

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 at the 1000-level or higher. No more than 3 of the 60 credits can be completed in physical education.
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 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 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 that 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 Science 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 I¹
- Three (3) semester credits selected from the following courses:

Communication Code	Title	Credit Hours
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Communication Studies

COMM-1010	Fundamentals of Speech Communication	3
COMM-101H	Honors Speech Communication	3

English

ENG-1020	College Composition II	3
ENG-102H	Honors College Composition II	3
ENG-2151	Technical Writing	3

Mathematics

Code	Title	Credit Hours
MATH-1100	Mathematical Explorations	3
MATH-1190	Algebraic and Quantitative Reasoning	3
MATH-1240	Contemporary Mathematics	3
MATH-1380	Mathematics for Elementary and Middle School Teachers II	4
MATH-1410	Elementary Probability and Statistics I	3
MATH-1420	Elementary Probability and Statistics II	3
MATH-1470	Modern Mathematics for Business and Social Science I	4
MATH-1480	Modern Mathematics for Business and Social Sciences II	4
MATH-1490	Business Probability and Statistics I	3
MATH-1500	Business Probability and Statistics II	3
MATH-1530	College Algebra	4
MATH-153H	Honors College Algebra	4
MATH-1540	Trigonometry	3
MATH-154H	Honors Trigonometry	3
MATH-1580	Precalculus	5
MATH-1610	Calculus I	5
MATH-161H	Honors Calculus I	5
MATH-1620	Calculus II	5
MATH-162H	Honors Calculus II	5
MATH-2010	Introduction to Discrete Mathematics	4
MATH-2310	Calculus III	4
MATH-231H	Honors Calculus III	4
MATH-2410	Introduction to Linear Algebra	3
MATH-2520	Differential Equations	3

Natural and Physical Sciences

Code	Title	Credit Hours
ANTH-1210	Human Evolution	4
Biology		
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-1070	Insect Biology	3	ESCI-1610	Geology of the National Parks	3
BIO-1100	Introduction to Biological Chemistry	3	ESCI-161L	Lab in Geology of the National Parks	1
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging	4	Physics		
BIO-1230	Anatomy and Physiology of the Eye	4	PHYS-1010	Astronomy	3
BIO-1410	Anatomy & Physiology of Domestic Animals I	4	PHYS-101L	Astronomy Laboratory	1
BIO-1420	Anatomy & Physiology of Domestic Animals II	3	PHYS-1050	Everyday Physics	2
BIO-1500	Principles of Biology I	4	PHYS-1210	College Physics I	4
BIO-150H	Honors Principles of Biology I	4	PHYS-1220	College Physics II	4
BIO-1510	Principles of Biology II	4	PHYS-1300	Physics of Optical Materials	4
BIO-151H	Honors Principles of Biology II	4	PHYS-2250	Radiographic Physics and Quality Control	4
BIO-2020	Tropical Biology	4	PHYS-2310	General Physics I	5
BIO-2060	Principles of Genetics	3	PHYS-2320	General Physics II	5
BIO-2100	Biology of Aging	3	The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Science degree:		
BIO-2150	Environmental Science	3	DIET-1200	Basic Nutrition	3
BIO-2200	Radiobiology	2	MT-1242	Somatic Studies I	3
BIO-2331	Anatomy and Physiology I	4	MT-1272	Somatic Studies II	3
BIO-2341	Anatomy and Physiology II	4	MT-1280	Somatic Studies III	2
BIO-2500	Microbiology	4	1		
BIO-2600	Pathophysiology	3	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.		
Chemistry			Mathematics and Data Analysis (3 semester credits)		
CHEM-1000	Everyday Chemistry	3	The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:		
CHEM-100L	Everyday Chemistry Laboratory	1	• Three (3) semester credits of Mathematics at the 1000-level or higher.		
CHEM-1010	Introduction to Inorganic Chemistry	4	Code	Title	Credit Hours
CHEM-101H	Honors Introduction to Inorganic Chemistry	4	MATH-1100	Mathematical Explorations	3
CHEM-1020	Introduction to Organic Chemistry and Biochemistry	4	MATH-1190	Algebraic and Quantitative Reasoning	3
CHEM-102H	Honors Introduction to Organic Chemistry and Biochemistry	4	MATH-1240	Contemporary Mathematics	3
CHEM-1081	Medicinal Plants Chemistry	3	MATH-1380	Mathematics for Elementary and Middle School Teachers II	4
CHEM-1300	General Chemistry I	4	MATH-1410	Elementary Probability and Statistics I	3
CHEM-130H	Honors General Chemistry I	5	MATH-1420	Elementary Probability and Statistics II	3
CHEM-130L	General Chemistry Laboratory I	1	MATH-1470	Modern Mathematics for Business and Social Science I	4
CHEM-1310	General Chemistry II	4	MATH-1480	Modern Mathematics for Business and Social Sciences II	4
CHEM-131H	Honors General Chemistry II	5	MATH-1490	Business Probability and Statistics I	3
CHEM-131L	General Chemistry Laboratory II	1	MATH-1500	Business Probability and Statistics II	3
CHEM-2000		5	MATH-1530	College Algebra	4
CHEM-2300	Organic Chemistry I	5	MATH-153H	Honors College Algebra	4
CHEM-2310	Organic Chemistry II	5	MATH-1540	Trigonometry	3
Earth Science			MATH-154H	Honors Trigonometry	3
ESCI-1030	Earth	3	MATH-1580	Precalculus	5
ESCI-103L	Earth Laboratory	1	MATH-1610	Calculus I	5
ESCI-1040	Weather Studies	3	MATH-161H	Honors Calculus I	5
ESCI-1050	Introduction to Ocean Studies	3	MATH-1620	Calculus II	5
ESCI-1310	Physical Geography	3			
ESCI-131L	Lab in Physical Geography	1			
ESCI-1410	Physical Geology	3			
ESCI-141H	Honors Physical Geology	3			
ESCI-141L	Lab in Physical Geology	1			
ESCI-1510	Historical Geology	3			
ESCI-151L	Lab in Historical Geology	1			

MATH-162H	Honors Calculus II	5
MATH-2010	Introduction to Discrete Mathematics	4
MATH-2310	Calculus III	4
MATH-231H	Honors Calculus III	4
MATH-2410	Introduction to Linear Algebra	3
MATH-2520	Differential Equations	3

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.

Code	Title	Credit Hours
Art		
ART-1010	Art Appreciation	3
ART-1040	Survey of Non-Western Art	3
ART-2020	Art History Survey: Prehistoric to Renaissance	3
ART-2030	Art History Survey: Late Renaissance to Present	3
Dance		
DANC-1100	Dance Appreciation	3
English 2000-level Literature courses		
ENG-2020	Women Writers on the Experiences of Women	3
ENG-2310	American Literature I	3
ENG-2320	American Literature II	3
ENG-2350	British Literature I	3
ENG-2360	British Literature II	3
ENG-2410	Introduction to Literature: Poetry	3
ENG-2420	Introduction to Literature: Fiction	3
ENG-2430	Introduction to Literature: Drama	3
ENG-2510	African-American Literature I	3
ENG-2520	African-American Literature II	3
ENG-2601	Literature for Children and Adolescents	3
ENG-2700	World Literature	3
ENG-2710	Shakespeare	3
ENG-2730	Exploration of World Mythology	3
ENG-2770	Rhetorics of Gaming: Introduction to Video Game Analysis	3
History		

HIST-2031	Islam to the Modern Middle East	3
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Humanities		
HUM-1010	Introduction to Humanities	3
HUM-1020	The Individual in Society	3
HUM-102H	Honors Individual in Society	3
HUM-1030	The Individual in Cosmos	3
HUM-2020	Community Engagement Through the Humanities	3

Media and Journalism Studies		
MJS-1310	Film Appreciation	3

Music		
MUS-1010	Survey of European Classical Music	3
MUS-1020	Survey of Jazz	3
MUS-1030	Survey of Rock and Roll	3
MUS-1040	Survey of African-American Music	3
MUS-1050	Survey of World Music	3

Philosophy		
PHIL-1000	Critical Thinking	3
PHIL-1010	Introduction to Philosophy	3
PHIL-101H	Honors Introduction to Philosophy	3
PHIL-1020	Introduction to Logic	3
PHIL-2010	Comparative World Religions	3
PHIL-2020	Ethics	3
PHIL-202H	Honors Ethics	3
PHIL-2031	Philosophy of Science	3
PHIL-2040	Philosophy of Art	3
PHIL-2050	Bioethics	3
PHIL-205H	Honors Bioethics	3
PHIL-2060	Business Ethics	3
PHIL-208H	Honors Social Justice	3

Religious Studies		
REL-1010	Introduction to Religious Studies	3
REL-2010	Religious Traditions of Western Christianity	3
REL-2060	African-American Religious Experience	3

Theatre		
THEA-1010	Theatre Appreciation	3
THEA-2210	History of Theatre and Drama I	3
THEA-2220	History of Theatre & Drama II	3

Social and Behavioral Sciences

Code	Title	Credit Hours
Anthropology		
ANTH-1010	Cultural Anthropology	3
ANTH-2010	Peoples and Cultures of the World	3
ANTH-2110	Archaeology	3
Economics		
ECON-1210	Survey of Economics	3
ECON-2000	Principles of Microeconomics	3
ECON-2010	Principles of Macroeconomics	3
Geography		
GEOG-1000	Introduction to Geography	3

GEOG-1010	World Regional Geography	3	SOC-2110	Death and Dying	3
GEOG-1050	Africans in the Americas	3	SOC-2160	Introduction to Criminology	3
GEOG-1510	Regional Geography of the United States and Canada	3	SOC-2310	Contemporary American Black-White Relations	3
GEOG-2030	Environmental Geography	3	SOC-2410	Sociology of Gender	3
History					
HIST-1010	History of Civilization I	3	SOC-2510	Urban Sociology	3
HIST-101H	Honors History of Civilization I	3	SOC-2550	Race and Ethnic Relations	3
HIST-1020	History of Civilization II	3	Urban Studies		
HIST-102H	Honors History of Civilization II	3	UST-1010	Introduction to Urban Studies	3
HIST-1510	United States History to 1877	3	UST-2020	Urban Cultures	3
HIST-151H	Honors United States History to 1877	3	UST-2070	Urban Politics	3
HIST-1520	United States History Since 1877	3	UST-2640	American Urban History	3
HIST-152H	Honors United States History since 1877	3	Women and Gender Studies		
HIST-1630	History of Immigration in America	3	WGS-1510	Introduction to Women's and Gender Studies	3
HIST-1700	History of Africa	3	WGS-151H	Honors Introduction to Women's and Gender Studies	3
HIST-2150	African American History to 1877	3	WGS-2010	Women in the World	3
HIST-2160	African American History 1877-present	3	WGS-201H	Honors Women in the World	3
HIST-2660	Women in American History	3	WGS-2120	Women and Politics	3
HIST-2700	History of Modern Africa	3	Natural and Physical Sciences		
Political Science					
POL-1010	American National Government	3	Code	Title	Credit Hours
POL-101H	Honors American National Government	3	Natural and Physical Sciences		
POL-1020	State & Local Government	3	ANTH-1210	Human Evolution	4
POL-2020	Introduction to Conflict and Peace Studies	3	Biology		
POL-2030	Comparative Politics	3	BIO-1040	The Cell and DNA	3
POL-2060	Political Systems of Africa	3	BIO-104L	The Cell and DNA Laboratory	1
POL-2070	International Relations	3	BIO-1050	Human Biology	3
POL-2100	Constitutional Law	3	BIO-105L	Human Biology Laboratory	1
POL-2120	Women and Politics	3	BIO-1060	Environment, Ecology, and Evolution	3
Psychology					
PSY-1010	General Psychology	3	BIO-106L	Environment, Ecology, & Evolution Laboratory	1
PSY-101H	Honors General Psychology	3	BIO-1070	Insect Biology	3
PSY-1050	Introduction to Industrial/Organizational Psychology	3	BIO-1100	Introduction to Biological Chemistry	3
PSY-2010	Child Growth and Development	3	BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging	4
PSY-2020	Life Span Development	4	BIO-1230	Anatomy and Physiology of the Eye	4
PSY-202H	Honors Life Span Development	4	BIO-1410	Anatomy & Physiology of Domestic Animals I	4
PSY-2040	Social Psychology	3	BIO-1420	Anatomy & Physiology of Domestic Animals II	3
PSY-2050	Psychology of Personality	3	BIO-1500	Principles of Biology I	4
PSY-2060	Adolescent Psychology	3	BIO-150H	Honors Principles of Biology I	4
PSY-2080	Abnormal Psychology	3	BIO-1510	Principles of Biology II	4
PSY-2100	Introduction to Aging	3	BIO-151H	Honors Principles of Biology II	4
PSY-2110	Educational Psychology	3	BIO-2020	Tropical Biology	4
Sociology					
SOC-1010	Introductory Sociology	3	BIO-2060	Principles of Genetics	3
SOC-101H	Honors Introductory Sociology	3	BIO-2100	Biology of Aging	3
SOC-1020	Social Institutions	3	BIO-2150	Environmental Science	3
SOC-2010	Social Problems	3	BIO-2200	Radiobiology	2
SOC-201H	Honors Social Problems	3	BIO-2331	Anatomy and Physiology I	4
SOC-2020	Sociology of the Family	3	BIO-2341	Anatomy and Physiology II	4
SOC-2100	Aging and Society	3			

BIO-2500	Microbiology	4	MT-1272	Somatic Studies II	3
BIO-2600	Pathophysiology	3	MT-1280	Somatic Studies III	2
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-1081	Medicinal Plants Chemistry	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		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			
ESCI-141H	Honors Physical Geology	3			
ESCI-141L	Lab in Physical Geology	1			
ESCI-1510	Historical Geology	3			
ESCI-151L	Lab in Historical Geology	1			
ESCI-1610	Geology of the National Parks	3			
ESCI-161L	Lab in Geology of the National Parks	1			
Physics					
PHYS-1010	Astronomy	3			
PHYS-101L	Astronomy Laboratory	1			
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 Science degree:					
DIET-1200	Basic Nutrition	3			
EMT-1401	Anatomy & Physiology for Paramedics	4			
MT-1242	Somatic Studies I	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. Program requirements are identified in the Associate of Applied Science 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.