.

PSY-179H Honors Contract in Psychology 1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

PSY-182H Honors Independent Study/Research in Psychology 1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

PSY-2010 Child Growth and Development 3 Credits
Study of human growth and development from conception through puberty. Emphasis on biological, cognitive, social and emotional development. Physiological and psychological processes examined. Major developmental issues examined from diverse perspectives.
Lecture: 3 hours
Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.
OAN Approved: TMSBS and OSS045.

PSY-201H Honors Child Growth and Development 3 Credits
The physical, intellectual, personal and social development of humans from conception through adolescence is examined from the perspective of multiple psychological theories. Basic and applied research in developmental psychology is emphasized.
Lecture: 3 hours
Prerequisite(s): PSY-101H Honors General Psychology; or PSY-1010 General Psychology with a grade of "B" or higher; or departmental approval.
OAN Approved: OSS045

PSY-2020 Life Span Development 4 Credits
Study of human growth and development throughout the life span. Examination of major theories and research findings in the field of developmental psychology. Emphasis on biological, cognitive, social and emotional development. Examine the impact of diversity/culture on life span development. Identify the major issues of life span development and the influence of diversity / culture. Students will analyze, appraise and apply the major developmental theories to everyday life scenarios. Students will construct an understanding of cross cultural development across the life span.
Lecture: 4 hours
Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.
OAN Approved: TMSBS and OSS048.
PSY-202H Honors Life Span Development  
4 Credits  
Study of human growth and development throughout the life span. Analysis and evaluation of major theories and research findings in the field of developmental psychology. Emphasis on biological, cognitive, social and emotional development. Examine the impact of diversity / culture on life span development. Appraise the major issues of life span development and the influence of diversity / culture. Students will analyze, appraise and apply the major developmental theories to everyday life scenarios. Students will construct an understanding of cross cultural development across the life span.  
Lecture: 4 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2040 Social Psychology  
3 Credits  
Social influence on individuals ideas and behaviors, emphasis on issues such as attraction, prejudice, conformity and interpersonal communication.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2050 Psychology of Personality  
3 Credits  
Scientific study of personality, including motivation and development. Normal and abnormal personality considered along with its clinical applications and relevance to business and industry.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2060 Adolescent Psychology  
3 Credits  
Examines human development from puberty to young adulthood from variety of perspectives. Variations in development related to gender, social and cultural factors considered. Includes physical and sexual maturation, identity and self-image, family and peer relations, social, emotional and moral behavior, cognition and academic performance, work and leisure behavior, and transition to independence.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2080 Abnormal Psychology  
3 Credits  
Descriptive survey of behavioral and psychological disorders. Topics include past and present views of abnormal behavior, diagnostic and assessment procedures, classification, and causes, prevention and remediation of disorders.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2090 Psychology of Human Sexuality  
3 Credits  
This course examines the scientific study of Human Sexuality from a psychological perspective, providing students with an introductory overview of the biological, psychosocial, and developmental perspectives of sexuality. This course will also expose students to the diversity of human sexual expression. Topics include sexual anatomy, sexual arousal, gender identity, sexual orientation, and sexual health.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2100 Introduction to Aging  
3 Credits  
Overview of psychological aspects of maturation. Consideration of biological, emotional, perceptual, cognitive and psychosocial conditions encountered in young, middle-aged and senior adults.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2110 Educational Psychology  
3 Credits  
Examines the psychological basis of teaching and learning. Topics include theories of development and learning, learner motivation, learner differences, instructional strategies and assessment. Effects of cultural, social, and emotional factors on educational processes are also examined. This course is a requirement of teacher education programs.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  
OAN Approved: TMSBS and OSS047.  

PSY-2120 Multicultural Health Psychology  
3 Credits  
Exploration and study of current topics, research, and theory in the specialty of Health Psychology across many cultures. An overview of topics such as psychoneuroimmunology and health, the basic issues and processes. Examination of the connections between the mind and body and the impact of cognition, emotions and behavior (life style choices) on the physiology of common acute and chronic illnesses and cultural influences. Exploration of stress and coping styles with an emphasis on prevention and treatment. A survey of quality of life issues as created by health needs and resources available in the community for treatment.  
Lecture: 3 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology.  

PSY-2150 Quantitative Methods in Behavioral Science  
4 Credits  
Introduction to quantitative analysis of behavioral data. Application of descriptive and inferential statistics (including correlation, t-test and ANOVA) and SPSS computer software to data presentation, hypothesis testing and design and interpretation of behavioral research.  
Lecture: 3 hours. Laboratory: 2 hours  
Prerequisite(s): PSY-1010 General Psychology or PSY-101H Honors General Psychology, and a 2000 level Psychology course; and Algebra II course in high school or college or a sufficient score on math assessment test, or departmental approval.
PSY-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Psychology complements and exceeds requirements and expected outcomes for an existing Psychology 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Psychology, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

PSY-2820 Independent Advanced Study/Research in Psychology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

PSY-282H Advanced Honors Independent Study/Research in Psychology
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Radiography (RADT)

RADT-1300 Fundamentals of Radiography
4 Credits
Basic study of ionizing radiation relative to its nature, production, interaction with matter and effect on radiographic quality. Includes the fundamentals of radiation protection and image acquisition methods.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): Departmental approval: admission to program.

RADT-1351 Image Acquisition and Evaluation
3 Credits
Analysis and application of radiographic factors influencing the acquisition and evaluation of the radiographic image. Students are required to conduct x-ray exposure experiments, under supervision, using standard energized imaging equipment.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): RADT-1300 Fundamentals of Radiography, and departmental approval.

RADT-1400 Radiographic Positioning
3 Credits
Introduction to and application of radiographic positioning for upper and lower extremities, chest, pelvis, abdominal, gastrointestinal and urinary systems including use of contrast media. Techniques and positioning variations for pediatrics age specific patients. Basic concepts of patient care and the role of the radiographer as a member of the health care team. Specific radiological patient care skills used in radiology practices. Discussion of legal issues and doctrines with introduction of medico-legal terminology. Special emphasis on the American Registry of Radiologic Technologists’ Standards of Ethics.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Departmental approval: admission to program.

RADT-1410 Intermediate Radiographic Positioning
3 Credits
Essentials of radiographic procedures involving cerebral and facial cranium, vertebral column, thoracic cage, and specific projections of upper extremity articulations. Techniques and positioning variations for trauma, geriatric and age specific patients. Communication skills for patient-focused care, being mindful of standard precautions, and appropriate safety practices. Additional hours required for practicing radiographic positioning assignments under direct supervision of registered radiographer.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): RADT1400 Radiographic Positioning, and departmental approval: admission to program.

RADT-1911 Clinical Radiography I
7 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on positioning and patient care skills including pediatric and geriatric populations. Includes a variety of imaging: appendicular skeleton, gastrointestinal procedures, mobile radiography, trauma and non-trauma exams.
Other Required Hours: Directed Practice: 576 hours; This includes 16 hours of embedded lecture delivered at the clinical site.
Prerequisite(s): Departmental approval: admission to program.

RADT-191A Clinical Radiography I-A
6 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on positioning and patient care skills including pediatric and geriatric populations. Includes a variety of imaging: appendicular skeleton, gastrointestinal procedures, mobile radiography, trauma and non-trauma exams.
Other Required Hours: Directed practice: 496 hours; This includes 16 hours of embedded lecture delivered at the clinical site.
Prerequisite(s): Departmental approval: admission to program.
RADT-191B Clinical Radiography I-B
1 Credit
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on positioning and patient care skills including pediatric and geriatric populations. Includes a variety of imaging: appendicular skeleton, gastrointestinal procedures, mobile radiography, trauma and non-trauma exams.
Other Required Hours: Directed Practice: 80 hours to be completed in the two week intersession.
Prerequisite(s): RADT-191A Clinical Radiography I, and departmental approval: admission to program.

RADT-191S Clinical Radiography I
5 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on positioning and patient care skills including pediatric and geriatric populations. Includes a variety of imaging: appendicular skeleton, gastrointestinal procedures, mobile radiography, trauma and non-trauma exams.
Other Required Hours: Directed Practice: 400 hours; This includes 16 hours of embedded lecture delivered at the clinical site.
Prerequisite(s): Departmental approval: admission to program.

RADT-2350 Radiographic Pathology
3 Credits
Study and identification of selected pathologic conditions. Manifestations of diseases of the human body and their radiographic appearance. Adjustment of techniques due to pathologic changes and best imaging procedures will be covered.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, and RADT-1351 Image Acquisition and Evaluation, or departmental approval: admission to program.

RADT-2362 Interventional Radiography and Pharmacology
1 Credit
Introduction to specialized procedures and interventional imaging within diagnostic radiography. Foundational knowledge and skills to enable effective contribution as a member of a specialized imaging team. Basic concepts of pharmacology in interventional and diagnostic radiography. Laboratory demonstration of related patient care and technical skills.
Laboratory: 2 hours
Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, and concurrent enrollment in RADT-2350 Radiographic Pathology; and departmental approval.

RADT-2401 Imaging Systems
2 Credits
Presentation of imaging systems and imaging modalities. Topics include conventional and digital fluoroscopy, image intensification, conventional tomography, computerized tomography, magnetic resonance imaging, mammography, bone densitometry, ultrasound, nuclear medicine, radiation therapy, digital imaging processing and cross-sectional anatomy.
Lecture: 2 hours
Prerequisite(s): RADT-1351 Image Acquisition and Evaluation or concurrent enrollment; or departmental approval.

RADT-2610 Introduction to Mammography
1 Credit
Introduction to mammography. Topics include historical development, patient education, patient services and screening procedures, risk factors for breast cancer, medical history documentation and assessment.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.

RADT-2620 Anatomy and Pathology of the Breast
1 Credit
Anatomy, physiology and pathology of the breast, including benign and malignant conditions, stages of breast cancer and treatment options.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.

RADT-2630 Positioning Techniques for Breast Imaging
1 Credit
Provides a knowledge base of the various positioning techniques and projections used to perform screening and diagnostic mammography. Content consists of discussions about resolving imaging problems, selection of technical factors and national standards involved in breast imaging.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.

RADT-2640 Physics of Mammography
1 Credit
Study of physics of mammography, including instrumentation equipment, digital mammography, and the factors affecting the images and picture archiving and communications system (PACS).
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.

RADT-2650 Interventional and Special Imaging Procedures
1 Credit
Study of sterile technique, infection control, interventional procedures and OSHA regulations as applicable to a breast imaging department.
Lecture: 1 hours
Prerequisite(s): RADT-2610 Fundamentals of Mammography; and RADT-2620 Anatomy and Pathology of the Breast; and RADT-2630 Positioning Techniques for Breast Imaging, and RADT-2640 Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-2660 MQSA and ACR Regulatory Standards
1 Credit
An overview of the mammography departmental structure and essential personnel. Review of specific guidelines set forth by the regulatory agencies and accrediting bodies that closely monitor a facility’s quality assurance and quality control program, which provide the foundation for quality patient services offered by a facility. Discussion of how these regulations affect the daily operations of a facility or services it provides.
Lecture: 1 hours
Prerequisite(s): RADT-2610 Fundamentals of Mammography; and RADT-2620 Anatomy and Pathology of the Breast; and RADT-2630 Positioning Techniques for Breast Imaging, and RADT-2640 Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications and concurrent enrollment in RADT-2930 Mammography Applications.
RADT-2670 Mammography Quality Control
1 Credit
Discusses minimum standards set forth by regulatory agencies that closely monitor a facility’s Quality Assurance (QA) and Quality Control (QC) programs. Accreditation process and preparation for Food and Drug Administration (FDA)/Mammography Quality Standards Act (MQSA) inspection, as it relates to a breast imaging center.

Lecture: 1 hour
Prerequisite(s): RADT-2610 Fundamentals of Mammography; and RADT-2620 Anatomy and Pathology of the Breast; and RADT-2630 Positioning Techniques for Breast Imaging, and RADT-2640 Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications. and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-2911 Clinical Radiography II
7 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on further development of medical imaging skills gained in Clinical Radiography I with expanded imaging capacities such as cranium, spine, surgical procedures, special contrast studies, and specialized procedures.

Other Required Hours: Directed Practice: 576 hours; This includes 16 hours of embedded lecture delivered at the clinical site.
Prerequisite(s): RADT-1911 Clinical Radiography I, and departmental approval: admission to program.

RADT-291A Clinical Radiography II-A
6 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on further development of medical imaging skills gained in Clinical Radiography I with expanded imaging capacities such as cranium, spine, surgical procedures, special contrast studies, and specialized procedures. Emphasis on further development of medical imaging skills gained in Clinical Radiography I with expanded imaging capacities such as cranium, spine, surgical procedures, special contrast studies, and specialized procedures. This includes 16 hours of embedded lecture delivered at the clinical site.

Other Required Hours: Directed Practice: 496 hours.
Prerequisite(s): RADT-191B Clinical Radiography I-B, and departmental approval: admission to program.

RADT-291B Clinical Radiography II-B
1 Credit
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on further development of medical imaging skills gained in Clinical Radiography I with expanded imaging capacities such as cranium, spine, surgical procedures, special contrast studies, and specialized procedures.

Other Required Hours: Directed practice 80 hours to be completed during the two week intersession.
Prerequisite(s): RADT-291A Clinical Radiography II-A and departmental approval: admission to program.

RADT-291S Clinical Radiography II
7 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. Emphasis on further development of medical imaging skills gained in Clinical Radiography I with expanded imaging capacities such as cranium, spine, surgical procedures, special contrast studies, and specialized procedures. This includes 16 hours of embedded lecture delivered at the clinical site.

Other Required Hours: Directed practice: 576 hours.
Prerequisite(s): RADT-191S Clinical Radiography I, and departmental approval: admission to program.

RADT-2921 Clinical Radiography III
5 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. This is a capstone course in radiography to hone medical imaging and critical thinking skills in all imaging areas.

Other Required Hours: Directed Practice: 400 hours; This includes 16 hours of embedded lecture delivered at the clinical site.
Prerequisite(s): RADT-2911 Clinical Radiography II, and departmental approval: admission to program.

RADT-2925 Clinical Radiography III
7 Credits
Directed practice experience in the hospital environment. Competency-based training and evaluation on radiographic equipment and procedures. This is a capstone course in radiography to hone medical imaging and critical thinking skills in all imaging areas. This includes 16 hours of embedded lecture delivered at the clinical site.

Other Required Hours: Directed practice: 576 hours.
Prerequisite(s): RADT-291S Clinical Radiography II, and departmental approval: admission to program.

RADT-2930 Mammography Applications
3 Credits
Supervised sessions emphasizing practical application of patient preparation and positioning for diagnostic, screening and interventional/special procedure mammographic examinations to include appropriate technique, radiation protection and demonstration of professional and ethical skills. Performance, evaluation and documentation of quality control tests, as required by the Mammography Quality Standards Act (MQSA) and the American College of Radiology (ACR). Clinical experience in a mammography clinical environment for a total of 240 clinical hours which includes 8 hours of full-field digital mammography (FFDM) and 8 hours of digital breast tomosynthesis (DBT) training.

Other Required Hours: Directed Practice: 240 hours per semester, not to exceed 24 hours per week.
Prerequisite(s): RADT-2610 Introduction to Mammography, and RADT-2620 Anatomy and Physiology of the Breast, and RADT-2630 Positioning Techniques for Breast Imaging, and RADT-2640 Physics of Mammography; and concurrent enrollment in RADT-2650 Interventional and Special Imaging Procedures, and and RADT-2660 MQSA and ARC Regulatory Standards, and RADT-2670 Mammography Quality Control; or departmental approval.
RAT-1320 Audio Transducers
3 Credits
Theory, characteristics and operation of various microphone types, loudspeakers, crossovers and speaker/room monitoring considerations.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1300 Introduction to Recording, and RAT-1311 Studio Operations, or departmental approval.

RAT-1400 Concert Promotion
3 Credits
This Course is a basic guide to concert promotion. Topics include concert planning, organization, partnering, booking, sponsorships, contracts, unions, radio, press, television, street teams, flyers, budgets, graphics, printing, promotion and sales strategies, performance rights organizations, insurance, security, governmental regulations, and setting up your own small business. Students will work as a team to produce an actual concert or concert series.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None

RAT-1450 Concert Tour Promotion
3 Credits
Comprehensive study of live concert tour and road management, and is intended for individuals interested in careers in live music production, recording artists, artist managers, booking agents and record company personnel. Topics include types of tours, budgets, accounting, logistics, tour coordination, interaction with other tour professionals, contracts and merchandising.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): None

RAT-1500 Recording Theory I
3 Credits
Introduction to practical techniques of multi-track recording. Session operating procedures, multiple microphone placement, track assignment, overdubbing, mixdown, and console and recorder operation included.
Lecture: 3 hours
Prerequisite(s): RAT-1320 Audio Transducers, and RAT-1311 Studio Operations; and concurrent enrollment in RAT-1511 Recording Lab I, and departmental approval.

RAT-1511 Recording Lab I
2 Credits
Practical applications of analog and digital theory and techniques covered in Recording Theory I. Student will record and mix multi-track music and audio for video projects in a professional studio environment.
Laboratory: 6 hours
Prerequisite(s): RAT-1311 Studio Operations, and RAT-1320 Audio Transducers, or concurrent enrollment; and concurrent enrollment in RAT-1500 Recording Theory I, and departmental approval.

RAT-1520 Audio Signal Processing
3 Credits
Theory and operation of audio processing equipment. Introduction to entire range of studio effects devices including equalizers, variable gain amplifiers including compressors, limiters, gates and expanders, analog and digital delays and reverberation.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I or concurrent enrollment, or departmental approval.

Introduction to the recording industry, intended for students who have a general interest in music, sound recordings and the entertainment industry. Topics include recording industry elements and practices; employment trends and outlook; copyrights, publishing and legal issues; history of the recording industry; tools of the modern recording studio; the history of recorded sound; “critical listening” exercises identifying key elements of popular recorded music styles.
Lecture: 3 hours
Prerequisite(s): None.

RAT-1100 Sound Recording and Design
3 Credits
Introduction to theory of sound and recording process for media production. Topics include principles of sound and hearing, audio terminology, recording equipment operation, storage mediums and recording techniques for location and studio applications. For students interested in audio for video, television, film, and digital media arts.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): Departmental approval.

RAT-1100 Survey of the Recording Industry
3 Credits
Introduction to the recording industry, intended for students who have a general interest in music, sound recordings and the entertainment industry. Topics include recording industry elements and practices; employment trends and outlook; copyrights, publishing and legal issues; impact of the personal computer and the Internet on the recording industry; how traditional and non-traditional record companies work; tools of the modern recording studio; the history of recorded sound; “critical listening” exercises identifying key elements of popular recorded music styles.
Lecture: 3 hours
Prerequisite(s): None.

RAT-1160 Making Independent Recordings
3 Credits
Basic guide to making and selling independent recordings. Topics include operation of record companies, recording procedures, planning, budgets, copyrights, publishing, graphics and printing, manufacturing process, promotion and sales strategies, and setting up your own small business.
Lecture: 3 hours
Prerequisite(s): None.

RAT-1300 Introduction to Recording
3 Credits
Introduction to theory of sound and recording process. Study of audio terminology, principles of sound and hearing, basic equipment, recorder operation, analog and digital signal storage methods.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I, and MATH-1000-level MATH course or higher, and MUS-1010 Survey of European Classical Music, or MUS-1020 Survey of Jazz, or MUS-1030 Survey of Rock and Roll, or MUS-1040 Survey of African-American Music, or MUS-1050 Survey of World Music, and concurrent enrollment in RAT-1311 Studio Operations, and departmental approval.

RAT-1311 Studio Operations
3 Credits
Theory and practical applications of the recording studio. Topics include equipment setup and interface, small console signal flow and operating levels, patch bays, studio documentation, basic voice and commercial recording, editing and mixing techniques.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH 1000-level or higher, and MUS-1010 Survey of European Classical Music, or MUS-1020 Survey of Jazz, or MUS-1030 Survey of Rock and Roll, or MUS-1040 Survey of African-American Music, or MUS-1050 Survey of World Music, and concurrent enrollment in RAT-1300 Introduction to Recording, and departmental approval.
RAT-1530 Digital Audio Theory
3 Credits
Theory, methods and practical applications of current digital recording systems. Includes tape and disc-based recorders, operating system installation and maintenance, data storage methods, recording, editing and digital signal processing, and integration of digital recording equipment into modern studio environment. Student will demonstrate fundamental proficiencies in current digital recording methods and procedures.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2540 Live Sound Reinforcement.

RAT-1600 Concert Technical Production
3 Credits
Concert Technical Production is a comprehensive applied study of all aspects of venue and show production. Topics include production, lighting, sound, staging, personnel, stage management, stagehand training, touring road crew protocol, venue load in/load out procedures and musical instrument technical support at live music events. Students will apply above principles in weekly labs at live music concerts.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): None.

RAT-1816 Special Topics: Talent and Entertainment Booking
3 Credits
Provides a basic guide to talent and entertainment booking. Topics include booking, contracts, scheduling, organization, sales strategies, talent agencies, databases, partnering, governmental regulations, using Internet technology and setting up your own booking business. Students must have a working knowledge of computers and the Internet.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

RAT-1820 Independent Study/Research in Recording Arts Technology
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

RAT-2300 Recording Theory II
3 Credits
Continuation of practical techniques of recording. Topics include intermediate recording and mixing theory, recording techniques, critical listening and intermediate ear training.
Lecture: 3 hours
Prerequisite(s): RAT-1320 Audio Transducers, RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I, and concurrent enrollment in RAT-2310 Recording Lab II, or departmental approval.

RAT-2311 Recording Lab II
2 Credits
Practical applications of theory and techniques covered in Recording Theory. Student will produce, record and mix various styles of musical and audio for video projects. Includes human relations and talent management.
Laboratory: 6 hours
Prerequisite(s): RAT-1320 Audio Transducers, and RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I, and concurrent enrollment in RAT-2300 Recording Theory II.

RAT-2330 Digital Audio Mixing
3 Credits
Advanced applications of digital audio recording, editing and mixing using current digital console and non-linear workstation environments. Topics include virtual console basics, digital signal processing, plug-ins, digital signal routing, digital automation basics, file interchange and basic project mastering techniques.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1530 Digital Audio Theory, or department approval.

RAT-2341 Location Recording
2 Credits
Techniques used in non-studio recording for news gathering, conference, public speaking, music and sound effects recording. Main emphasis will be hands-on, and students will record, edit and mix a variety of location projects.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): RAT-1320 Audio Transducers, or departmental approval.

RAT-2440 Sound for Theatre
3 Credits
This course is cross-listed as THEA-2440. Credit can only be earned once for either course. Introduction the essentials of theatrical sound. Topics covered include microphone use, microphone placement, amplification, theatrical acoustics, Foley sound, recorded effects, and production methodology.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecraft, and RAT-1300 Introduction to Recording, and RAT-1310 Studio Operations.

RAT-2540 Live Sound Reinforcement
3 Credits
Theory and operation of various live sound reinforcement systems. Includes acoustics, system setup, signal flow, mixing consoles, microphones, signal processing, amps, crossovers and speaker systems.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1320 Audio Transducers, or department approval.

RAT-2550 Advanced Live Sound Reinforcement
3 Credits
This is a hands-on lab course. A small team of students under the direction of a faculty supervisor set up and operate sound systems at live music concerts. Topics include sound system components, assembly, operation, location recording, technical maintenance and performance. Students serve as crew for a minimum of twelve shows during the semester at local venues using small and medium size sound systems.
Laboratory: 6 hours
Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2540 Live Sound Reinforcement.
RAT-2814 Special Topics: Internet Radio Production I
3 Credits
Principles of modern radio broadcasting with an emphasis on basic skills needed to operate in a broadcast setting. Topics include the historical context of radio and its role in society, scripting skills for broadcast, interview and on-air voice techniques, and recording and production skills needed for internet-based radio broadcasting.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1310 Studio Operations or JMC-1011 Introduction to Mass Communications; or departmental approval.

RAT-2820 Advanced Independent Study/Research in Recording Arts Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

RAT-2940 Audio Recording Field Experience
1-2 Credits
Cooperative effort between the College and local and national audio-related businesses to provide students with work experience in industry setting. Student, instructor and internship supervisor will develop and implement an "Individual Field Experience Training Plan" which includes general responsibilities, and a training sequence designed to maximize hands-on industry training under actual working conditions.
Other Required Hours: Field Experience: 12 to 24 hours per week.
Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and departmental approval.

RAT-2990 Recording Arts & Tech Capstone
3 Credits
Capstone course in Recording Arts and Technology. Student will design and implement capstone recording project that applies the technical, oral, behavioral and written skills learned in previous RAT coursework, resulting in cumulative evaluation of student recording skills based on established RAT standards. Includes discussion of emerging audio technologies and their impact on recording industry career opportunities.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and departmental approval.

Transportation Innovation Center (ZRTR)

ZRTR-1008 CDL Class B
16 CEU’s
This course is designed to familiarize the student with the skills required to obtain a Class “B” CDL driver’s license. It includes classroom, driving skills and road driving. Cost: $5295 plus a non-refundable $200 administrative fee.
Contact hours: 160
Not financial aid eligible.

ZRTR-1014 CDL Driver Pre-Employment Evaluation
0.15 CEU’s
Contact hours: 1.5
Not financial aid eligible.

ZRTR-1021 Five-Hour CDL Refresher
0.5 CEU’s
Practical skills and road training for current Ohio CDL drivers.
Contact hours: 5
Not financial aid eligible.

ZRTR-1022 10 Hour CDL Refresher
1 CEU’s
Practical skills and road training for current Ohio CDL drivers.
Contact hours: 10
Not financial aid eligible.

ZRTR-1025 Simulator 8 Hour Fuel Management Techniques
0.8 CEU’s
This program feature: 8 hours of fuel saving and optimization of performance techniques
Contact hours: 8
Not financial aid eligible.

ZRTR-1026 Simulator 4 Hour Commercial Bus Driving or School Bus Driving
0.4 CEU’s
Offering a unique augmentation to classroom training with a full experience simulator, we provide students with the opportunity to sit behind the wheel in a realistic simulated environment with high quality graphics, 3D sound and accurate force feedback, vibrations and motion. This program provides students with lifelike scenarios of a variety of environments that driver’s may encounter. This program features 4 Hours of Intensive Shifting and Defensive Driving Techniques for Commercial Bus Driving or School Bus Driving.
Contact hours: 4
Not financial aid eligible.

ZRTR-1027 Simulator 8 Hour Bus/School Fuel Management Techniques (VS900)
8 CEU’s
This program features: 8 hours of fuel saving and optimization of performance techniques for Commercial Bus Driving or School Bus Driving.
Contact hours: 80
Not financial aid eligible.

Recreation (ZREC)

ZREC-1289 Cash In on a Career in Captioning and Court Reporting
0 Contact Hours
Captioners and court reporters are in demand! Learn how you can change your life and have the potential to earn $100,000 or more. During this free online two-week mini course, we will explore career opportunities and training options so you may cash in on this flexible, exciting, and lucrative career.
Contact hours: 10
Not financial aid eligible.
ZRTR-1028 Simulator 4 Hour Commercial Truck Driving Shifting and Defensive Techniques (60)
0.4 CEU's
Offering a unique augmentation to classroom training with a full experience simulator, we provide students with the opportunity to sit behind the wheel in a realistic simulated environment with high quality graphics, 3D sound and accurate force feedback, vibrations and motion. This program provides students with lifelike scenarios of a variety of environments that driver’s may encounter. Skills in defensive driving, gear shifting and fuel management are provided to introduce students to the proper techniques needed to overcome hazardous situations. This one of a kind approach to learning matched with skilled professional faculty makes this program an exceptional training experience for all students.
Contact hours: 4
Not financial aid eligible.

ZRTR-1029 CDL Driver Contract Training
0.1 CEU's
Class provides additional driver training for current CDL-A or CDL-B drivers.
Contact hours: 1
Not financial aid eligible.

ZRTR-1031 CDL-B to CDL-A Bridge Course
12 CEU's
This course is designed for current Ohio CDL-B drivers who wish to upgrade their CDL-B to a CDL-A.
Contact hours: 120
Not financial aid eligible.

ZRTR-1033 Standard Shift Conversion Course
4 CEU's
The Standard Shift Conversion course is for CDL-A or CDL-B holders with an automatic restriction on their license.
Contact hours: 40
Not financial aid eligible.

ZRTR-1034 Passenger Endorsement Training
4 CEU's
The Passenger Endorsement training is a separate class for current CDL A or CDL B Ohio Drivers License holders. This course is designed to familiarize the student with the skills required to obtain the Passenger Endorsement on their CDL.
Contact hours: 40
Not financial aid eligible.

Religious Studies (REL)

REL-1010 Introduction to Religious Studies
3 Credits
Comprehensive introduction to concepts of religion, attributes of God, myth and symbol, faith and reason, rituals, and overview of major historical religions.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMAH.

REL-179H Honors Contact in Religious Studies
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

REL-1820 Independent Study/Research in Religious Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

REL-182H Honors Independent Study/Research in Religios Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

REL-2010 Religious Traditions of Western Christianity
3 Credits
Comprehensive introduction to history, writings, teachings, and liturgical practices of Western Christianity. Includes historical Jesus, new testament church, patristic church, medieval church, Protestant Reformation, and Church today (including ecumenical concerns following Second Vatican Council).
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

REL-2020 Religious Traditions of Judaism
3 Credits
Comprehensive introduction to history, writings, teachings, and liturgical practices of Judaism. Includes historical background, Old Testament, special Jewish festivals, and Judaism’s adaptation to modern society.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.
REL-2060 African-American Religious Experience
3 Credits
Comprehensive introduction to religious movements and institutions of African-Americans from period of slavery to present. Includes historical background, Protestantism, Islam, civil rights movement and modern role of religion in African-American life.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

REL-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Religious Studies complements and exceeds requirements and expected outcomes for an existing REL-2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hour
Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in Religious Studies, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

REL-2820 Independent Advanced Study/Research in Religious Studies
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

REL-282H Advanced Honors Independent Study/Research in Religious Studies
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

### Respiratory Care (RESP)

**RESP-1300 Respiratory Care Equipment**
4 Credits
Overview of application of physical principles pertaining to physiologic function and diagnostic and therapeutic modalities employed in field of Respiratory Care. Function and operation of respiratory care equipment: primary gas systems, gas regulating devices, oxygen controllers, humidifiers, nebulizers, oxygen administering devices, oxygen analyzers, airways, manual resuscitators, monitoring and measuring equipment, and sterilization methods.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): Concurrent enrollment in RESP-1310 Cardiopulmonary Physiology, and departmental approval: admission to program.

**RESP-1310 Cardiopulmonary Physiology**
3 Credits
Physiology of cardiovascular and pulmonary systems with emphasis on electrophysiology of the heart, electrocardiography interpretation, blood flow characteristics and hemodynamics. Pulmonary system emphasis on lung volumes, dynamics of ventilation, pulmonary function tests, diffusion, ventilation to perfusion characteristics, gas transport, oxygenation studies and control of ventilation.
Lecture: 3 hours
Prerequisite(s): Departmental approval.

**RESP-1320 Acid/Base and Hemodynamics**
2 Credits
Overview of acid-base regulation, integrating physiologic functions of renal and respiratory systems. Emphasis on body buffer systems, oxygen and carbon dioxide transport systems, basic chemistry and circulating blood forces through the body. Patient analysis and principles of equipment used in analysis of acid base, oxygenation status, cardiac output and cardiac blood pressures addressed.
Lecture: 2 hours
Prerequisite(s): RESP-1300 Respiratory Care Equipment, and RESP-1310 Cardiopulmonary Physiology.

**RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases**
5 Credits
Theory and application of cardiopulmonary assessment, medical records, and charting. Includes physical assessment, assessment of lab values, radiologic evaluation, vital signs, EKG and pulmonary function testing and interpretation. Discussion of diseases including emphysema, chronic bronchitis, asthma, bronchiectasis, cystic fibrosis, pneumonia, adult respiratory distress syndrome, emphysema, pulmonary edema, cancer, acquired immune deficiency syndrome, tuberculosis, myasthenia gravis, Guillain-Barre and amyotrophic lateral sclerosis. Emphasis on identifying signs and symptoms of pulmonary diseases, and basic respiratory management of patient.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): RESP-1300 Respiratory Care Equipment, and RESP-1310 Cardiopulmonary Physiology.

**RESP-1340 Pharmacology for Respiratory Care**
2 Credits
General principles of pharmacology and calculations of drug dosages. Discussion of pharmacologic principles and agents used in treatment of cardiopulmonary disorders.
Lecture: 2 hours
Prerequisite(s): RESP-1300 Respiratory Care Equipment and RESP-1310 Cardiopulmonary Physiology.
RESP-1700 Asthma Management
1 Credit
Introduction to asthma pathology and treatment. Emphasizes web-based education to asthma symptoms, risk factors, severity, pharmacologic treatment, and care plans. Cultural concepts of health and disease.
Lecture: 1 hours
Prerequisite(s): None.

RESP-2210 Introduction to Mechanical Ventilation
1 Credit
Introduction to mechanical ventilation with special emphasis on ventilator terminology. Covers information necessary to understand basic functions of a life support ventilator.
Lecture: 1 hours
Prerequisite(s): Concurrent enrollment in RESP-2940 Respiratory Care Field Experience I.

RESP-2300 Basic Therapeutic Procedures
3 Credits
Theory, clinical application and analysis of basic respiratory care procedures. Emphasis on oxygen therapy, medical gas therapy, tracheal suctioning, humidity and aerosol therapy, chest physical therapy, incentive spirometry, intermittent positive pressure breathing, airway management, bronchoscopy, and thoracotomy tubes.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases.

RESP-2310 Mechanical Ventilation
4 Credits
Theory and application of mechanical ventilation techniques with emphasis on mechanical ventilator characteristics, physiologic effects, patient set-up and evaluation, maintenance of oxygenation, weaning techniques, ventilation safety and nutritional concerns. Discussion on ventilator management and the medicolegal issues involving life support systems.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): RESP-2210 Introduction to Mechanical Ventilation, and concurrent enrollment in RESP-2950 Respiratory Care Field Experience II.

RESP-2320 Pediatric/Neonatal Respiratory Care
2 Credits
Presentation of theory and its practical application to pediatric and neonatal respiratory disease states. Includes pathophysiology, etiology, patient assessment and treatment using equipment unique to this specialty area.
Lecture: 2 hours
Prerequisite(s): RESP-2300 Basic Therapeutic Procedures, and concurrent enrollment in RESP-2310 Mechanical Ventilation.

RESP-2330 Respiratory Home Care/Rehabilitation
1 Credit
Lecture: 1 hours
Prerequisite(s): RESP-2950 Respiratory Care Field Experience II

RESP-2341 Patient Management Problems
1 Credit
Reinforces the clinical education components of information gathering and decision-making specific to assessment and treatment of cardiopulmonary impairment. Specific emphasis placed on the methodologies involved in obtaining and prioritizing diagnostic information. Comprehensive self-assessment at the advanced practitioner level of respiratory care steps involved in research process.
Lecture: 1 hours
Prerequisite(s): RESP-2950 Respiratory Care Field Experience II

RESP-2340 Respiratory Care Field Experience I
1 Credit
Field experience in the clinical setting on respiratory care equipment, policies, and procedures. Emphasis on patient assessment, bedside pulmonary function testing, aerosol therapy, arterial blood gas punctures and oxygen therapy.
Other Required Hours: 24 hours field experience per week for 10 weeks (240 hours total).
Prerequisite(s): RESP-2940 Respiratory Care Field Experience I, and concurrent enrollment in RESP-2940 Respiratory Care Field Experience II.

RESP-2350 Respiratory Care Field Experience II
2 Credits
Field experience in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on intubation, pulmonary function testing, airway clearance techniques, hyperinflation techniques, manual ventilation and suctioning, and mechanical ventilation. Clinical activities also include proficiencies completed in patient assessment, aerosol therapy, bedside pulmonary function testing, arterial blood gas sampling and analysis, and oxygen therapy. Other required hours: 24 hours field experience per week for 15 weeks (360 total hours).
Prerequisite(s): RESP-2210 Introduction to Mechanical Ventilation, RESP-2310 Mechanical Ventilation or concurrent enrollment, and RESP-2940 Respiratory Care Field Experience I.

RESP-2360 Respiratory Care Field Experience III
2 Credits
Capstone course in Respiratory Care. Field experience in clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on adult invasive and non-invasive mechanical ventilation, weaning from mechanical ventilation, pediatric patient care, and respiratory care in the long-term acute care facility environment.
Other Required Hours: 24 hours field experience per week for 15 weeks (360 hours total).
Prerequisite(s): RESP-2950 Respiratory Care Field Experience II.

Russian (RUSS)

RUSS-1010 Beginning Russian I
4 Credits
Introduction to modern Russian language. Emphasis on listening comprehension, speaking, reading, writing, functional and interpersonal communication, and culture, through multiple approaches including audio, video and computer components, and supporting study of basic principles of grammar.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.
RUSS-1020 Beginning Russian II
4 Credits
Continued study of grammar and vocabulary. Oral and written exercises. Reading of texts of medium difficulty. Developing aural comprehension skills and ability for oral expression through patterns learned from audio-visual materials used in classroom.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): RUSS-1010 Beginning Russian I, or departmental approval.

RUSS-1820 Independent Study/Research in Russian
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

RUSS-182H Honors Independent Study/Research in Russian
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

RUSS-2010 Intermediate Russian I
3 Credits
Introduction to more advanced vocabulary and speech patterns and continuation of in-depth study of grammar. Practical application of skills of understanding, speaking, reading and writing Russian. Cultural exposure through reading texts and using multi-media approaches. Attendance at various cultural events may be required.
Lecture: 3 hours
Prerequisite(s): RUSS-1020 Beginning Russian II, or departmental approval.

RUSS-2020 Intermediate Russian II
3 Credits
In-depth study of advanced vocabulary and speech patterns, complex sentence structures and grammar. Advanced skills in understanding, speaking, reading and writing. Continued cultural exposure through text reading, film viewing, audio, video and computer materials and discussions.
Lecture: 3 hours
Prerequisite(s): RUSS-2010 Intermediate Russian I, or departmental approval.

RUSS-2410 Russian Conversation and Composition
3 Credits
Conversation and composition revolve around topics of general interest taken from everyday life. In conversing, students develop pronunciation, intonation, fluency and comprehension skills. Writing fosters practice of familiar terminology mixed with new vocabulary and idioms.
Lecture: 3 hours
Prerequisite(s): RUSS-2020 Intermediate Russian II, or departmental approval.

RUSS-2420 Russian Literature and Culture
3 Credits
Survey of Russian literature, emphasizing 19th and 20th centuries, highlighting prose and verse of representative writers and their works in perspective of traditional and contemporary Russian culture.
Lecture: 3 hours
Prerequisite(s): RUSS-2020 Intermediate Russian II, or departmental approval.

RUSS-2820 Advanced Independent Study/Research in Russian
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

RUSS-282H Advanced Honors Independent Study/Research in Russian
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Sales (ZSLS)

ZSLS-1009 Mastering the Essentials of Selling
1 CEU's
Enhance your selling efforts, increase productivity and boost sales. This strategy-backed course encompasses the entire sales process, from building rapport and setting expectations to closing the sale. Participants will learn proven techniques for engaging prospects, presenting a value proposition and overcoming obstacles to close deals more effectively. Individuals new to sales and seasoned sales representatives alike will benefit from this interactive and practice-based session.
Contact hours: 10
Not financial aid eligible.

Sociology (SOC)

SOC-1010 Introductory Sociology
3 Credits
Scientific study of human society and social interaction. Includes an overview of the principles, perspectives, concepts, and research methods used in the sociological field with more intensive study in the following areas: culture, socialization, formal organizations, social structure, and social stratification. Additional emphasis is placed on the application of sociological concepts to current events.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMSBS and OSS021.
SOC-101H Honors Introductory Sociology  
3 Credits  
In-depth analysis of sociological perspectives, theories, concepts, and research methods. Emphasizes thorough comprehension of concepts such as culture, socialization, and social stratification through application of concepts to real-world situations.  
Lecture: 3 hours  
Prerequisite(s): Eligibility for ENG 101H Honors College Composition I.  
OAN Approved: TMSBS and OSS021.

SOC-1020 Social Institutions  
3 Credits  
A sociological examination of major social institutions: the family, religion, education, politics, economy, and health care. Analysis of social dynamics and change. Use of theory and research to develop an understanding of institutional development and evolution.  
Lecture: 3 hours  
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.  
OAN Approved: TMSBS.

SOC-179H Honors Contract in Sociology  
1 Credit  
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).  
Lecture: 1 hours  
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

SOC-1820 Independent Study/Research in Sociology  
1-3 Credits  
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

SOC-182H Honors Independent Study/Research in Sociology  
1-3 Credits  
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

SOC-2010 Social Problems  
3 Credits  
Analysis of contemporary American social problems such as race, poverty, drugs, sex, violence, crime and delinquency. Sociological approach used to understand underlying factors and history of problems, and to evaluate individual and societal solutions.  
Lecture: 3 hours  
Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.  
OAN Approved: TMSBS and OSS025.

SOC-201H Honors Social Problems  
3 Credits  
In-depth sociological analysis of contemporary social problems in the United States, cross-cultural solutions and their implications for individuals, social institutions and society. Emphasis on application of sociological imagination, sociological theories and multiple research methods to understand social forces that promote social inequalities and their consequences, based on race/ethnicity, gender, social class and other factors. Course culminates in student’s clarification and appraisal of personal values, and formulation of personal strategy to influence social policy and affect change regarding a specific social problem examined in the course.  
Lecture: 3 hours  
Prerequisite(s): SOC-1010 Introductory Sociology or SOC-101H Honors Introductory Sociology and eligibility for ENG-101H Honors College Composition I.  
OAN Approved: TMSBS and OSS025.

SOC-2020 Sociology of the Family  
3 Credits  
Historical, comparative, and contemporary analysis of marriages and families and their relationship to other social institutions. Sociological perspectives used to understand social, psychological and economic aspects of intimate interpersonal relations across the lifecourse and among a variety of lifestyles and cultures.  
Lecture: 3 hours  
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.  
OAN Approved: TMSBS and OSS023.

SOC-2040 Introduction to Social Work  
3 Credits  
Introduces students to ideas, venues, and susceptible populations associated with the social work profession. Stresses knowledge, ethics, principles, values, and skills that exemplify the foundation of a professional social worker. Presents a survey of theoretical and practical knowledge used in social work practice at the entry level.  
Lecture: 3 hours  
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, and ENG-1010 College Composition I or ENG-101H Honors College Composition I.
SOC-2051 Introduction to Social Welfare
3 Credits
Surveys history, functioning, and social issues of social welfare system relating them to broader American socio-economic and political systems. Special focus on problems of economically and socially disadvantaged groups.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.
OAN Approved: TMSBS.

SOC-2060 Human Behavior and the Social Environment
3 Credits
Social work perspective on human development across the life cycle. Focuses on the biological, psychological, social, cultural and spiritual aspects of human functioning. Human diversity approach consistent with needs of social work students preparing for practice.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, and PSY-1010 General Psychology or PSY-101H Honors General Psychology.

SOC-2070 Poverty in the United States
3 Credits
Survey of social and personal dimensions of poverty in the United States regarding individuals, groups and larger communities. For persons wishing to develop in-depth understanding and skills development regarding the impact of poverty. Designed for students interested in social work, education, nursing and other health related disciplines.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology or SOC-2051 Introduction to Social Welfare, or SOC-2040 Introduction to Social Work.

SOC-2100 Aging and Society
3 Credits
Cross-cultural examination of social, biological and psychological process of aging. Societies studied with regards to social characteristics of older people, their social roles, relations with various social institutions, social networks, voluntary associations. Impact of social class, race, ethnicity, gender, religion and the media on aging and ageism considered.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology; and ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

SOC-2110 Death and Dying
3 Credits
Examination of death and dying through a multi-disciplinary approach to understand connection of death and dying in various contexts: sociological, ethical, medical, legal, psychological, and religious.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology; and ANTH-1010 Cultural Anthropology.
OAN Approved: TMSBS.

SOC-2150 Deviance
3 Credits
Sociological examination of deviant attitudes, behaviors and conditions. Exploration of how actions come to be defined as deviant, theories of deviance, and methods of social control reaction. Different types of deviant behavior examined, including sexual deviance, crime, drugs, medical deviance, and other forms of deviant behavior.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test; and SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology or ANTH-1010 Cultural Anthropology or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

SOC-2160 Introduction to Criminology
3 Credits
To develop a sociological framework for examining crime. Review and apply major theories of criminal behavior. Critically examine how specific behaviors and social conditions become defined as crime. Use of sociological principles to assess the criminal justice system’s ability to deter, punish, and rehabilitate offenders.
Lecture: 3 hours
Prerequisite(s): ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, PSY-101H Honors General Psychology, or SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or CJ-1000 Introduction to Criminal Justice.

SOC-2210 Dating and Intimate Relationships
3 Credits
Intimate relationships studied on life course continuum from early to late adulthood, taking into consideration profound effects exerted by ethnicity, race, gender, human sexuality, socioeconomic status, age and place of residency. Analysis of characteristics and trends related to various types of intimate relationships including friendship, dating, cohabitation, and marriage. Critical issues considered are relationship violence, gender identity, relationship dissolution, and/or resolution. Students use the concept of sociological imagination, public issues, and personal troubles to link events in society to the state of intimate relationships in America today with emphasis on the role of mass media and social media.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or ANTH-1010 Cultural Anthropology or PSY-1010 General Psychology, or PSY-101H Honors General Psychology; and ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

SOC-2310 Contemporary American Black-White Relations
3 Credits
Sociological and psychological analysis of contemporary American black-white relations. Study of minority-majority behavior patterns as related to social-historical structure, stratification, and power. Consideration of programs, movements and alternative solutions to present conditions.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors, or ANTH-1010 Cultural Anthropology.
OAN Approved: TMSBS.
SOC-2410 Sociology of Gender
3 Credits
Analysis of the social construction of gender, gender roles, and gender stratification in American society. Compare gender assumptions within social and cross-cultural contexts. Examine socialization and social psychological influences on gender identity, the impact of gender in relationships, the importance of sex and gender in institutions and organizations, and the impact of recent social movements and social policies.
Lecture: 3 hours
Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or any 2000 level course in Sociology.

SOC-2510 Urban Sociology
3 Credits
Analysis of historical development of contemporary metropolis with its challenges to diversity, equality, inclusion, and change. Sociological concepts, theories and research methods used to characterize urban life and examine interrelatedness of social institutions typical of postmodern society. Cross-national comparisons drawn.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.
OAN Approved: TMSBS.

SOC-2550 Race and Ethnic Relations
3 Credits
Analysis of sources, processes, and consequences of current intergroup relations in the United States; identification of various segments of population, their history and patterns of adaptation to prejudice and discrimination; and exploration of attempts to equalize power differences and structured social inequality. Includes cross-cultural comparisons.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or HIST-1720 African-American History 1877 to Present, or ANTH-1010 Cultural Anthropology.
OAN Approved: TMSBS and OSS050

SOC-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Sociology complements and exceeds requirements and expected outcomes for an existing Sociology 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Sociology, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

SOC-2817 Special Topics: Sociology of Law
3 Credits
This course introduces students to the function of law in human societies and explores the social forces that shape legal outcomes and the ways law, in turn, influences social life. Using the Sociological perspective, we will explore classical and contemporary theoretical contributions to the Sociology of Law and review theories relevant to the study of law as an instrument of social control, social change, and the law impact on social movements. Furthermore, the course will examine how law perpetuates inequality in the outcome of legal decisions as it relates to race, ethnicity, gender, and social status.
Lecture: 3 hours
Prerequisite(s): SOC-1010 Introductory Sociology, or CJ-1000 Introduction to Criminal Justice, or PL-1000 Introduction to Paralegal Profession, or ANTH-1010 Cultural Anthropology.

SOC-2820 Independent Advanced Study/Research in Sociology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMSBS and OSS050

SOC-282H Honors Independent Advanced Study/Research in Sociology
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

SOC-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour
Prerequisite(s): See campus COOP Advisor for the Cooperative Education Program application

Spanish (SPAN)

SPAN-1011 Beginning Spanish Language and Cultures I
4 Credits
Introduction to Spanish Language and Cultures through multiple approaches with emphasis on spoken and written communication, listening and reading comprehension, and cultural awareness. Practice of basic functional Spanish in basic oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None. OAN Approve: OFL019 and OFL023 (1 of 2 courses, both must be taken).
SPAN-1021 Beginning Spanish Language and Culture II
4 Credits
Second beginning course continues introducing Spanish Language and Culture through multiple approaches with emphasis on development of spoken and written communication, listening and reading comprehension, and cultural awareness. Practice of functional Spanish in oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): SPAN-1011 Beginning Spanish Language and Culture I, or one year of high school Spanish, or departmental approval.
OAN Approved: OFLO20, and OFLO23 (2 of 2 courses, both must be taken).

SPAN-1030 Spanish for Law Enforcement
4 Credits
Includes cross cultural issues relevant to interactions between non-Hispanic law enforcement officers and the Hispanic community; involves introduction too and practice with basic Spanish vocabulary specific to real life situations in the law enforcement profession.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.

SPAN-1040 Beginning Spanish for Business
4 Credits
Course provides students with the capability of communicating in Spanish at a basic level as required for business professionals. Exposure to cross-cultural issues relevant to interactions between non-Hispanic business owners and employees and Hispanic community members. Coursework involves an introduction to and practice with vocabulary specific to real-life situations in the business profession at the basic level.
Lecture: 4 hours
Prerequisite(s): None.

SPAN-179H Honors Contract in Spanish
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

SPAN-1820 Independent Study/Research in Spanish
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

SPAN-182H Honors Independent Study/Research in Spanish
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

SPAN-2010 Intermediate Spanish Language and Culture I
3 Credits
As the first in a series of two intermediate Spanish courses, 2010 reviews and expands upon introductory level vocabulary, grammar and culture through multiple approaches. Emphasis on further development of spoken and written communication, listening and reading comprehension, and cultural awareness in functional contexts is designed to build upon established proficiencies at the beginning level.
Lecture: 3 hours
Prerequisite(s): SPAN-1021 Beginning Spanish Language and Cultures II, or two years of high school Spanish, or departmental approval.
OAN Approved: OFLO21, OFLO24 (course 1 of 2, both must be taken).

SPAN-2020 Intermediate Spanish Language and Cultures II
3 Credits
Second intermediate course further develops spoken and written communication, listening and reading comprehension, and cultural awareness and competency in functional contexts through multiple approaches geared towards greater fluency.
Lecture: 3 hours
Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval; or three years of high school Spanish; or prior learning with departmental approval.
OAN Approved: OFLO22, OFLO24 (course 2 of 2, both must be taken).

SPAN-2411 Spanish Conversation & Composition
3 Credits
Discussion on topics of everyday life, colloquialsims, vocabulary augmentation and improvement of speech patterns. Practice in writing compositions.
Lecture: 3 hours
Prerequisite(s): SPAN-2020 Intermediate Spanish Language and Cultures II, or concurrent enrollment with departmental approval; three years of high school Spanish.

SPAN-2420 Introduction to Spanish Culture, Civilization, and Literature
3 Credits
Introduction to Spain's culture, civilization, and literature. Overview of Spain's formation, and interrelationship between its prehistorical and historical foundation, political, economic, social, cultural, artistic, and literary components. Selected cultural, and artistic elements, as well as various literary writers, exemplifying literary periods through examples of their work, are highlighted.
Lecture: 3 hours
Prerequisite(s): SPAN-2020 Intermediate Spanish Language and Cultures II, or concurrent enrollment with departmental approval; or three years of high school Spanish with departmental approval.
SPAN-2430 Civilization, Culture, and Literature of Latin America  
3 Credits  
Course focuses on historical, political, economic, cultural, and social events in the American continent prior to Spanish and Portuguese exploration, conquest and colonization. Examines political, economic, cultural and social changes occurred during the colonial period in territories known as Latin America; causes and effects of Latin American countries’ independence; and panoramic view of selected countries events after independence up to present time. Additionally, explores the interrelationship between cultural, artistic and literary expressions, historical and cultural events. Studies literary texts, currents and analyses selected significant writers’ literary texts.  
Lecture: 3 hours  
Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval; or three years of high school Spanish; or prior learning with departmental approval.

SPAN-279H Sophomore Honors Contract  
1 Credit  
Sophomore Honors Contract in Spanish complements and exceeds requirements and expected outcomes for an existing Spanish 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).  
Lecture: 1 hours  
Prerequisite(s): Departmental approval: must be taken concurrently with a 2000 level Spanish course.

SPAN-2820 Independent Advanced Study/Research in Spanish  
1-3 Credits  
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

SPAN-282H Honors Independent Advanced Study/Research in Spanish  
1-3 Credits  
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Sport and Exercise Studies (SES)  

SES-1001 Introduction to Sport and Exercise Studies  
2 Credits  
An overview of the field of exercise science and the Sport and Exercise Studies program at Cuyahoga Community College. Objectives include describing various aspects of careers, identifying professional resources and organizations, and determining opportunities for advanced study in sport and exercise studies. Requires observation and assignments outside of the classroom.  
Lecture: 2 hours  
Prerequisite(s): None.

SES-1040 Teaching Exercise Training Techniques  
3 Credits  
Instruction on how to teach basic principles, concepts, and techniques of exercise. Students will learn to instruct cardiovascular, resistance, functional and flexibility exercises and activities. Includes proper instructional exercise techniques, guidelines, safety, injury prevention, and basic exercise programming. Students will assist in teaching exercise techniques to PE and/or recreation classes. Outside class assignments may be required.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None.

SES-1100 Fundamentals of Fitness and Sport Management  
3 Credits  
An in-depth look at fitness and sport management in the health/ recreation/fitness club industry. Topics include management, budget, finances, membership, sales, marketing, risk management, liability and operation of a health/recreation/fitness club business.  
Lecture: 3 hours  
Prerequisite(s): None.

SES-1201 Fitness and Wellness Coaching  
3 Credits  
Concepts of fitness and wellness coaching including health behavior change theories, client assessment, goal setting, evaluation processes, coaching dialogue, and coaching ethics. Students will learn how to develop a coaching approach. Coaching sessions required in class and/or out of class.  
Lecture: 3 hours  
Prerequisite(s): None.

SES-1820 Independent Study/Research in Sports and Exercise Studies  
1-3 Credits  
Directed individual study. Study/research and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval and instructor approval and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
SES-2000 Essentials of Sports Injury Care
3 Credits
Designed to provide entry level knowledge in the field of sport and fitness related injuries. This course includes basic anatomy of common injuries, evaluation techniques, preventive measures to reduce the incidences of injuries and knowledge of basic treatment procedures. Legal and ethical issues will also be discussed.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): HLTH-1310 Cardiopulmonary Resuscitation or EMT-1310 Cardiopulmonary Resuscitation or concurrent enrollment, or HLTH-1230 Standard First Aid and Personal Safety, or concurrent enrollment or departmental approval.

SES-2010 Exercise and Movement Anatomy
3 Credits
Designed for movement and fitness professionals. Examines the anatomical structures, joint actions, and the neuromyofascial and musculoskeletal system of human movement related to exercise, sport, recreation and dance.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.

SES-2100 Sport and Exercise Physiology
3 Credits
Designed to increase student’s knowledge and understanding about human physiology and the adaptations that occur during exercise. Topics include energy metabolism, cardiovascular, respiratory, endocrine, neuromuscular, nutrition, environmental factors, and applied exercise physiology. The laboratory is designed to complement the lecture area.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2130 Kinesiology: Fundamentals of Human Movement
3 Credits
The scientific study of human movement based on the neuromuscular, fascial and skeletal systems and the principles of physiology and mechanics as it relates to movement in exercise, recreation, sport and dance.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I or SES-2010 Exercise and Movement Anatomy or departmental approval.

SES-2300 Personal Training Certification Preparation
3 Credits
Introductory course in personal training. Covers basic exercise science, fitness evaluation and consultation, exercise techniques, program design, clients with unique needs, safety and legal issues, and business management for personal trainers. Prepares students to take national certification on examinations for personal training.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.

SES-2310 Advanced Training Concepts and Techniques
3 Credits
Provides students with an opportunity to develop an in-depth understanding of the advanced principles and concepts of functional, resistance, sports performance, cardiorespiratory and flexibility exercises and training/conditioning programs. Students will learn safe and proper instructional techniques and teaching methodologies using a variety of equipment. Outside class assignments may be required.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques or departmental approval.

SES-2320 Group Fitness Instructor Certification Preparation
3 Credits
Designed for the individual who is interested in becoming a group fitness/exercise instructor. Focus is on developing instructional techniques such as cueing, choreography, and how to safely modify classes to meet the needs of both healthy individuals and special populations for all formats of group exercise classes.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.

SES-2330 Motor Learning and Development
3 Credits
Provides students with an understanding of the changes that occur in motor learning and development over the entire lifespan. Participants will have opportunities to observe and analyze fundamental motor patterns as they are performed in various settings.
Lecture: 3 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.

SES-2340 Analysis of Motor Skills
3 Credits
Introduction to the fundamentals of biomechanics related to human movement and the science of motor skill diagnosis.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.

SES-2350 Exercise for Special Populations
3 Credits
Provides students with an opportunity to develop an in-depth understanding of procedures, concepts, and modifications related to fitness testing and exercise programming for various life stages and chronic diseases. Benefits of exercise and public health implications for each condition will be addressed.
Lecture: 3 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or concurrent enrollment or departmental approval.

SES-2400 Concepts of Sports Coaching
3 Credits
Theories and principles for coaching sports and sport skills. Emphasis on the development of a coaching philosophy, coaching ethics and the impact of contemporary trends and issues on coaching, and skills common to all coaching activities.
Lecture: 3 hours
Prerequisite(s): SES-1040 Teaching Exercise Training Techniques, or departmental approval.
SES-2410 Exercise Testing and Prescription
3 Credits
This course is designed to provide the student with foundational concepts and principles in exercise testing and prescription. Through lecture, lab and practical application, students will learn how to conduct pre-exercise screenings, fitness assessments, interpret results, and design and implement exercise programs for the healthy, adult population.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or concurrent enrollment; or departmental approval.

SES-2420 Advanced Exercise Testing and Prescription
3 Credits
Through lecture, lab and practical application, students will learn the principles and concepts of advanced exercise testing and prescription for the healthy adult population and exercise testing, exercise guidelines and exercise program design for weight management, low back care, balance, the older adult, children, adolescents and other special populations.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-2410 Exercise Testing and Prescription; or departmental approval.

SES-2812 Special Topics: Health and Wellness Coach Certification Prep
3 Credits
Concepts of fitness and wellness coaching including health behavior change theories, client assessment, goal setting, evaluation processes, coaching dialogue, and coaching ethics. Students will learn how to develop a coaching approach. Coaching sessions required in class and out of class. Upon completion of this course students will be eligible to sit for the National Board Health and Wellness Coach Certification.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Departmental Approval

SES-2820 Independent Advanced Study/Research in Sports and Exercise Studies
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

SES-2840 Practicum: Sport and Exercise Studies
2 Credits
Capstone Course: Apply practical skills by working in the field of health, wellness, and fitness through practicum experience on campus or off site experiences. Health, wellness and fitness assessment, program design, program evaluation, and daily operation of a fitness facility. Includes topics relevant to case studies, exercise programming, legal and safety concerns, continuing education and certification opportunities, job search, and resume building. Completion and submission of professional Program Portfolio.
Lecture: 1 hour
Other Required Hours: Practicum: 8 hours a week for 15 weeks; Seminar 1 hour a week. Note: Listed lecture hour reflects contact time for required seminar.
Prerequisite(s): SES-2130 Kinesiology: Fundamentals of Human Movement or concurrent enrollment; and SES-2220 Exercise Prescription and Program Design or concurrent enrollment; or departmental approval.

Surgical Technology (SURT)

SURT-1000 Survey of Surgical Technology
1 Credit
Designed to familiarize students seeking a career in healthcare within the profession of surgical technology. Course provides an overview of history, professional organization, philosophy and practice of surgical technology. Discussion of roles and responsibilities of operating room personnel will also be provided as well as study of asepsis, instrumentation, positioning and draping.
Lecture: 1 hours
Prerequisite(s): MA-1020 Medical Terminology I and departmental approval.

SURT-1300 Introduction to Surgery
5 Credits
Presentation and discussion of development of modern day surgery, organization of operating room department, roles of operating room personnel, health care reform practices, and care of surgical patient. Infection control applicable to operative setting discussed including sterilization of surgical supplies, sterile techniques, and application of sterile techniques in operating room. Discussion of special items used in operating room, general and regional anesthesia, wound healing, sutures and staplers. Legal and ethical aspects of operating room practice introduced.
Lecture: 5 hours
Prerequisite(s): Concurrent enrollment in SURT-130L Surgery Lab, and departmental approval: admission to program.

SURT-130L Surgery Lab
2 Credits
Practice of skills required of the surgical technologist. Patient transportation and transfer skills, operation of the surgical bed, patient positioning, sterile wrapping of supplies and instrumentation, sterile techniques utilized when opening and dispensing sterile supplies and instrumentation, skin preparation, urinary catheterization, surgical scrub, gowning and gloving, gowning and gloving of other team members, back table and mayo stand set-up, basic draping, passing of instrumentation during a procedure and end of case procedures. Assistant circulator skills, such as vitals and operation of equipment, are introduced. Problem solving skills and employability are introduced.
Laboratory: 6 hours
Prerequisite(s): Concurrent enrollment in SURT-1300 Introduction to Surgery, and departmental approval: admission to program.
SURT-1330 General Surgery
5 Credits
Presentation and discussion of general surgery. Includes steps of operative procedure, features of general surgery, hemostasis, operative drains, surgical specimens, layers of abdominal wall, abdominal incisions and laparotomy. Discussion on operative procedures may include hernia procedures of the abdominal region, liver and biliary procedures, pancreas and spleen procedures, gastric and related esophageal procedures, lower gastrointestinal procedures, breast surgery, gynecological and obstetrical procedures and plastics/reconstructive surgery.
Lecture: 5 hours
Prerequisite(s): SURT-1300 Introduction to Surgery, and SURT-130L Surgery Lab, and concurrent enrollment in SURT-1910 Clinical Experience I.

SURT-1700 Sterile Processing Tech I
4 Credits
Covers development and history of a modern sterile processing department, roles and responsibilities of sterile processing technicians, and legal and ethical aspects of sterile processing practice. Review human anatomy and physiology in relation to processing of medical devices and patient care equipment. Discuss basic microbiology, common microbes and diseases found in today's health care environment, and infection control techniques in relation to disease transmission. Demonstrate decontamination techniques and protocols of medical devices and patient care equipment to eliminate the occurrence of a health care acquired infection. Discussion of federal and private organizations affecting daily functions of field of study.
Lecture: 4 hours
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment, and MA-1020 Medical Terminology I, or concurrent enrollment, and MATH-0955 Beginning Algebra, or appropriate score on Math placement test, and concurrent enrollment in SURT-1720 Introduction to Hospital Administration, and departmental approval: admission to Sterile Processing Distribution Program.

SURT-1710 Sterile Processing Tech II
4 Credits
Covers techniques and protocol of processing patient care equipment. Includes the various packaging methods, sterilization methods, sterile storage methods, and appropriate distribution methods currently in use in today's health care environment. Discussion and identification of surgical instruments including techniques for recognizing damage and/or poor working condition to allow technicians to remove for preventative maintenance. Discussion and identification of the various methods of sterilization currently used in health care. Demonstration of appropriate monitoring techniques to achieve required degree of sterile assurance level.
Lecture: 4 hours
Prerequisite(s): SURT-1700 Sterile Processing Tech I, and SURT-1720 Introduction to Hospital Administration, and concurrent enrollment in SURT-1861 Clinical Experience: Sterile Processing, or departmental approval.

SURT-1720 Introduction to Hospital Administration
1 Credit
Presentation and discussion of history, development and current trends in the daily operations of modern hospitals, including hospital governance, administration and management. Review of functions of clinical patient care area's of inpatient care, outpatient care, surgery, emergency services, ancillary diagnostic and rehabilitation services. Review of patient, facility and administrative support services. Discussion of critical interrelated functions of all departments of hospital to insure quality patient care is delivered. Introduction to hospital budgeting, marketing, financing, billing, quality improvement and accreditation. Presentation of case studies to emphasize actual ethical concerns that may be experienced in performance of duties.
Lecture: 1 hour
Prerequisite(s): Concurrent enrollment in SURT-1700 Sterile Processing Tech I, and departmental approval: admission to the Sterile Processing Distribution Program.

SURT-1861 Clinical Experience: Sterile Processing
2 Credits
Supervised clinical experience in the central service/sterile processing department of a hospital or surgical center. Students perform in both first and second scrub roles during operative procedures, increasing in proficiency. Weekly CST Exam reflects contact time for required seminar.
Lecture: 1 hour
Other Required Hours: Practicum: 16 hours per week in hospital setting; Seminar: 1 hour per week.
Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab; and concurrent enrollment in SURT-1330 General Surgery.

SURT-1911 Clinical Experience I
3 Credits
Beginning level scrubbing and instrumentation skills while caring for a surgical patient in operating room at assigned affiliated hospital. Skills performed correlate with skills learned in surgery lab. Includes scrubbing, gowning and gloving, back table and mayo set-ups, surgical draping, instrumentation skills, basic procedural knowledge and employability skills. Students perform primarily in the second scrub role, gradually increasing to the first scrub role. Note: Listed lecture hour reflects contact time for required seminar.
Lecture: 1 hour
Other Required Hours: Practicum: 16 hours per week in hospital setting; Seminar: 1 hour per week.
Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab; and concurrent enrollment in SURT-1330 General Surgery.

SURT-1921 Clinical Experience II
2 Credits
Practical application of previously learned surgical skills at assigned affiliated hospital. Students perform in both first and second scrub roles during operative procedures, increasing in proficiency. Weekly CST Exam review and post-clinical experience discussion.
Lecture: 1 hour
Other Required Hours: 16 hours per week in hospital setting for 8-week summer session; Seminar: 1 hour per week for 8-week summer session; Note: Listed lecture hour reflects contact time for required seminar.
Prerequisite(s): SURT-1300 Introduction to Surgery, SURT-130L Surgery Lab, SURT-1330 General Surgery, and SURT-1911 Clinical Experience I.
SURT-2300 Surgical Specialties
5 Credits
Presentation and discussion of surgical specialty procedures including cardio/thoracic, genitourinary, neurological, ophthalmic, oral/maxillofacial, orthopedic, otorhinolaryngology, peripheral vascular and transplant and trauma surgical procedures.
Lecture: 5 hours
Prerequisite(s): SURT-1921 Clinical Experience II and concurrent enrollment in SURT-2851 Clinical Experience III.

SURT-2851 Clinical Experience III
3 Credits
Practical application of previously learned surgical skills at assigned affiliated hospital. Basic competency of scrub skills relating to general, gynecological and specialty surgical procedures. Students perform primarily in the first scrub role during operative procedures, increasing in proficiency. Weekly Certified Surgical Technologist (CST) Exam review and post-clinical experience discussion. Seminar: 1 hour per week. Note: Listed lecture hour reflects contact time for required seminar.
Lecture: 1 hour
Other Required Hours: Practicum: 16 hours per week in hospital setting; Seminar: 1 hour per week; Note: Listed lecture hour reflects contact time for required seminar.
Prerequisite(s): SURT-1921 Clinical Experience II and concurrent enrollment in SURT-2300 Surgical Specialties.

SURT-2862 Clinical Experience IV
4 Credits
Capstone course in Surgical Technology, with a focus on specialty surgical procedures. Practical application of previously learned surgical skills at assigned affiliated hospital. Students perform primarily in the first scrub role. Weekly CST Exam review and post-clinical experience discussion. All students must register and sit for the Certified Surgical Technology (CST) Examination at the end of the course. Each student is responsible to pay all costs associated with the examination.
Lecture: 2 hours
Other Required Hours: Practicum: 16 hours per week; Seminar: 2 hours per week; Note: Listed lecture hour reflects contact time for required seminar.
Prerequisite(s): SURT-1921 Clinical Experience II and concurrent enrollment in SURT-2300 Surgical Specialties.

Theatre Arts (THEA)

THEA-1010 Theatre Appreciation
3 Credits
The examination of theatre as a performance art by the study of its origins through contemporary times, and how contemporary theatre practitioners approach their crafts. Performance not required.
Lecture: 3 hours
Prerequisite(s): ENG-0980 Language Fundamentals I, or appropriate score on English Placement Test; or departmental approval.
OAN Approved: TMAH.

THEA-1100 Survey and Appreciation of American Musical Theatre
3 Credits
Survey and appreciation of dramatic, musical and staging development of American musical theatre from 18th century through 20th century, including mega-musicals of 1990s.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

THEA-1430 Introduction to Scenery and Stagecrafts
3 Credits
Workshop in technical theatre to include scenery, lighting, costumes, properties and sound by classroom study and laboratory work. Interested students may be assigned to productions. Repeatable. No more than six credits may be applied to elective degree requirements.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OAH028. CTAN Approved: CTPAT001.

THEA-1500 Acting I
3 Credits
Exploration of theory and practice of basic tools of acting: body movement, vocal production, and imagination. Introduction to character analysis, scene study and improvisation.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.
OAN Approved: OAH027.

THEA-1510 Acting II
3 Credits
In-depth exploration of theory and application of basic techniques of acting: actors tools, improvisation, character analysis and scene analysis. Introduction to auditioning. Emphasis on refining imaginative, vocal and physical skills required for creating character.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1500 Acting I, or departmental approval: prior acting experience.

THEA-1520 Improvisation and Performance I
3 Credits
Synthesizes concept and technique through the directed practice of improvisational performance. Utilizes the communal/ensemble exercises provided in Spolin's 'Improvisation for the Theatre', to explore the seven aspects of spontaneity and create narrative improvisations. Also explores concepts of character, behavior in environment, creating the who? what? and where? of dramatic scenes, creating from given circumstances, and will involve themselves with the special problems of improvisation in performance. Course is primarily active and participatory in nature and culminates with a public performance based on this exploration and discovery.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1500 Acting I, or departmental approval: prior acting experience.

THEA-1540 Rehearsal and Performance
2 Credits
Practical experience for students accepted as cast members of College theatre production. May be repeated twice - no more than 4 credits to be applied to elective degree requirements.
Other Required Hours: Concentrated practice: 14 hours per week.
Prerequisite(s): Departmental approval: by audition.
OAN Approved: OAH025.
THEA-1550 Practicum in Technical Theatre
2 Credits
Practical experience in stage work in a department production or department approved special project. Emphasis on backstage assistant, carpentry, painting, design assistant, assistant stage manager, stage manager or assistant technical director. Repeatable. No more than four credits may be applied to elective degree requirements.
Other Required Hours: Concentrated practice: 14 hours per week.
Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, or concurrent enrollment.
OAN Approved: OAH026.

THEA-1600 Acting for the Camera I
3 Credits
Basic studio and on-location techniques, video performance training, and audio broadcast techniques to acquire mass media experience for use in professional settings or for personal advancement.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

THEA-179H Honors Contract in Theatre
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course in Theatre Arts whose instructor agrees to mentor the student in this contract. Departmental approval required.

THEA-1820 Independent Study/Research in Theatre Arts
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

THEA-182H Honors Independent Study/Research in Theatre Arts
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

THEA-2010 Script Analysis
3 Credits
Principles, theories and techniques of play script analysis for actor, director, designer, dramaturg, or playwright. Additional time required outside of class to attend at least two theatre productions over the length of the course.
Lecture: 3 hours
Prerequisite(s): THEA-1010 Theatre Appreciation.
OAN Approved: OAH024.

THEA-2100 Arts Management
3 Credits
Introduction to principles and methods of management of arts and cultural institutions. Detailed study of organizational structures, funding and revenue, facilities scheduling and production, marketing, community relations and legal issues.
Lecture: 3 hours
Prerequisite(s): None.

THEA-2210 History of Theatre and Drama I
3 Credits
Emphasizes the historical and critical study of theatre and drama from its origins to the Renaissance. An overview of the development of the physical theatre, the evolution of dramatic presentations, and representative playwrights.
Lecture: 3 hours
Prerequisite(s): THEA-1010 Theatre Appreciation, or ENG-0990 Language Fundamentals II, or eligibility for ENG-1010 College Composition I.
OAN Approved: TMAH.

THEA-2220 History of Theatre & Drama II
3 Credits
Emphasizes the historical and critical study of theatre and drama from the Renaissance to present-day theatrical conventions. An overview of the development of the physical theatre, the evolution of dramatic presentations, and representative playwrights.
Lecture: 3 hours
Prerequisite(s): THEA-2210 History of Theatre and Drama I, or departmental approval.
OAN Approved: TMAH.

THEA-2400 Playwriting
3 Credits
Preparation and analysis of short scripts for the stage.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I and THEA-1010 Theatre Appreciation or departmental approval.

THEA-2440 Sound for Theatre
3 Credits
This course is cross-listed as RAT-2440. Credit can only be earned once for either course. Introduction to the essentials of theatrical sound. Topics covered include microphone use, microphone placement, amplification, theatrical acoustics, Foley sound, recorded effects, and production methodology.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecraft, and RAT-1300 Introduction to Recording, and RAT-1310 Studio Operations.
THEA-2450 Drafting for Theatre
3 Credits
Drafting techniques for theatre design and technology students. Topics include plans, elevations, sections, detailed drawings and light plots.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, and THEA-1320 Introduction to Stage Costumes.

THEA-2500 Acting III
3 Credits
Advanced exploration and refinement of acting techniques as applied to various approaches to creating character. Refinement of audition technique. Focus on scene study and methods of characterization.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1510 Acting II, or departmental approval: prior acting experience.

THEA-2510 Acting IV
3 Credits
Application of scene analysis skills and methods of characterization to advanced scene styles. Consideration of period demands. Identification of individual approach to acting.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-2500 Acting III, or departmental approval: prior acting experience.

THEA-2520 Improvisation and Performance II
3 Credits
Synthesize concept and technique through the directed practice of long-form improvisational performance. Apply the skills discovered in Improvisation and Performance to the creation of long-form narrative structures. Develop an advanced improvisational ensemble that performs regularly before a public audience. Apply Spolin’s seven aspects of spontaneity to create narrative improvisations from minimal given circumstances. Explore advanced forms of improvisation including musical improvisation, script development from improvisation, subject and incident specific performances and “Harold”. Course is primarily active and participatory in nature and requires participation in numerous public performances based on this exploration.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1520 Improvisation and Performance I.

THEA-2540 Advanced Rehearsal Performance
2 Credits
Advanced practical experience for students involved in a college theatre production as cast members or stage managers. May be repeated twice - no more than 4 credits to be applied to elective degree requirements.
Other Required Hours: Concentrated practice: 14 hours per week
Prerequisite(s): THEA-1540 Rehearsal and Performance.

THEA-2550 Advanced Practicum in Technical Theatre
2 Credits
Advanced practical experience in state work in a department production or department approved special project. Emphasis in management of the following: offstage operation, carpentry, painting or set and lighting design. Title positions can include Assistant Stage Manager or Assistant Technical Director. Repeatable. No more than six credits may be applied to elective degree requirements.
Other Required Hours: Concentrated practice: 14 hours per week.
Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts.

THEA-2600 Acting for the Camera II
3 Credits
Video performance training leading to preparation of sample tapes, audition procedures and conduct, financial aspects of local and national market, director for camera, interaction and shot composition.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): THEA-1600 Acting for the Camera I, or departmental approval: prior experience.

THEA-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Theatre Arts complements and exceeds requirements and expected outcomes for an existing Theatre Arts 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).
Lecture: 1 hour
Prerequisite(s): Must be taken concurrently with a 2000-level course in Theatre Arts, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

THEA-2820 Independent Advanced Study/Research in Theatre Arts
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

THEA-282H Advanced Honors Independent Study/Research in Theatre Arts
1-3 Credits
Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).

THEA-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): See campus CO-OP Advisor for the Cooperative Education Program application.
Urban Studies (UST)

UST-1010 Introduction to Urban Studies
3 Credits
Introduction to the study of cities and urban areas. Interdisciplinary examination of the development and structure of cities and the issues and challenges faced by urban areas.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

UST-1020 Urban Geography
3 Credits
Geographical study of cities and their demographics. Emphasizes area aspects of urban centers. Arrangements of cities and their internal patterns, including human behavior and impact of natural resources.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

UST-1120 History of Cleveland
3 Credits
Development of Cleveland from New England village to metropolitan area. Role of economic and technical change, immigration, reform, world war, demographics, labor unions, transportation and political leadership examined. Rise of suburban areas in post World War II, decline of central city and prospects for revival. Explains how each major era of city shaped the present.
Lecture: 3 hours
Prerequisite(s): None.

UST-179H Honors Contract in Urban Studies
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the college (includes 179H and 279H).
Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

UST-1820 Independent Study/Research in Urban Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

UST-182H Honors Independent Study/Research in Urban Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

UST-2020 Urban Cultures
3 Credits
Examination of cultural diversity within urban populations. Special emphasis on interaction of groups and value systems.
Lecture: 3 hours
Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or UST-1010 Introduction to Urban Studies.
OAN Approved: TMSBS.

UST-2070 Urban Politics
3 Credits
Analysis of the political process and the impact of public policies on urban problems, structures, and political behavior in American cities. Focus on central cities, suburbs, and metropolitan areas. Emphasis on efforts to make cities function more efficiently and to improve quality of life for inhabitants.
Lecture: 3 hours
Prerequisite(s): POL-1010 American National Government, or UST-1010 Introduction to Urban Studies.
OAN Approved: TMSBS.

UST-2640 American Urban History
3 Credits
Comparative growth of American cities from towns to megalopolis. Emphasis on the spatial expansion to the development of urban economy, historical functioning of political system and population changes. Includes urban/suburban and majority/minority issues.
Lecture: 3 hours
Prerequisite(s): UST-1010 Introduction to Urban Studies, or HIST-1520 United States History Since 1877, or HIST-1720 African-American History 1877 To Present, or departmental approval.
OAN Approved: TMSBS.

UST-2820 Independent Advanced Study/Research in Urban Studies
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
Electives

VT-282H Honors Independent Advanced Study/Research in Urban Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

Veterinary Technology (VT)

VT-1120 Introduction to Veterinary Technology
2 Credits
Introduction to the profession of veterinary technology. Includes terminology with emphasis on word components, spelling, pronunciation, word analysis, common colloquialisms and abbreviations. Introduction to legal, moral, ethical status of animals in modern society. Discussion of profession, its legal ramifications and career paths open to graduate veterinary technicians. Introduction to common breeds and types of domestic animal species and related medical issues. Introduction to animal euthanasia and veterinary technician’s role in that procedure.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval.

VT-1325 Veterinary Office Applications
2 Credits
Overview of veterinary practice management including veterinary medical record keeping, interoffice communications and public relations techniques. Automated veterinary office processing and record-keeping. Computer hardware and software commonly found in veterinary practices described along with office procedures and work flow. Special emphasis on veterinary technician’s role in these processes.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval.

VT-1401 Veterinary Science I
4 Credits
Recognition of physical and behavioral characteristics of commonly encountered dog and cat breeds. Introduction to basic companion animal and laboratory animal behavior, husbandry and nutrition. Laboratory focuses on non-invasive clinical management techniques including physical examination, grooming and other in-office procedures.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): Departmental approval. admission to program.

VT-1410 Veterinary Science II
3 Credits
Fundamentals of physical and behavioral characteristics of horses, cattle, sheep, goats, pigs, poultry and camellids. Introduces basic husbandry and nutrition for these species. Laboratory focuses on restraint, handling and performance of common veterinary procedures used as part of large animal management and/or treatment of common clinical conditions. Field trips required for laboratory portion of course.
Lecture: 2.5 hours. Laboratory: 1 hour
Prerequisite(s): VT-1401 Veterinary Science I, BIO-1420 Anatomy and Physiology of Domestic Animals II, or concurrent enrollment.

VT-1521 Veterinary Pathology I
2 Credits
Study of identification techniques, nomenclature, life cycles, epidemiology and control of internal and external parasites of small animals, horses and ruminants.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): BIO-1410 Anatomy and Physiology of Domestic Animals I or concurrent enrollment; and departmental approval: admission to program.

VT-1530 Veterinary Pathology II
2 Credits
Study and application of microbiologic techniques commonly performed in veterinary practices. Includes survey of microorganisms and associated disease conditions relevant to veterinary medicine and procedures to collect, culture and identify these microorganisms.
Lecture: 1 hour. Laboratory: 6 hours
Prerequisite(s): VT-1521 Veterinary Pathology I.

VT-1600 Veterinary Surgical Nursing and Assisting
3 Credits
Fundamentals of routine veterinary surgery including instrumentation, patient preparation, aseptic technique, fluid therapy, wound healing, specialized procedures and general nursing care. Fundamentals of electrocardiography including operation of electrocardiograph, origin of the ECG tracing and recognition of common cardiac arrhythmias.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): VT-1401 Veterinary Science I, and BIO-1420 Anatomy and Physiology of Domestic Animals II or concurrent enrollment.

VT-1700 Veterinary Diagnostic Imaging
3 Credits
Introduction to radiography, ultrasonography, CT, MRI, and nuclear scintigraphy imaging modalities. Preparation, use and maintenance of radiography and ultrasonography equipment. Acquisition and processing of digital and analog diagnostic images.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VT-1401 Veterinary Science I, and BIO-1420 Anatomy and Physiology of Domestic Animals II or concurrent enrollment.

VT-2200 Dentistry for Veterinary Technicians
1 Credit
Fundamentals of veterinary dentistry. Students learn how to perform oral cavity assessments, routine dental cleaning, dental charting, and client education, and assist with advanced dental procedures.
Lecture: 1 hours
Prerequisite(s): VT-1600 Veterinary Surgical Nursing and Assisting, and BIO-1420 Anatomy and Physiology of Domestic Animals II.

VT-2300 Pharmacology for Veterinary Technicians
2 Credits
Introduction to veterinary pharmacology including common drug terminology, classifications and usages of drugs, dosage calculations, methods of drug administration, side effects and contraindications.
Lecture: 2 hours
Prerequisite(s): VT-1401 Veterinary Science I, and BIO-1420 Anatomy and Physiology of Domestic Animals II, and VT-1120 Introduction to Veterinary Technology.
VT-2402 Veterinary Pathology III
2 Credits
Veterinary hematology and chemistry laboratory procedures including complete blood counts and clinical chemistries performed commonly in veterinary practices.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): BIO-1420 Anatomy and Physiology of Domestic Animals II, and VT-1521 Veterinary Pathology I.

VT-2412 Veterinary Pathology IV
2 Credits
Veterinary medical laboratory procedures performed commonly in veterinary practices including urinalysis, vaginal cytology, ear cytology, cytology of tissues and fluids, bone marrow evaluation, serology, coagulation tests and necropsy.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): VT-2402 Veterinary Pathology III.

VT-2520 Animal Health and Disease
3 Credits
Physiological systems approach to the most frequently encountered diseases and clinical problems of companion animals, horses and production animals, including disease names, definition and history, animals at risk, causes and signs, diagnosis, treatment and prevention.  
Lecture: 3 hours  
Prerequisite(s): VT-2300 Pharmacology for Veterinary Technicians, and departmental approval: admission to the program.

VT-2610 Veterinary Anesthesia, Analgesia, & Dental Techniques
3 Credits
Fundamentals of veterinary anesthesia and analgesia. Students learn how to induce, maintain, and monitor anesthesia, administer and assess response to analgesics, and perform routine veterinary dental cleaning procedures.  
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): VT-1600 Veterinary Surgical Nursing and Assisting, VT-2300 Pharmacology for Veterinary Technicians, and VT-2200 Dentistry for Veterinary Technicians.

VT-2650 Veterinary Emergency and Critical Care
1 Credit
Fundamentals of veterinary emergency and critical care, including client communication, triage, first aid; patient transport, emergency techniques; life support measures, care of recumbent or otherwise compromised patients; wound care and nursing considerations; CPR and CPRC. Also integrated review of fluid therapy and patient monitoring techniques.  
Lecture: 1 hour  
Prerequisite(s): VT-2610 Veterinary Anesthesia, Analgesia, and Dental Techniques.

VT-2700 Avian and Exotic Animal Medicine
2 Credits
Introduction to avian and exotic animal husbandry, physical examination, clinical procedures and common clinical conditions. Field trips may be included.  
Lecture: 2 hours  
Prerequisite(s): VT-2610 Veterinary Anesthesia, Analgesia, and Dental Techniques, and VT-2412 Veterinary Pathology IV.

VT-2820 Independent Advanced Study/Research in Veterinary Technology
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.  
Lecture: 1-3 hours  
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

VT-2851 Veterinary Practicum and Seminar I
1 Credit
Includes practicum and on-campus seminar. In practicum, students observe and assist with common procedures in clinical settings. Clinical settings include small animal practice, animal population control facility, laboratory animal facility, equine practice, food animal practice/facility and exotic animal practice/facility. In seminar, students discuss individual clinical situations occurring during practicum experience, and study technicians role in euthanasia of an animal including methodology, mental preparation and understanding of the grieving owner.  
Lecture: .5 hours  
Other Required Hours: Practicum: 3.5 hours/week. Seminar: .5 hour per week.  
Prerequisite(s): VT-1410 Veterinary Science II.

VT-2860 Veterinary Practicum and Seminar II
2 Credits
Includes practicum and on-campus seminar. In practicum, students observe and assist with common procedures in clinical settings. Clinical settings include small animal practice, animal population control facility, laboratory animal facility, equine practice, food animal practice/facility, and exotic animal practice/facility. In seminar, students discuss individual clinical situations occurring during the veterinary practicum experience, study the technician's role in pediatrics and first aid, and prepare to search for employment.  
Lecture: 1 hour  
Other Required Hours: Practicum: 7 hours per week. Seminar: 1 hour per week.  
Prerequisite(s): VT-2851 Veterinary Practicum and Seminar I.

VT-2940 Veterinary Field Experience
2 Credits
Capstone course in Veterinary Technology. Clinical experience involving practice of techniques commonly used in veterinary medicine. Students assigned to two different types of veterinary facilities. Site options may include small animal practices, animal emergency clinics, referral practices, equine practices, mixed practices, food animal practices, laboratory animal facilities and the Cleveland Metroparks Zoo.  
Other Required Hours: Field experience: 24 hrs/week.  
Prerequisite(s): VT-2860 Veterinary Practicum and Seminar II, and VT-2610 Veterinary Anesthesia, Analgesia, & Dental Techniques.
Visual Communication & Design (VC&D)

VC&D-1000 Visual Communication Foundation
3 Credits
This course provides the foundation for all Visual Communication programs and career paths. Topics include exploring the elements and principles of design, layout, color theory, and visual storytelling. Visual Communication career options are examined, as well as industry standard software, workflow and best practices.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): None.

VC&D-1061 History of Graphic Design
3 Credits
Survey of graphic design and the world events that have influenced visual communication from the invention of writing to the computer age and new media. Explores the cultural influences and technical innovations in graphic design movements, subsequent counter-movements and their implications. The influence of world events and the emergence of trends in graphic design will be presented following an historical timeline. The impression of the past on subsequent graphic design trends will be noted.
Lecture: 3 hours
Prerequisite(s): None.

VC&D-1201 Typography I
3 Credits
Development, terminology, letterform, classification, selection and specification of typefaces. Emphasis on aesthetic and communicative aspects of typography. Introduction to techniques used to design and effectively communicate with typography.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation, or concurrent enrollment.

VC&D-1431 Vector Graphics
3 Credits
Technical and aesthetic fundamentals in the creation of vector graphics for print, interactive, broadcast and other media utilizing industry standard vector graphics and design applications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation or concurrent enrollment; or VCPH-1450 Digital Imaging I or concurrent enrollment.

VC&D-1820 Independent Study/Research in Visual Communication and Design
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

VC&D-1940 Field Experience I
1-3 Credits
Field experience is planned paid or unpaid work activity, which relates to individual students occupational objectives. With permission of faculty advisor, field experience replaces elective courses in students associate degree program. Experience coordinated by faculty member who assists student in planning experience, visits site of experience for conference with student and his/her supervisor at least once during semester, and assigns course grade to student after appropriate consultation with employer/supervisor.
Other Required Hours: Field Experience: 12-36 hours per week.
Prerequisite(s): Departmental approval.

VC&D-2301 Graphic Design and Illustration
3 Credits
Exploration of intermediate to advanced tools and techniques used in illustrating content for integrated media. Projects may include advanced content creation for print, interactive, broadcast and other media utilizing industry standard 2D graphics and design applications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1431 Vector Graphics and VCPH-1450 Digital Imaging I; or departmental approval.

VC&D-2530 Professional Practice in Visual Communication and Design
3 Credits
Exploration of business and marketing practices necessary for successful career in visual communication and design. Emphasis on financial, legal, organizational, promotional, interpersonal and ethical skills as practiced in this diverse industry.
Lecture: 3 hours
Prerequisite(s): Departmental approval: sophomore level status or industry experience.

VC&D-2541 Individual Projects
3 Credits
Individual projects in visual communication and design in areas relevant to current VC&D industry. Progress and grading determined on individual basis according to criteria mutually agreed upon between student and instructor. May be repeated for up to six credits.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VC&D-1431 Vector Graphics; or VCPH-1450 Digital Imaging; or departmental approval.

VC&D-2820 Independent Advanced Study/Research in Visual Communication and Design
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

VC&D-2825 Independent Study Laboratory
1-3 Credits
Independent two-hour lab per credit. Directed Individual Study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Laboratory: 2.6 hours
Prerequisite(s): Departmental approval and instructor approval, and eligibility for ENG-1010 College Composition.
VC&D-282T Independent Study Laboratory
1-3 Credits
Independent three-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Laboratory: 3-9 hours
Prerequisite(s): Departmental approval and instructor approval, and eligibility for ENG-1010 College Composition I.

VC&D-2830 Cooperative Field Experience
1-3 Credits
Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.
Other Required Hours: 180 clock hours of approved work per credit hour.
Prerequisite(s): See campus CO-OP Advisor for the Cooperative Education Program application.

VC&D-2940 Field Experience II
1-3 Credits
Field experience is planned paid or unpaid work activity, which relates to individual student’s occupational objectives. With permission of faculty advisor, field experiences replace elective courses in student’s associate degree program. Experience coordinated by faculty member who assists student in planning experience, visits site of experience for conference with student and his/her supervisor at least once during semester, and assigns course grade to student after appropriate consultation with employer/supervisor. May be repeated for a maximum of six credits.
Other Required Hours: Field experience: 12 to 36 hours per week.
Prerequisite(s): Departmental approval.

VC&D-2991 Portfolio Preparation
3 Credits
Capstone Course. Prepares students to enter the visual communication profession, including preparing and presenting a well-crafted portfolio, building and implementing a self-promotional brand, and understanding the creative, legal and ethical aspects of the industry. Emphasis on refining work per chosen specialization, presentation methods, professional practices, written and verbal communication.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment; or VCIL-2141 Illustration Techniques or concurrent enrollment; or VCIL-2341 Illustration for Story or concurrent enrollment; or VCIM-2271 2D Animation or concurrent enrollment; or VCIM-2280 Game Design Studio or concurrent enrollment; or VCIM-2280 Web Publishing III; Media Rich Websites or concurrent enrollment.

Visual Communication and Design (Advertising Design) (VCAD)

VCAD-2621 Advertising Studio I
3 Credits
Hands-on directed individualized project-based course specialized for advertising design majors. Advertising design and marketing project proposals to be selected, approved and arranged collaboratively between instructor and student. Design creativity, marketing and visual communication skills stressed. Emphasis on further developing advertising and marketing skills and working one-on-one with instructor providing design direction to attain conceptual and technical skills to bring final designs to successful completion.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VC&D-2231 Publication Design or VC&D-2301 Graphic Design and Illustration.

VCAD-2820 Independent Advanced Study/Research in Advertising Design
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Visual Communication and Design (Graphic Design) (VCGD)

VCGD-1500 Advertising and Design
3 Credits
Fundamentals of advertising and design for print and other media. Examines design process and appropriate use of research. Examines and evaluates layout and delivery mode, evolution of presentation and critical analysis of designer/client relations. Includes material usage, technical and hand skill development, and application of presentation techniques to real-world problem solving.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging, or concurrent enrollment; and VCGD-1431 Vector Graphics, or concurrent enrollment.

VCGD-2232 Typography II
3 Credits
Advanced typography including compilation and production of information for use by an intended audience. Exploration of practical and production consideration with emphasis on various multiple page publication formats: book, brochure, magazine, journal, newsletter, newspaper and e-book/e-pub.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1201 Typography I

VCGD-2331 Brand Identity Design
3 Credits
Covers comprehensive corporate graphics emphasizing design process in creating corporate and brand identity. Visual and non-visual aspects of corporate graphics and their application are examined.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCGD-1500 Advertising and Design
VCGD-2400 Information Graphic Design
3 Credits
Information graphic design including research, planning and data visualization. Emphasis on visual hierarchy, grid usage, photos and graphics to effectively communicate information. Exploration of practical and production considerations involved in information graphic design. Considerations for mode of delivery from print, digital, interactive and outdoor way finding applications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration, or concurrent enrollment.

VCIL-1640 3D Design
3 Credits
Technical and aesthetic fundamentals of 3D Design. Use of industry standard software to develop 3D graphics for screen and print applications. Projects may include 3D design and visualization for information graphics, product visualization, prototyping, logo design and environmental visualization. Various design techniques including 3D parametric modeling, polygonal modeling and Subsurface modeling solutions. Introduces basic modeling, staging, lighting, texture and shader strategies to realize 3D concepts.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundations or concurrent enrollment, or departmental approval.

VCIL-2040 3D Motion
3 Credits
Technical and aesthetic fundamentals of 3D motion design and 3D animation. Use of industry standard software to develop 3D animation for broadcast and Internet audience. Projects may include 3 Dimensional motion graphics and animation for information graphics, product visualization, instructional design and environmental visualization. Various topics including 3D modeling, key framing, timeline and camera animation. Introduces basic animation strategies to fulfill 3D motion graphics and visualization concepts.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VCIL-1640 3D Design or concurrent enrollment; or departmental approval.

VCIL-2142 Illustration II
3 Credits
Advanced graphic design projects using industry software and standards. Course builds upon sequential graphic design courses to explore complex solutions to visual communication and design problems. Emphasis on individual and team projects applied to various media based on market needs.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment.

VCIL-2241 Advanced Illustration
3 Credits
Various tools, materials and techniques used with advanced illustration. Emphasis placed on illustration for commentary, narrative, persuasion, visualization and instruction. Focus on creating illustration for audience and client requirements.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2142 Illustration II or departmental approval.

VCIL-2341 Illustration for Story
3 Credits
Technical and aesthetic fundamentals of sequential illustration and visual narrative. Use of industry standard software to design, develop, publish and present illustration for narrative application. Introduces basic strategies of illustration for concept art, comics, books, graphic novels, games, storyboards, and other work driven by narrative, story or sequential imagery.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-1142 Illustration I, or ART-1050 Drawing 1, or departmental approval.

VCIL-1142 Illustration I
3 Credits
Analog and digital rendering for visual communication and design applications. Emphasis on formal qualities of two dimensional illustration techniques used to render images.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation or concurrent enrollment.

Visual Communication and Design (Illustration) (VCIL)

VCIL-2142 Illustration II or departmental approval.

VCIL-2241 Advanced Illustration
3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1+3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

VCIL-2341 Illustration for Story
3 Credits
Technical and aesthetic fundamentals of sequential illustration and visual narrative. Use of industry standard software to design, develop, publish and present illustration for narrative application. Introduces basic strategies of illustration for concept art, comics, books, graphic novels, games, storyboards, and other work driven by narrative, story or sequential imagery.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-1142 Illustration I, or ART-1050 Drawing 1, or departmental approval.

VCIL-1640 3D Design
3 Credits
Technical and aesthetic fundamentals of 3D Design. Use of industry standard software to develop 3D graphics for screen and print applications. Projects may include 3D design and visualization for information graphics, product visualization, prototyping, logo design and environmental visualization. Various design techniques including 3D parametric modeling, polygonal modeling and Subsurface modeling solutions. Introduces basic modeling, staging, lighting, texture and shader strategies to realize 3D concepts.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundations or concurrent enrollment, or departmental approval.

VCIL-2040 3D Motion
3 Credits
Technical and aesthetic fundamentals of 3D motion design and 3D animation. Use of industry standard software to develop 3D animation for broadcast and Internet audience. Projects may include 3 Dimensional motion graphics and animation for information graphics, product visualization, instructional design and environmental visualization. Various topics including 3D modeling, key framing, timeline and camera animation. Introduces basic animation strategies to fulfill 3D motion graphics and visualization concepts.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VCIL-1640 3D Design or concurrent enrollment; or departmental approval.

VCIL-2142 Illustration II
3 Credits
Advanced graphic design projects using industry software and standards. Course builds upon sequential graphic design courses to explore complex solutions to visual communication and design problems. Emphasis on individual and team projects applied to various media based on market needs.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment.

VCIL-2241 Advanced Illustration
3 Credits
Various tools, materials and techniques used with advanced illustration. Emphasis placed on illustration for commentary, narrative, persuasion, visualization and instruction. Focus on creating illustration for audience and client requirements.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2142 Illustration II or departmental approval.

VCIL-2341 Illustration for Story
3 Credits
Technical and aesthetic fundamentals of sequential illustration and visual narrative. Use of industry standard software to design, develop, publish and present illustration for narrative application. Introduces basic strategies of illustration for concept art, comics, books, graphic novels, games, storyboards, and other work driven by narrative, story or sequential imagery.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-1142 Illustration I, or ART-1050 Drawing 1, or departmental approval.

VCIL-1142 Illustration I
3 Credits
Analog and digital rendering for visual communication and design applications. Emphasis on formal qualities of two dimensional illustration techniques used to render images.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation or concurrent enrollment.
VCIL-2440 3D Simulation
3 Credits
Advanced technical and aesthetic issues concerning 3D modeling, 3D motion graphics and 3D animation using industry standard software. Course emphasizes static and dynamic animation strategies utilizing joints, inverse kinematics, dynamics, constraints, set driven keys, rigid body dynamics, effectors and node based animations to create product, instructional, character or environmental 3D simulations and animations. Applied projects for use in various visualization disciplines.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2040 3D Motion; or departmental approval.

VCIL-2540 3D Studio
3 Credits
Advanced 3D modeling, 3D motion graphics and 3D animation using industry standard software. Course builds upon sequential 3D courses to provide advanced platform for custom 3D design, illustration, visualization, simulation or animation projects. Develop projects to satisfy audience/client, target market and production needs.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2040 3D Motion or concurrent enrollment, or VCIM-1400 Game Design II, or departmental approval.

VCIL-2641 Illustration Studio
3 Credits
Hands-on, directed, individualized, project-based course, specialized for illustration majors. Illustration proposals and projects to be selected, approved and arranged collaboratively between instructor and student. Emphasis on creating a strong illustration portfolio for various audiences including, design, advertising, visualization, publishing and entertainment industries.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2142 Illustration II or concurrent enrollment.

VCIL-2820 Independent Advanced Study/Research in Illustration
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

Visual Communication and Design (Photography) (VCPH)

VCPH-1150 History of Photography
3 Credits
Survey of history of world photography from 1839 to present. Technical and aesthetic evolution of photography and its changing role in society.
Lecture: 3 hours
Prerequisite(s): None.

VCPH-1261 Photography I
3 Credits
Explore digital photography fundamentals and maximize the capabilities of your digital camera shooting in available light. Conceptual issues and stylistic characteristics of several photographic genres are discussed. Assignments allow for exploration of photographic traditions and increase understanding of the potential of digital technology. Critical thinking skills are strengthened to enhance the photographic narratives and concepts. Students must have their own DSLR camera with manual controls including Aperture, Shutter Speed, ISO settings and RAW file format capability. NOTE: Specified printing paper, portfolio/box and Mac/PC external hard-drive required. Paper, portfolio/box and limited selection of cameras available at Tri-C bookstores.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): None.
OAN Approved: OAH002.

VCPH-1450 Digital Imaging I
3 Credits
Introduction to technical and aesthetic fundamentals of digital image manipulation using the most current computer software and hardware systems for the input, modification and output of digital photographs.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1000 Visual Communication Foundation or concurrent enrollment; or MARS-1180 Introduction to Media Arts and Filmmaking, or concurrent enrollment.

VCPH-179H Honors Contract in Photography
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course, the Honors Contract adds an honors experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six honors contracts (six credit hours) may be taken at the College (includes 179H and 279H).
Lecture: 1 hour
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

VCPH-1820 Independent Study/Research in Photography
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
VCPH-2050 Commercial Studio Techniques I
3 Credits
Introduction to the use of strobe lighting and direct digital capture in commercial studio and location photography environments. Topics include an introduction to portraiture, product, food, fashion, and advertising photography. Efficient workflow in the creation and post-production of appropriately formatted digital files. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College specified digital printing paper and portfolio box also required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, or concurrent enrollment; and VCPH-2260 Photography II, or concurrent enrollment; or departmental approval: submission of portfolio of photographs.

VCPH-2160 Digital Video for Photographers
3 Credits
Introduction to digital video capture, editing and archiving techniques. Advanced critical thinking. Students must have their own DSLR camera with adjustable settings and the ability to capture in Camera RAW format and large capacity (1T min.) external storage drive.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, and VCPH-2260 Photography II.

VCPH-2260 Photography II
3 Credits
Students build on their skill base and create images that have a conceptual basis as opposed to being strictly documentary in nature. Advanced color and black & white file conversion and outputting. Critical thinking used in group work discussions. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College specified digital printing paper and portfolio box also required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1261 Photography I.

VCPH-2450 Digital Imaging II
3 Credits
Advanced visual problem solving in digital imaging. Refined techniques for compositing and digital illustration in commercial based environments. Photographic images and components supplied and created by the student form the foundation on which projects are built for print, multimedia and Web applications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, or departmental approval: prior digital imaging experience.

VCPH-2550 Commercial Studio Techniques II
3 Credits
Advanced studio and documentary photographic techniques. Advanced critical thinking and responsive writing. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College specified digital printing paper and portfolio box also required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-2050 Commercial Studio Techniques I, and VCPH-1450 Digital Imaging I, or departmental approval: submission of portfolio of photographs.

VCPH-2660 Photography III
3 Credits
Advanced studio and documentary photographic techniques. Concept development for photo illustration. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College specified digital printing paper and portfolio box also required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, and VCPH-2260 Photography II; or departmental approval: submission of portfolio of photographs.

VCPH-2760 Editorial Photography
3 Credits
Introduction to the technical, aesthetic, business and ethical issues in a range of photographic practices including editorial, wedding, event, and photojournalistic settings. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College specified digital printing paper and portfolio box also required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, and VCPH-2260 Photography II; or departmental approval: submission of portfolio of photographs.
OAN Approved: OCM011.

VCPH-2820 Independent Advanced Study/Research in Photography
1-3 Credits
Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
VCIM-1200 Game Design I: Introduction to Game Design
3 Credits
Foundation of game design with an emphasis on concept, planning and creation of game prototypes. Topics include history or games from tabletop to tablet, markets, mechanics, prototyping, play testing, and analysis. Students will explore theme, genre, rules, tools, goals, and peripheral concepts of game design.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-2200 Game Design I: Introduction to Game Design, or concurrent enrollment; or departmental approval.

VCIM-1400 Game Design II: Game Engines
3 Credits
Applied technical and aesthetic fundamentals of 2D and 3D game design using industry standard engines. Includes survey of the game design industry. Emphasis on design and interaction of 2D and 3D assets to be used in entertainment games.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1200 Game Design I: Introduction to Game Design, or concurrent enrollment; and VCIM-1640 3D Design, or concurrent enrollment; or departmental approval.

VCIM-1570 Web Publishing I: HTML
3 Credits
Foundational web design, planning and construction with emphasis on web standards, usability and accessibility. Students construct web pages in HTML and CSS using basic text-editing software. Topics include analysis of how and why a website succeeds or fails, aesthetics and visual design for web, planning, creation, uploading and registration of sites, troubleshooting, search engine optimization and basic marketing strategies.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1000 Visual Communication Foundations, or concurrent enrollment.

VCIM-2271 2D Animation
3 Credits
Introduction to 2D animation, including the history and principles of animation as well as a hands-on technical and aesthetic exploration of the media. A variety of digital and manual techniques from character animation to motion graphics are covered using industry standard tools. Direct applications for web, game design, illustration, graphic design, photography and art are examined. Planning and storytelling via the integration of imagery, text, and sound are emphasized. May be repeated for up to 6 credits; only 3 credits may be applied to degree requirements.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): VCIM-1000 Visual Communication Foundation or ART-1081 2D Design and Color or departmental approval: comparable skills.
VCIM-2281 Web Publishing III: JavaScript
3 Credits
Provides an introduction and solid foundation in JavaScript, including syntax, conditionals, functions, manipulating the DOM, and event handling. Working commonly used JavaScript libraries are also covered. Prior scripting or programming experience is welcome but not required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1570 Web Publishing I: HTML, or IT-1150 Introduction to Web Programming.

VCIM-2291 Web Publishing IV: Data-Driven Sites
3 Credits
Learn to create data-driven, dynamic websites. Combines an overview of programming terms and concepts with practical examples.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1570 Web Publishing I: HTML or VCIM-1200 Game Design I: Introduction to Game Design.

VCIM-2371 Interactive Media I
3 Credits
Create a variety of interactive projects. Tell stories incorporating photos, video, sound, music, narration, typography, illustration and animation. Structure, communication, scripting, sequencing and troubleshooting emphasized.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1570 Web Publishing I: HTML or VCIM-1200 Game Design I: Introduction to Game Design.

VCIM-2380 Interactive Media II: App Design
3 Credits
Introduction to app design. Explores current and emerging interactive technologies. The class covers app design from project inception to functional prototypes. No app development or coding is covered.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-2280 Web Publishing III: Media Rich Websites, or VCIM-2371 Interactive Media I

VCIM-2401 Game Design IV-Game Publishing
3 Credits
Develop and refine a body of work focusing on specific role(s) in the game design industry. Develop and promote assets, projects, portfolio, demo reel, blog and game presentation.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): VCIM-2200 Game Design III: Game Design Studio or concurrent enrollment.

VCIM-2470 Virtual Reality Imaging
2 Credits
Technical and aesthetic concepts of virtual reality photography. Use of computer hardware and software for creating virtual reality images. Images used for interactive onscreen presentations or output as large scale panoramic photographic prints.
Lecture: 2 hours
Prerequisite(s): VCPH-1450 Digital Imaging I, and VC&D 1015 Digital Design Basics, or departmental approval.

VCIM-2571 Interactive Media Studio
3 Credits
Course offers broad possibilities for the conception and creation of advanced interactive projects. Students are encouraged to explore concepts and techniques beyond the parameters of previous coursework. Individual students or teams work with the instructor to set the criteria, research, and ultimately complete the project. Repeatable: students may pursue different projects for up to six credits.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): VCIM-1970 Midpoint Portfolio Review or VCIM-2200 Game Design III: Game Design Studio; or departmental approval.

VCIM-2700 User Experience Design
3 Credits
Introduction to user experience design. Includes practice with a variety of user research methods and applying those research results to interactive media projects.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VC&D-1431 Vector Graphics and VCPH-1450 Digital Imaging I.

VCIM-2820 Independent Advanced Study/Research in Interactive Media
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

VCIM-2940 Field Experience
3 Credits
Planned work activity, paid or unpaid, in the field of Web or Interactive Media. Coordinated by faculty member and employer. Experience should reinforce classroom/lab skills.
Other Required Hours: Field Experience: 36 hours per week, working in the field.
Prerequisite(s): VCIM-2380 Interactive Media II, or concurrent enrollment; or VCIM-2290 Web Publishing IV: Data Driven Sites, or concurrent enrollment.

Women's Studies (WST)

WST-1510 Introduction to Women's Studies
3 Credits
Introduction to field of womens studies, which transcends traditional disciplinary boundaries. Analysis of genders role in shaping human societies of past and present: their history and experiences, their expression through arts and literature, philosophy of feminism, and comparative conditions of women in diverse cultures.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

WST-1520 Women's Films
3 Credits
Introduction to genre of womens films through study of classic and contemporary depictions. Use of film analysis in theme, character, plot, dramatic conflict, photography, sound, light, editing and acting.
Lecture: 3 hours
Prerequisite(s): None.
WST-179H Honors Contract: Women's Study
1 Credit
Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course, the Honors Contract adds an honors experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credit hours) may be taken at the College [includes 179H and 279H].

Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

WST-1820 Independent Study/Research in Women's Studies
1-3 Credits
Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval, and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.

WST-182H Honors Independent Study/Research in Women's Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

WST-200H Honors Women and Reform
3 Credits
Analysis of the reform roles of women in American history from colonial times to the present as individuals and as organized groups; special focus on social movements and institutionalized reforms.

Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, or ENG 101H Honors College Composition I, or WST 1510 Introduction to Women's Studies.

WST-2010 Women in the World
3 Credits
Study of the role of gender in shaping comparative cultural experiences in the world; analysis of theoretical basis of gender, and comparing status of women in work, politics, and other social institutions.

Lecture: 3 hours
Prerequisite(s): WST-1510 Introduction to Women's Studies or ENG-1010 College Composition I, or ENG-101H Honors College Composition I. OAN Approved: TMSBS.

WST-2020 Women, Science and Technology
3 Credits
This course is cross-listed as HIST-2020. Credit can only be earned once for either course. Study of gendered relationships in scientific theory, organization and dissemination of scientific expertise, technological development and the impact of these on health care, medicine, business, manufacturing, cultural norms and women's experience.

Lecture: 3 hours
Prerequisite(s): WST-1510 Introduction to Women's Studies; or ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

WST-2030 Women and Art
3 Credits
Study of the role of gender in shaping comparative cultural experiences in the world; analysis of theoretical basis of gender; and comparing status of women in work, politics, and other social institutions.

Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I, or WST-1510 Introduction to Women's Studies.

WST-2120 Women and Politics
3 Credits
This course is cross-listed as POL-2120. Credit can only be earned once for either course. This course examines women's political life in the United States. Women's involvement in all aspects of the political process will be addressed. Substantive areas include women and democracy, their political participation, and role in governing institutions. The course also includes discussion on the struggle for equal rights and issues of public policy.

Lecture: 3 hours
Prerequisite(s): POL-1010 American National Government, or HIST-1020 History of Civilization II, or HIST-1520 United States History Since 1877.

WST-279H Sophomore Honors Contract
1 Credit
Sophomore Honors Contract in Women's Studies complements and exceeds requirements and expected outcomes for an existing Women's Studies 2000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).

Lecture: 1 hours
Prerequisite(s): Must be taken concurrently with a 2000-level course in Women's Studies, whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

WST-2820 Independent Advanced Study/Research in Women's Studies
1-3 Credits
Directed Individual advanced study. Study/Research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
WST-282H Honors Independent Advanced Study/Research in Women’s Studies
1-3 Credits
Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.
Lecture: 1-3 hours
Prerequisite(s): Departmental approval and instructor approval, and ENG-0990 Language Fundamentals II or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

WST-2850 Practicum-Women’s Studies
3 Credits
Practicum includes weekly seminar plus placement in non-profit or profit organization supportive of women and family interests, mentorship relationship with a leader in business, government and social service, or employment in an approved facility. Note: Course may not transfer.
Lecture: 2 hours
Other Required Hours: Practicum: 7 hours per week. Seminar: 2 hours per week.
Prerequisite(s): WST-1510 Introduction to Womens Studies.

Equivalent Courses
The Equivalency Course Chart lists current semester courses that have equivalencies and semester courses that have been officially deleted and therefore are unavailable to students. Each current/deleted course is paired with a course replacement. The course replacement is identical in content and has been renumbered to meet new degree requirements, or is very similar in content and instructional function and has been declared equivalent by content experts in the specific discipline. Active equivalent semester courses have sufficient content similar in nature and instructional function and have been declared equivalent. These course equivalents will be used consistently College-wide.

The concept of repeated courses, point of graduation, and point of course completion are important elements of equivalent courses. These elements are explained below.

Repeated Course
If identified as equivalent, renumbered course may be treated as repeats.

The Equivalent Course Chart identifies a new course as equivalent to a current or deleted course. These new courses carry a different course number and may also carry a different subject code. These identified equivalent renumbered courses will be treated as repeats under the College’s repeated course rules, i.e., credit is earned for only one completion and the single highest grade is computed into the student’s grade point average.

Repeated Modularized Courses
All modularized courses together are equivalent to their source course and may be treated as repeats.

Source courses that have been modularized are indicated in the Course Descriptions of the College Catalog and may be identified by use of letters “A” through “E” in the fourth position of the course number. Modular courses, when all are completed, are equivalent to the source course. To meet degree requirements, completion of either the source course or all its modules is required. When a source course is used to meet degree requirements, none of the modular courses may be used; and when modular courses are used to meet degree requirements, the source course may not be used.

Since modular courses are equivalent to their source course, modular courses will be treated as repeats under the College’s repeated course rules provided that the earned grade in each of the modular courses is higher than the grade earned in the source course. A source course may be treated as a repeat of all the modules.

Point of Graduation
If a course is a 2000-level course at the time the student graduates, the credits may apply to the 2000-level degree requirement.

A course may be renumbered from a 1000-level course number to a 2000-level course number. The degree requirements for the Associate of Arts, Associate of Science, Associate of Applied Business and Associate of Applied Science, effective Fall 2012, require 12 semester credits at the 2000-level. Students who took a 1000-level course that has since been renumbered to a 2000-level course may use that 2000-level course to meet the 2000-level requirement.

Point of Course Completion
If a course was taken when it carried a 2000-level course number, the semester credits may be applied to the 2000-level degree requirement.

A course may be renumbered from a 2000-level course number to a 1000-level course number. The student may apply the course to the 12 semester credits at the 2000-level requirement if the course carried a 2000-level course number at the time the student took the course.

Equivalency Courses

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<th>Deleted Courses That Are Equivalent for Grade Repeat</th>
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Cross-Listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They may differ in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

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Standard and Honors Courses

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## Deleted Courses with No Equivalency

The following courses have been deleted from the College course inventory and no replacements have been indicated. If you are required to take one of these courses to meet your degree requirements, please see the faculty coordinator or program manager in that department to discuss your options.

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FACULTY & COLLEGE LEADERSHIP

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Interim Assoc. Vice President, College-wide Accreditation and Healthcare Initiatives
B.A., University of Puerto Rico
M.B.A., Baldwin Wallace College

McKNIGHT, SANDRA
Assoc. Vice President, Access, Learning & Success
B.S.B.A., Bowling Green State University
M.B.A., Cleveland State University
Ed.D., National American University

PFISTER, DELIA
Assoc. Vice President, Academic Professional Development, Online Learning and Articulation and Transfer
B.A., Ohio University
M.A., Ohio University
Ph.D., Kent State University

Executive Directors

ABDELKARIM, SHEHADEH
Executive Director, Facilities Operations
B.A and B.M.E, Cleveland State University
M.A., Cleveland State University

ABDOLLAHIAN, HAMID
Executive Director, CISCO
M.S.A., Roosevelt University
M.B.A., Roosevelt University

BITTERMAN, MARY KAY
Executive Director, Youth Technologies
B.A., University of Dayton

BRYAN, ROBERT W.
Executive Director, Media Engineering
A.A.S., Cuyahoga Community College
B.S., Bellevue University

COON, SHARON
Executive Director, Development
B.A, Hiram College
M.B.A., Lake Erie College

CRAIDER, HOLLY
Executive Director, Curriculum Development and Transfer
B.A., John Carroll University
M.A., John Carroll University
Ph.D., Kent State University

DeCHANT, RICHARD
Executive Director, Veteran Services & Programs
B.A., John Carroll University

DOLINAR, JOHN
Executive Director, Enterprise Infrastructure Services
B.S., Western Governors University
M.S., Western Governors University

DORSTEN, CHRIS
Executive Director, Enrollment Operations & College Registrar
A.A., Sinclair Community College
B.A., Park University
M.A., Cleveland State University

GROVER, NOREEN
Executive Director, Development Office
B.A., Marquette University

HILBERT, STEPHEN
Executive Director, Supplier Managed Services
B.S., John Carroll University
M.B.A., Baldwin-Wallace College

JACKSON, ANTHONY
Executive Director, Emergency Fire and Safety Systems
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B.A., Myers University

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Executive Director, Accounting
A.S., Jamestown Community College
B.S., University of Pittsburgh
M.B.A., Otterbein College

KEMP, THOMAS
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B.A., University of Akron
M.A., University of Akron

LANDINI, MICHAEL
Executive Director, Development Office
B.A., George Washington University

McDADE, KATE
Executive Director, Development Office
B.S., Miami University

MOIR, CHRIS ALAN
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B.A., Kent State University

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J.D., University of Illinois College of Law

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M.A., Gonzaga University

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B.A., Case Western Reserve University
M.P.A., The Ohio State University

WHEATON, JODY
Executive Director, Client Solutions & Program Management
B.S., Bowling Green State
M.S., Radford University

Deans/Associate Deans
College-wide.......... COX, G. PAUL
Dean, Creative Arts
B.Mus., Oberlin Conservatory of Music
M.M., Peabody Conservatory, John Hopkins University

PLOSKONKA, JAMES
Assoc. Dean, Public Safety
B.S. University of Pennsylvania at Mansfield
M.M., Boston Conservatory
Ph.D., University of Kentucky

STEWART, STANDISH
Interim VP Workforce Innovation, WCED Division & Dean IT
B.A., Middle Tennessee State University
M.A., Middle Tennessee State University
Ph.D., University of Maryland University

YATES, VIVIAN
Dean, Nursing
A.S., Lorain Community College
B.S.N., University of Akron
M.S.N., Kent State University
Ph.D., University of Akron

Eastern Campus............
CONRAD, ANN
Assoc. Dean, Business, Math & Technology
M.B.A, Baldwin Wallace University

CRAWFORD, ANDREW
Dean, Access & Completion
B.S., University of Central Florida
M.Ed., Ohio University

CUNION, WILLIAM
Interim Dean, Learning & Engagement and Assoc. Dean, Liberal Arts
B.A., Xavier University
M.A., Ohio University
Ph.D., University of Illinois

JORDAN, MATTHEW
Jack, Joseph and Morton Mandel Dean for Humanities
B.A. Ohio University
M.A., Biola University
Ph.D., Ohio State University

MALONE, GREGORY
Assoc. Dean, Health Careers & Sciences
A.A., The Ohio State University
B.A., DeVry University
M.A., American College of Education

Metropolitan Campus...........
DOHANOS, ABIGAIL
Assoc. Dean, Liberal Arts
B.S., Canisius College
M.A., University of West Virginia

ELLIS-HILL, RALONDA
Dean, Access & Completion
B.A., Kent State University
M.P.A., Kent State University

KLINE, GREGORY M.
Associate Dean, Health Careers & Sciences
B.A. Benedictine University
M.B.A., Ursuline College
D.P.T., Midwestern University  
E.D.D., Argosy University

PARKS, AMY  
Interim Dean, Learning & Engagement  
B.M., University of Delaware  
M.M., Peabody Conservatory, John Hopkins University

WARE, SHUNDA  
Assoc. Dean, Business, Math & Technology  
B.S., Georgia State University  
M.B.A., DeVry University

**Western Campus**

BATCH-WILSON, WENDY  
Interim Assoc. Dean, Health Careers & Sciences  
B.S.N, Cleveland State University  
M.S.N., Walden University  
D.N.P, Walden University

BRATHWAITE, ORMOND  
Assoc. Dean, STEM  
B.S., City University of New York  
M.A., City University of New York  
Ph.D., City University of New York

CLARKE, COURTNEY  
Assoc. Dean, Social Sciences  
B.A., University of Virginia  
M.A., Cleveland State University  
Ph.D., Kent State University

DORSEY, TIMOTHY  
Dean, Access & Completion  
B.A., Cleveland State University  
M.A., Baldwin Wallace University  
Ph.D., Cleveland State University

EAFFORD, FELISA  
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B.A., Case Western Reserve University  
M.A., The Ohio State University  
Ph.D., University of Toledo

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B.B.A., Baldwin Wallace University  
M.B.A., Case Western Reserve University

TAYLOR HEARD, JANICE  
Dean, Learning & Engagement  
B.A., Kent State University  
M.Ed., Kent State University  
Ph.D., University of Georgia

**Westshore Campus**

HUFF, MICHAEL  
Dean/General Manager, Hospitality Center of Excellence  
B.S., Arizona State University  
M.B.A., Arizona State University

McMAHON, CLAIRE  
Assoc. Dean, Learning Engagement & Transitions  
B.A., Manhattan College

M.F.A., Naropa University  
Ph.D., Kent State University

MONATH, KAREN  
Assoc. Dean, Hospitality Management  
A.C.A., Culinary Institute of America  
B.H.M., Florida International University  
M.H.M., Florida International University

PROUDFIT, ANN  
Dean, Access & Completion  
B.A., Washington and Jefferson College  
M.S., The Ohio State University  
Ph.D., University of Toledo

**Assistant Deans**

**College-wide**

EDWARDS, CONSTANCE  
Asst. Dean, Creative Arts  
Ph.D., University of Arizona

MAUSser, HERBERT  
Asst. Dean, Honors & Scholars Programs  
B.S., Case Western Reserve University  
M.S., Case Western Reserve University

**Eastern Campus**

HAIDUC, DAVID  
Asst. Dean, Learning Commons  
M.A., University of Akron

KEENEY, Dwayne  
Asst. Dean, Learning and Engagement  
B.S. Heidelberg College  
M.A. Cleveland State University

RAHN, ROBERT  
Asst. Dean, IT  
B.A., The University of Cincinnati  
M.A., The University of Cincinnati

SPIVEY, SHAMUIRE  
Asst. Dean, Access & Completion  
M.A, Adelphi University

VODICKA, KATE  
Asst. Dean, Counseling  
B.A., Mount Union College  
M.A., Asbury Theological Seminary

**Metropolitan Campus**

BAZILE, RICHARD  
Asst. Dean, Learning Commons  
B.A., DePaul University  
M.A., Chicago State University  
M.S., University of Illinois

BRILEY, VINCENT
Asst. Dean, Learning & Engagement
B.A., Ohio University
M.A., Ohio University

ROBY-AUTREY, JEANETTA
Asst. Dean, Access & Completion
B.A., Malone University School of Business
M.A., Malone University School of Business

WEBB, TERRY
Asst. Dean, Counseling
A.A., Ashland Theological Seminary
M.S., Ashland Theological Seminary

Western Campus ............
BATIG, MIRIA
Asst. Dean, Learning & Engagement
B.A., John Carroll University
M.B.A., Cleveland State University

CARABALLO, ISRAEL
Asst. Dean, Learning Commons
A.A.B., Cuyahoga Community College
B.S., Barrington University

RUANE, JULIA
Asst. Dean, Access & Completion
B.A., Cleveland State University
M.B.A., Chaminade University

JOHNSTON, CHRISTOPHER
Asst. Dean, Counseling
B.A., Northern Illinois University
M.A., Northern Illinois University
M.S.Ed., Northern Illinois University

Westshore Campus........
BUDZICK, DANIELLE
Asst. Dean, Learning & Engagement
B.S., The Ohio State University
M.Ed., Cleveland State University
Ph.D. Capella University

WALZ, KRISTINE
Asst. Dean, Access & Completion
B.S., Winona State University
M.S., University of Wisconsin at Lacrosse
Ed.D., Ferris State University (ABD)

Faculty
A. ...........
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B.S., Franklin University
M.S., Capella University

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M.S., The Ohio State University
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B.A., Osmania University, India
M.A., Central University, India
M.S., Case Western Reserve University

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M.A., University of Michigan
Ph.D., University of Michigan

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M.L.S., Kent State University

DURKIN, EDWARD
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M.A., Youngstown State University

DUVALL, TERRY
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B.S., Ohio University

M.A., University of Dayton
M.A., University of Dayton

EASLEY, SHAWN
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M.A., Case Western Reserve University
Ph.D., Case Western Reserve University

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M.S., John Carroll University

ELLIS, KELLEE
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B.A., Ohio University
M.Ed., Cleveland State University

ELLIS, ROBERT
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B.A., North Adams State College
M.A., Kent State University
M.F.A., University of Florida

ELMORE GREEN, JENNA
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M.S.N., Cleveland State University

EMRICH, KELLIE
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ENOS, STEPHEN
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M.M., University of Akron

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B.S.N., Cleveland State University
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