# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuyahoga Community College Catalog</td>
<td>8</td>
</tr>
<tr>
<td>Board of Trustees &amp; Mission, Vision &amp; Values</td>
<td>8</td>
</tr>
<tr>
<td>Welcome to Tri-C</td>
<td>9</td>
</tr>
<tr>
<td>Important Phone Numbers</td>
<td>9</td>
</tr>
<tr>
<td>About Cuyahoga Community College</td>
<td>11</td>
</tr>
<tr>
<td>College Climate and Commitment to Diversity and Affirmative Action</td>
<td>11</td>
</tr>
<tr>
<td>History of Cuyahoga Community College and the Campuses</td>
<td>11</td>
</tr>
<tr>
<td>Community and Continuing Education</td>
<td>13</td>
</tr>
<tr>
<td>Workforce, Community and Economic Development Division</td>
<td>13</td>
</tr>
<tr>
<td>Corporate College</td>
<td>14</td>
</tr>
<tr>
<td>Accreditation and Institutional Memberships</td>
<td>15</td>
</tr>
<tr>
<td>Academic Information</td>
<td>17</td>
</tr>
<tr>
<td>Academic Support Services</td>
<td>20</td>
</tr>
<tr>
<td>Credit for Prior Learning</td>
<td>24</td>
</tr>
<tr>
<td>Degree and Certificate Program Requirements</td>
<td>25</td>
</tr>
<tr>
<td>General Curriculum Information</td>
<td>63</td>
</tr>
<tr>
<td>Grading System</td>
<td>65</td>
</tr>
<tr>
<td>Online, Blended, and Distance Learning</td>
<td>68</td>
</tr>
<tr>
<td>Admissions</td>
<td>70</td>
</tr>
<tr>
<td>Registration</td>
<td>72</td>
</tr>
<tr>
<td>Paying for College</td>
<td>74</td>
</tr>
<tr>
<td>Student Information</td>
<td>77</td>
</tr>
<tr>
<td>First Year Experience</td>
<td>77</td>
</tr>
<tr>
<td>Student ID Card, My Tri-C Space, and E-mail</td>
<td>77</td>
</tr>
<tr>
<td>Student Records</td>
<td>78</td>
</tr>
<tr>
<td>Student Services</td>
<td>78</td>
</tr>
<tr>
<td>Career Centers</td>
<td>79</td>
</tr>
<tr>
<td>Counseling</td>
<td>79</td>
</tr>
<tr>
<td>Disability Services for Students – Access Program</td>
<td>79</td>
</tr>
<tr>
<td>Student Life</td>
<td>80</td>
</tr>
<tr>
<td>Cuyahoga Community College Foundation and Alumni Relations</td>
<td>81</td>
</tr>
<tr>
<td>Veterans Affairs</td>
<td>82</td>
</tr>
<tr>
<td>Student Rights and Responsibilities</td>
<td>83</td>
</tr>
<tr>
<td>Transfer Information</td>
<td>85</td>
</tr>
<tr>
<td>Transferring Credits</td>
<td>85</td>
</tr>
<tr>
<td>Articulation Agreements</td>
<td>88</td>
</tr>
<tr>
<td>Ohio Transfer Module</td>
<td>88</td>
</tr>
<tr>
<td>Transfer Assurance Guides</td>
<td>92</td>
</tr>
<tr>
<td>Academic Pathways</td>
<td>107</td>
</tr>
<tr>
<td>Business</td>
<td>107</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>107</td>
</tr>
<tr>
<td>Health Careers and Nursing</td>
<td>107</td>
</tr>
<tr>
<td>Hospitality</td>
<td>108</td>
</tr>
<tr>
<td>Industrial Manufacturing and Construction</td>
<td>111</td>
</tr>
<tr>
<td>Associate of Science Degree/University Transfer</td>
<td>111</td>
</tr>
<tr>
<td>Information Technology</td>
<td>111</td>
</tr>
<tr>
<td>Public Safety</td>
<td>111</td>
</tr>
<tr>
<td>Science, Technology, Engineering, and Mathematics</td>
<td>112</td>
</tr>
<tr>
<td>Find Your Major or Program</td>
<td>113</td>
</tr>
<tr>
<td>Associate of Arts Degree</td>
<td>113</td>
</tr>
<tr>
<td>Associate of Science Degree</td>
<td>113</td>
</tr>
<tr>
<td>Accounting, Associate of Applied Business</td>
<td>113</td>
</tr>
<tr>
<td>Bookkeeping, Certificate of Proficiency</td>
<td>115</td>
</tr>
<tr>
<td>Payroll, Certificate of Proficiency</td>
<td>116</td>
</tr>
<tr>
<td>Tax Preparation, Certificate of Proficiency</td>
<td>117</td>
</tr>
<tr>
<td>Administrative Office Systems, Associate of Applied Business Degree</td>
<td>117</td>
</tr>
<tr>
<td>Applied Industrial Technology (Bricklaying &amp; Allied Crafts), Associate of Applied Science</td>
<td>118</td>
</tr>
<tr>
<td>Applied Industrial Technology (Bricklaying &amp; Allied Crafts), Certificate of Proficiency</td>
<td>119</td>
</tr>
<tr>
<td>Applied Industrial Technology (Building Construction), Short-Term Certificate</td>
<td>120</td>
</tr>
<tr>
<td>Applied Industrial Technology (Carpentry), Associate of Applied Science</td>
<td>121</td>
</tr>
<tr>
<td>Carpenter, Certificate of Proficiency</td>
<td>122</td>
</tr>
<tr>
<td>Applied Industrial Technology (Cement Masonry), Associate of Applied Science</td>
<td>123</td>
</tr>
<tr>
<td>Cement Masonry, Certificate of Proficiency</td>
<td>124</td>
</tr>
<tr>
<td>Applied Industrial Technology (Communication Transport Systems), Associate of Applied Science</td>
<td>125</td>
</tr>
<tr>
<td>Communication Transport Systems, Certificate of Proficiency</td>
<td>126</td>
</tr>
<tr>
<td>Applied Industrial Technology (Construction Tending and Hazardous Material Abatement), Associate of Applied Science</td>
<td>128</td>
</tr>
<tr>
<td>Construction Tending and Hazardous Material Abatement, Certificate of Proficiency</td>
<td>129</td>
</tr>
<tr>
<td>Applied Industrial Technology (Drywall Finishing), Associate of Applied Science</td>
<td>130</td>
</tr>
<tr>
<td>Drywall Finishing, Certificate of Proficiency</td>
<td>130</td>
</tr>
<tr>
<td>Applied Industrial Technology (Electrical Construction), Associate of Applied Science</td>
<td>131</td>
</tr>
<tr>
<td>Applied Industrial Technology (Industrial Manufacturing and Construction), Associate of Applied Science</td>
<td>132</td>
</tr>
</tbody>
</table>
Electrical Construction, Certificate of Proficiency .................................. 134
Applied Industrial Technology (Floorlaying), Associate of Applied Science ......................................................................................... 134
Floorlaying, Certificate of Proficiency .................................................... 136
Applied Industrial Technology (Glazing), Associate of Applied Science .............................................................................................. 136
Glazing, Certificate of Proficiency ............................................................. 138
Applied Industrial Technology (Ironworking), Associate of Applied Science .......................................................................................... 139
Ironworking, Certificate of Proficiency .................................................... 140
Applied Industrial Technology (Lifting Technologies), Associate of Applied Science ................................................................. 141
Applied Industrial Technology (Manufacturing Technology), Associate of Applied Science ................................................................. 143
CNC Machining and Composites Manufacturing, Short-Term Certificate .............................................................................................. 144
Applied Industrial Technology (Millwrighting), Associate of Applied Science ......................................................................................... 144
Millwrighting, Certificate of Proficiency .................................................... 145
Applied Industrial Technology (Operating Engineers), Associate of Applied Science ................................................................. 146
Operating Engineers, Certificate of Proficiency ......................................... 148
Applied Industrial Technology (Painting), Associate of Applied Science .............................................................................................. 149
Painting, Certificate of Proficiency ............................................................. 150
Applied Industrial Technology (Pile Driving), Associate of Applied Science .............................................................................................. 151
Pile Driving, Certificate of Proficiency ....................................................... 152
Applied Industrial Technology (Pipefitting), Associate of Applied Science .............................................................................................. 153
Pipefitting, Certificate of Proficiency .......................................................... 155
Applied Industrial Technology (Plumbing), Associate of Applied Science .............................................................................................. 156
Plumbing, Certificate of Proficiency .......................................................... 157
Applied Industrial Technology (Sheet Metal Working), Associate of Applied Science ................................................................. 158
Sheet Metal Working, Certificate of Proficiency ......................................... 160
Automotive Technology, Associate of Applied Science ................................ 161
Automotive Technology, Certificate of Proficiency ...................................... 162
Automotive Maintenance and General Service, Short-Term Certificate ................................................................. 163
Business Management, Associate of Applied Business .................................. 163
Business Management with a Concentration in Human Resources Management, Associate of Applied Business ............................. 164
Business Management with a Concentration in International Business, Associate of Applied Business ...................................................... 165
Business Management (International Business), Post-Degree Professional Certificate ................................................................. 166
Business Management with a Concentration in Small Business Management, Associate of Applied Business .............................................. 167
Business Technology, Associate of Applied Business (formerly Administrative Office Systems) ................................................................. 168
Administrative Specialist, Certificate of Proficiency ..................................... 169
Basic Office Skills, Short-Term Certificate ................................................ 170
Entrepreneurial Technology, Certificate of Proficiency ........................... 170
Legal Administrative Specialist, Certificate of Proficiency ........................ 171
Medical Administrative Specialist, Certificate of Proficiency .................... 172
Microsoft Office Application Specialist, Short-Term Certificate ............... 173
Office Operations Management, Certificate of Proficiency ....................... 173
Virtual Office Assistant, Certificate of Proficiency .................................... 174
Captioning and Court Reporting, Associate of Applied Business .................. 174
Captioning and Court Reporting Certified Stenowriting, Certificate of Proficiency ................................................................. 175
Captioning and Court Reporting Certified Voicewriting, Certificate of Proficiency ................................................................. 176
Captioning and Cart Providing, Short-Term Certificate ............................... 177
Court Reporting Technologies, Short-Term Certificate ................................ 178
Voicewriting, Short-Term Certificate .......................................................... 179
Conflict Resolution and Peace Studies, Short-Term Certificate .................... 179
Construction Engineering Technology, Associate of Applied Science .............. 181
Construction Project Management, Certificate of Proficiency ..................... 182
Criminal Justice, Associate of Applied Science ........................................ 183
Criminal Justice with a Concentration in Basic Police Academy, Associate of Applied Science ................................................................. 184
Criminal Justice with a Concentration in Corrections, Associate of Applied Science ................................................................. 185
Criminal Justice with a Concentration in Security Administration, Associate of Applied Science ................................................................. 186
Deaf Interpretive Services, Associate of Applied Science ............................ 187
Dental Hygiene, Associate of Applied Science .............................................. 189
Diagnostic Medical Sonography, Associate of Applied Science .................. 190
Diagnostic Medical Sonography with a Concentration in General Sonography, Associate of Applied Science .............................................. 192
Dietetic Technology, Associate of Applied Science ...................................... 194
Dietary Management, Certificate of Proficiency ........................................ 196
General Nutrition, Certificate of Proficiency ............................................ 197
Early Childhood Education, Associate of Applied Science ........................ 197
Child Care Administration, Short-Term Certificate .................................... 199
Child Development, Short-Term Certificate ................................................ 200
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical/Electronic Engineering Technology, Associate of Applied Science</td>
<td>201</td>
</tr>
<tr>
<td>Electronic Engineering Technician, Certificate of Proficiency</td>
<td>202</td>
</tr>
<tr>
<td>Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Certificate of Proficiency</td>
<td>203</td>
</tr>
<tr>
<td>Emergency Medical Technician-Basic, Short-Term Certificate</td>
<td>214</td>
</tr>
<tr>
<td>Emergency Medical Technician, Certificate of Proficiency</td>
<td>215</td>
</tr>
<tr>
<td>Environmental, Health and Safety Technology, Certificate of Proficiency</td>
<td>216</td>
</tr>
<tr>
<td>Fire Technology, Associate of Applied Science</td>
<td>218</td>
</tr>
<tr>
<td>Health Information Management, Certificate of Proficiency</td>
<td>218</td>
</tr>
<tr>
<td>Cancer Registrar, Post-Degree Professional Certificate</td>
<td>220</td>
</tr>
<tr>
<td>Health Unit Coordinator, Short-Term Certificate</td>
<td>221</td>
</tr>
<tr>
<td>Medical Billing Specialist, Short-Term Certificate</td>
<td>223</td>
</tr>
<tr>
<td>Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business</td>
<td>225</td>
</tr>
<tr>
<td>Personal Chef, Certificate of Proficiency</td>
<td>226</td>
</tr>
<tr>
<td>Professional Baking, Certificate of Proficiency</td>
<td>227</td>
</tr>
<tr>
<td>Professional Culinarian/Cook, Certificate of Proficiency</td>
<td>228</td>
</tr>
<tr>
<td>Hospitality Management with a Concentration in Lodging-Tourism Management, Associate of Applied Business</td>
<td>228</td>
</tr>
<tr>
<td>Event Planning, Short-Term Certificate</td>
<td>230</td>
</tr>
<tr>
<td>Lodging Rooms Division, Certificate of Proficiency</td>
<td>230</td>
</tr>
<tr>
<td>Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business</td>
<td>231</td>
</tr>
<tr>
<td>Food and Beverage Operations, Certificate of Proficiency</td>
<td>232</td>
</tr>
<tr>
<td>Human Services, Associate of Applied Science</td>
<td>233</td>
</tr>
<tr>
<td>Industrial Automation Certificate of Completion</td>
<td>235</td>
</tr>
<tr>
<td>Information Technology - Business Solutions, Certificate of Proficiency</td>
<td>235</td>
</tr>
<tr>
<td>Information Technology-Business Solutions, Post-Degree Professional Certificate</td>
<td>236</td>
</tr>
<tr>
<td>Information Technology - Networking Software, Certificate of Proficiency</td>
<td>237</td>
</tr>
<tr>
<td>Information Technology-Programming and Development, Certificate of Proficiency</td>
<td>238</td>
</tr>
<tr>
<td>Information Technology-Programming and Development, Post-Degree Professional Certificate</td>
<td>239</td>
</tr>
<tr>
<td>Mobile Application Development, Certificate of Proficiency</td>
<td>241</td>
</tr>
<tr>
<td>Web Application Development, Certificate of Proficiency</td>
<td>242</td>
</tr>
<tr>
<td>Integrated Systems Engineering Technology, Certificate of Proficiency</td>
<td>243</td>
</tr>
<tr>
<td>Automation Maintenance Technician, Certificate of Proficiency</td>
<td>245</td>
</tr>
<tr>
<td>Building Maintenance Technician, Certificate of Proficiency</td>
<td>246</td>
</tr>
<tr>
<td>Mechatronics, Certificate of Proficiency</td>
<td>247</td>
</tr>
<tr>
<td>Industrial Welding, Certificate of Proficiency</td>
<td>247</td>
</tr>
<tr>
<td>Introductory Welding, Certificate of Proficiency</td>
<td>248</td>
</tr>
<tr>
<td>Welding Technology, Certificate of Proficiency</td>
<td>249</td>
</tr>
<tr>
<td>Interior Design, Certificate of Proficiency</td>
<td>249</td>
</tr>
<tr>
<td>Interior Decorating, Certificate of Proficiency</td>
<td>250</td>
</tr>
<tr>
<td>Manufacturing Industrial Engineering Technology, Certificate of Proficiency</td>
<td>251</td>
</tr>
<tr>
<td>3D Digital Design &amp; Manufacturing Technology, Certificate of Proficiency</td>
<td>253</td>
</tr>
<tr>
<td>Digital Design &amp; Product Innovation, Certificate of Proficiency</td>
<td>254</td>
</tr>
<tr>
<td>Digital Manufacturing and Product Launch, Certificate of Proficiency</td>
<td>255</td>
</tr>
<tr>
<td>Computer-Aided Drafting (CAD), Certificate of Proficiency</td>
<td>256</td>
</tr>
<tr>
<td>Computer-Integrated Manufacturing (CIM), Certificate of Proficiency</td>
<td>257</td>
</tr>
<tr>
<td>Machine Tools Operation, Certificate of Proficiency</td>
<td>258</td>
</tr>
<tr>
<td>Quality Control, Certificate of Proficiency</td>
<td>259</td>
</tr>
<tr>
<td>Marketing, Certificate of Proficiency</td>
<td>260</td>
</tr>
<tr>
<td>Massage Therapy, Certificate of Proficiency</td>
<td>261</td>
</tr>
<tr>
<td>Advanced Massage Therapy, Certificate of Proficiency</td>
<td>262</td>
</tr>
<tr>
<td>Massage Therapy, Certificate of Proficiency</td>
<td>263</td>
</tr>
<tr>
<td>Massage Therapy, Post-Degree Professional Certificate</td>
<td>265</td>
</tr>
<tr>
<td>Mechanical Engineering Technology, Certificate of Proficiency</td>
<td>266</td>
</tr>
<tr>
<td>Media Arts and Filmmaking, Certificate of Proficiency</td>
<td>268</td>
</tr>
<tr>
<td>Media Arts and Filmmaking (Motion Graphics), Certificate of Proficiency</td>
<td>269</td>
</tr>
<tr>
<td>Media Arts and Filmmaking (Digital Video Editing), Certificate of Proficiency</td>
<td>270</td>
</tr>
</tbody>
</table>
Medical Assisting, Associate of Applied Science .......... 270
Medical Assisting, Certificate of Proficiency ...................... 272
Patient Navigator, Short Term Certificate ......................... 273
Medical Laboratory Technology, Associate of Applied Science .... 274
Laboratory Phlebotomy, Short-Term Certificate .................. 275
Nuclear Medicine, Associate of Applied Science .................. 276
Nursing, Associate of Applied Science ............................... 278
Nursing (Accelerated Track), Associate of Applied Science .... 280
Nursing (Access LPN to RN Track), Associate of Applied Science ... 282
Practical Nursing, Certificate of Proficiency ....................... 284
Occupational Therapy Assistant Technology, Associate of Applied Science .................. 286
Operations Engineering Technology, Associate of Applied Science .......... 288
Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science ...... 289
Operations Engineering Technology (Engineering Management), Associate of Applied Science .................................. 290
Industrial Management Technology, Certificate of Proficiency .... 291
Optical Technology, Associate of Applied Science ................ 292
Optical Technology, Certificate of Proficiency ........................ 293
Ophthalmic Medical Assisting, Short-Term Certificate .......... 294
Paralegal Studies, Associate of Applied Business .................. 295
Paralegal Studies, Post-Degree Professional Certificate .......... 296
Pharmacy Technology, Associate of Applied Science .............. 297
Pharmacy Technician, Certificate of Proficiency .................. 298
Physical Therapist Assisting Technology, Associate of Applied Science ................................................................. 299
Physician Assistant, Post-Degree Professional Certificate ..... 301
Plant Science and Landscape Technology, Associate of Applied Science ................................................................. 302
Garden Center, Short-Term Certificate ............................... 303
Landscape Contracting, Short-Term Certificate .................... 304
Landscape Design, Short-Term Certificate ........................... 305
Landscape Horticulture, Short-Term Certificate ................... 305
Plant Science and Landscape Technology (Landscape Technician), Certificate of Proficiency ........................................ 306
Polysomnography (Sleep Disorders), Certificate of Proficiency ... 307
Purchasing and Supply Management, Associate of Applied Business ................................................................. 308
Purchasing and Supply Management, Post-Degree Professional Certificate ................................................................. 309
Radiography, Associate of Applied Science ....................... 310
Mammography, Short-Term Certificate ............................... 313
Recording Arts and Technology, Associate of Applied Science .... 314
Respiratory Care, Associate of Applied Science .......................... 315
Sport and Exercise Studies, Associate of Applied Science ........ 317
Fitness Specialist, Certificate of Proficiency ........................... 318
Sterile Processing and Distribution Technology, Certificate of Proficiency ................................................................. 319
Surgical Technology, Associate of Applied Science ............. 320
Veterinary Technology, Associate of Applied Science ............ 322
Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business .......... 323
Visual Communication & Design (Graphic Design), Certificate of Proficiency ................................................................. 324
Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business .................. 325
3D Animation, Short-Term Certificate ............................... 326
3D Design, Short-Term Certificate ................................. 327
Visual Communication & Design with a Concentration in Photography, Associate of Applied Business .................. 327
Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business ........ 329
Game Design, Short-Term Certificate ............................... 330
Web Design & Development, Certificate of Proficiency .......... 331
Professional Development ................................................. 333
Budgeting Certificate ................................................. 333
Certified Associate in Project Management (CAPM) ............ 333
Certified Manager of Apartments .................................... 334
Cisco Network Support Technician .................................. 334
Cisco Technical Training Institute ..................................... 335
Cleveland Codes Tri-C Software Developers Academy .......... 336
Community Health Worker ........................................... 337
Comprehensive Certified Professional Medical Coder (CPC) .... 337
Comprehensive Professional Medical Coding – Online ........ 338
CompTIA Certified Computer Support Specialist ............... 339
Enrolled Agent ........................................................... 339
Event Planning ......................................................... 340
Exemplar Global Certified/Plexus ISO 9001:2015 Lead Auditor Training ................................................................. 341
Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditor Training ........................................ 341
Frontline Manager Certificate Program ............................... 342
Home Inspector Training ........................................... 343
Lean Six Sigma for Health Care: Yellow Belt and Green Belt .... 343
Lean Six Sigma: Yellow Belt, Green Belt, Black Belt ................ 344
<table>
<thead>
<tr>
<th>Course Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LeanOhio Boot Camp: Transforming the Public Sector</td>
<td>345</td>
</tr>
<tr>
<td>Microsoft Administrative Professional (MAP) Academy</td>
<td>345</td>
</tr>
<tr>
<td>Patient Access Specialist</td>
<td>346</td>
</tr>
<tr>
<td>Patient-Care Nursing Assistant</td>
<td>346</td>
</tr>
<tr>
<td>Plexus AS9100D Understanding and Internal Auditing (Aerospace)</td>
<td>347</td>
</tr>
<tr>
<td>Plexus Understanding and Internal Auditing for ISO 14001:2015</td>
<td>347</td>
</tr>
<tr>
<td>Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditor</td>
<td>348</td>
</tr>
<tr>
<td>State-Tested Nurse Aide</td>
<td>349</td>
</tr>
<tr>
<td>State-Tested Nurse Aide – Accelerated Program</td>
<td>349</td>
</tr>
<tr>
<td>Workforce Training</td>
<td>351</td>
</tr>
<tr>
<td>Advanced EMS Training</td>
<td>351</td>
</tr>
<tr>
<td>Basic Police Academy</td>
<td>351</td>
</tr>
<tr>
<td>CDL-B to CDL-A Bridge Course</td>
<td>352</td>
</tr>
<tr>
<td>Class A CDL Truck Driver Training</td>
<td>352</td>
</tr>
<tr>
<td>Class A or B CDL Refresher Course</td>
<td>353</td>
</tr>
<tr>
<td>Class B CDL Accelerated Training</td>
<td>353</td>
</tr>
<tr>
<td>CNC Technology Certificate Program</td>
<td>354</td>
</tr>
<tr>
<td>Computer Aided Design (CAD)</td>
<td>354</td>
</tr>
<tr>
<td>Electrical Technician Certificate of Completion</td>
<td>355</td>
</tr>
<tr>
<td>Facility Technician</td>
<td>355</td>
</tr>
<tr>
<td>Fast-Track Welding Certificate Program</td>
<td>355</td>
</tr>
<tr>
<td>Fire Training Academy</td>
<td>356</td>
</tr>
<tr>
<td>FirstEnergy Power Systems Institute PSI, Associate of Technical Study</td>
<td>356</td>
</tr>
<tr>
<td>Manufacturing Technical Readiness Program</td>
<td>357</td>
</tr>
<tr>
<td>Nondestructive Testing (NDT) and Quality Assurance (QA)</td>
<td>357</td>
</tr>
<tr>
<td>Passenger and School Bus Training</td>
<td>358</td>
</tr>
<tr>
<td>Powered Industrial Truck/Forklift Operator Training</td>
<td>358</td>
</tr>
<tr>
<td>Precision Machining Technology 3 (PMT 3)</td>
<td>359</td>
</tr>
<tr>
<td>Private Security Academy</td>
<td>359</td>
</tr>
<tr>
<td>Right Skills Now CNC Operations Program</td>
<td>359</td>
</tr>
<tr>
<td>Steelworkers for the Future</td>
<td>360</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>361</td>
</tr>
<tr>
<td>10K Small Businesses (ZSBI)</td>
<td>363</td>
</tr>
<tr>
<td>A+ Computer Maintenance (ZACM)</td>
<td>363</td>
</tr>
<tr>
<td>Accounting (ACCT)</td>
<td>363</td>
</tr>
<tr>
<td>Adult Diploma Program (ZADP)</td>
<td>365</td>
</tr>
<tr>
<td>Advanced Law Enforcement (ZLAW)</td>
<td>366</td>
</tr>
<tr>
<td>Advanced Tmg Corrections (ZCOR)</td>
<td>369</td>
</tr>
<tr>
<td>American Sign Language (ASL)</td>
<td>369</td>
</tr>
<tr>
<td>Anthropology (ANTH)</td>
<td>370</td>
</tr>
<tr>
<td>Applied Industrial Technology (AIT)</td>
<td>371</td>
</tr>
<tr>
<td>Applied Industrial Technology (Bricklaying) (ATBL)</td>
<td>372</td>
</tr>
<tr>
<td>Applied Industrial Technology (Carpentry) (ATCT)</td>
<td>374</td>
</tr>
<tr>
<td>Applied Industrial Technology (Cement Masonry) (ATCM)</td>
<td>376</td>
</tr>
<tr>
<td>Applied Industrial Technology (Communication Transport Systems) (ATCW)</td>
<td>377</td>
</tr>
<tr>
<td>Applied Industrial Technology (Construction Tending and Hazardous Material Abatement) (ATLB)</td>
<td>379</td>
</tr>
<tr>
<td>Applied Industrial Technology (Drywall Finishing) (ATDF)</td>
<td>383</td>
</tr>
<tr>
<td>Applied Industrial Technology (Electrical Construction) (ATEL)</td>
<td>383</td>
</tr>
<tr>
<td>Applied Industrial Technology (Floorlaying) (ATFL)</td>
<td>384</td>
</tr>
<tr>
<td>Applied Industrial Technology (Glazing) (ATGL)</td>
<td>386</td>
</tr>
<tr>
<td>Applied Industrial Technology (Ironworking) (ATIW)</td>
<td>386</td>
</tr>
<tr>
<td>Applied Industrial Technology (Lifting Technologies) (ATLT)</td>
<td>388</td>
</tr>
<tr>
<td>Applied Industrial Technology (Manufacturing Technology)</td>
<td>391</td>
</tr>
<tr>
<td>Applied Industrial Technology (Millwrighting) (ATMW)</td>
<td>393</td>
</tr>
<tr>
<td>Applied Industrial Technology (Operating Engineers) (ATOE)</td>
<td>395</td>
</tr>
<tr>
<td>Applied Industrial Technology (Painting) (ATPT)</td>
<td>396</td>
</tr>
<tr>
<td>Applied Industrial Technology (Pile Driving) (ATPD)</td>
<td>397</td>
</tr>
<tr>
<td>Applied Industrial Technology (Pipefitters) (ATPF)</td>
<td>398</td>
</tr>
<tr>
<td>Applied Industrial Technology (Plumbers) (ATPL)</td>
<td>401</td>
</tr>
<tr>
<td>Applied Industrial Technology (Sheet Metal Working) (ATSM)</td>
<td>404</td>
</tr>
<tr>
<td>Applied Manufacturing Techs (ZAMT)</td>
<td>406</td>
</tr>
<tr>
<td>Art (ART)</td>
<td>408</td>
</tr>
<tr>
<td>AutoCAD (ZCAD)</td>
<td>412</td>
</tr>
<tr>
<td>Automotive Technology (AUTO)</td>
<td>413</td>
</tr>
<tr>
<td>Biology (BIO)</td>
<td>415</td>
</tr>
<tr>
<td>Business Administration (BADM)</td>
<td>418</td>
</tr>
<tr>
<td>Business Math &amp; Tech (ZBMT)</td>
<td>422</td>
</tr>
<tr>
<td>Business Technology (BT)</td>
<td>422</td>
</tr>
<tr>
<td>Captioning and Court Reporting (C&amp;CR)</td>
<td>423</td>
</tr>
<tr>
<td>Chemistry (CHEM)</td>
<td>426</td>
</tr>
<tr>
<td>Chinese (CHIN)</td>
<td>429</td>
</tr>
<tr>
<td>Cisco (ZCIS)</td>
<td>429</td>
</tr>
<tr>
<td>Cisco Academy (ZCIA)</td>
<td>431</td>
</tr>
<tr>
<td>College Student Resources (ZGEN)</td>
<td>431</td>
</tr>
<tr>
<td>Computer Numerical Control (ZCNC)</td>
<td>431</td>
</tr>
<tr>
<td>Construction Engineering Technology (CNST)</td>
<td>432</td>
</tr>
<tr>
<td>Criminal Justice (CJ)</td>
<td>434</td>
</tr>
<tr>
<td>Dance (DANC)</td>
<td>437</td>
</tr>
<tr>
<td>Data Analytics (ZDTM)</td>
<td>439</td>
</tr>
<tr>
<td>Course</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Deaf Interpretive Services (DIS)</td>
<td>439</td>
</tr>
<tr>
<td>Dental Hygiene (DENT)</td>
<td>441</td>
</tr>
<tr>
<td>Diagnostic Medical Sonography (DMS)</td>
<td>443</td>
</tr>
<tr>
<td>Dietetic Technology (DIET)</td>
<td>447</td>
</tr>
<tr>
<td>EMS Training (ZEMS)</td>
<td>449</td>
</tr>
<tr>
<td>Early Childhood Education (ECED)</td>
<td>449</td>
</tr>
<tr>
<td>Earth Science (ESCI)</td>
<td>452</td>
</tr>
<tr>
<td>Economics (ECON)</td>
<td>453</td>
</tr>
<tr>
<td>Education (EDUC)</td>
<td>455</td>
</tr>
<tr>
<td>Electrical/Electronic Engineering</td>
<td>455</td>
</tr>
<tr>
<td>Engineering Technology (EET)</td>
<td></td>
</tr>
<tr>
<td>Emergency Medical Technology (EMT)</td>
<td>463</td>
</tr>
<tr>
<td>English (ENG)</td>
<td>465</td>
</tr>
<tr>
<td>English As A Second Language (ESL)</td>
<td>468</td>
</tr>
<tr>
<td>Environment (ZENV)</td>
<td>470</td>
</tr>
<tr>
<td>Environmental, Health And Safety</td>
<td>472</td>
</tr>
<tr>
<td>Technology (EHST)</td>
<td></td>
</tr>
<tr>
<td>Film (ZFLM)</td>
<td>474</td>
</tr>
<tr>
<td>Finance (ZFIN)</td>
<td>474</td>
</tr>
<tr>
<td>Financial Management (FIN)</td>
<td>475</td>
</tr>
<tr>
<td>Fire Technology (FIRE)</td>
<td>475</td>
</tr>
<tr>
<td>Fire-Advanced Training (ZEFR)</td>
<td>476</td>
</tr>
<tr>
<td>French (FREN)</td>
<td>478</td>
</tr>
<tr>
<td>General Studies (GEN)</td>
<td>479</td>
</tr>
<tr>
<td>Geography (GEOG)</td>
<td>480</td>
</tr>
<tr>
<td>German (GER)</td>
<td>481</td>
</tr>
<tr>
<td>Health (HLTH)</td>
<td>482</td>
</tr>
<tr>
<td>Health Information Management</td>
<td>482</td>
</tr>
<tr>
<td>Technology (HIM)</td>
<td></td>
</tr>
<tr>
<td>Health Information Technology (ZHT)</td>
<td>486</td>
</tr>
<tr>
<td>Health Professional Center (ZHTH)</td>
<td>486</td>
</tr>
<tr>
<td>Health Technology (ZHTC)</td>
<td>487</td>
</tr>
<tr>
<td>History (HIST)</td>
<td>487</td>
</tr>
<tr>
<td>Hospitality Management (HOSP)</td>
<td>491</td>
</tr>
<tr>
<td>Human Development (ZHDI)</td>
<td>495</td>
</tr>
<tr>
<td>Human Services (HS)</td>
<td>496</td>
</tr>
<tr>
<td>Humanities (HUM)</td>
<td>498</td>
</tr>
<tr>
<td>ISO Training (ZISO)</td>
<td>499</td>
</tr>
<tr>
<td>IT Business/Management (ZMGT)</td>
<td>501</td>
</tr>
<tr>
<td>IT Design (ZDES)</td>
<td>502</td>
</tr>
<tr>
<td>IT Networking (ZNET)</td>
<td>502</td>
</tr>
<tr>
<td>IT Programming (ZPRG)</td>
<td>502</td>
</tr>
<tr>
<td>IT Security (ZSCR)</td>
<td>502</td>
</tr>
<tr>
<td>Industrial Maintenance (ZINM)</td>
<td>503</td>
</tr>
<tr>
<td>Information Technology (IT)</td>
<td>503</td>
</tr>
<tr>
<td>Information Technology - Networking</td>
<td>503</td>
</tr>
<tr>
<td>Software (ITNT)</td>
<td></td>
</tr>
<tr>
<td>Integrated Systems Engineering</td>
<td>507</td>
</tr>
<tr>
<td>Technology (ISET)</td>
<td></td>
</tr>
<tr>
<td>Interior Design (INTD)</td>
<td>509</td>
</tr>
<tr>
<td>Internet-Other (ZINT)</td>
<td>511</td>
</tr>
<tr>
<td>Italian (ITAL)</td>
<td>511</td>
</tr>
<tr>
<td>Japanese (JAPN)</td>
<td>512</td>
</tr>
<tr>
<td>Journalism and Mass Communication</td>
<td>513</td>
</tr>
<tr>
<td>Technology (JMC)</td>
<td></td>
</tr>
<tr>
<td>Knowledge Management (ZKNO)</td>
<td>515</td>
</tr>
<tr>
<td>Leadership (ZLDR)</td>
<td>515</td>
</tr>
<tr>
<td>Lean (ZLEN)</td>
<td>523</td>
</tr>
<tr>
<td>Lean Six Sigma (ZLSS)</td>
<td>523</td>
</tr>
<tr>
<td>Logistics and Distribution (ZLDA)</td>
<td>527</td>
</tr>
<tr>
<td>MS Cert Prof Sys Engineer (ZMCP)</td>
<td>527</td>
</tr>
<tr>
<td>Marketing (MARK)</td>
<td>527</td>
</tr>
<tr>
<td>Massage Therapy (MT)</td>
<td>528</td>
</tr>
<tr>
<td>Mathematics (MATH)</td>
<td>531</td>
</tr>
<tr>
<td>Mechanical Engineering/Manufacturing</td>
<td>536</td>
</tr>
<tr>
<td>Industrial Technology (MET)</td>
<td></td>
</tr>
<tr>
<td>Media Arts and Filmmaking (MARS)</td>
<td>540</td>
</tr>
<tr>
<td>Medical Assisting (MA)</td>
<td>542</td>
</tr>
<tr>
<td>Medical Laboratory Technology (MLT)</td>
<td>545</td>
</tr>
<tr>
<td>Microsoft Application (ZMSA)</td>
<td>546</td>
</tr>
<tr>
<td>Music (MUS)</td>
<td>548</td>
</tr>
<tr>
<td>Non-Destructive Testing (ZNDT)</td>
<td>554</td>
</tr>
<tr>
<td>Nuclear Medicine Technology (NMED)</td>
<td>555</td>
</tr>
<tr>
<td>Nurse Aide Training (ZMED)</td>
<td>558</td>
</tr>
<tr>
<td>Nursing (NURS)</td>
<td>558</td>
</tr>
<tr>
<td>Occupational Therapy Assisting</td>
<td>558</td>
</tr>
<tr>
<td>Technology (OTAT)</td>
<td></td>
</tr>
<tr>
<td>Online Professional Development</td>
<td>559</td>
</tr>
<tr>
<td>Courses (ZONL)</td>
<td></td>
</tr>
<tr>
<td>Operating Systems/Maintenance (ZOPS)</td>
<td>560</td>
</tr>
<tr>
<td>Optical Technology (OPT)</td>
<td>571</td>
</tr>
<tr>
<td>Organizational Strategy &amp; Assessment</td>
<td>573</td>
</tr>
<tr>
<td>(ZSTA)</td>
<td></td>
</tr>
<tr>
<td>Paralegal Studies (PL)</td>
<td>573</td>
</tr>
<tr>
<td>Performance-Based Programs (ZPBP)</td>
<td>576</td>
</tr>
<tr>
<td>Pharmacy Technology (PHM)</td>
<td>577</td>
</tr>
<tr>
<td>Philosophy (PHIL)</td>
<td>578</td>
</tr>
<tr>
<td>Physical Education (PE)</td>
<td>580</td>
</tr>
<tr>
<td>Physical Science (PSCI)</td>
<td>585</td>
</tr>
<tr>
<td>Physical Therapist Assisting</td>
<td>586</td>
</tr>
<tr>
<td>Technology (PTAT)</td>
<td></td>
</tr>
<tr>
<td>Physician Assistant (PA)</td>
<td>588</td>
</tr>
<tr>
<td>Physics (PHYS)</td>
<td>590</td>
</tr>
</tbody>
</table>
Campuses and Corporate College Sites

Eastern Campus
4250 Richmond Road
Highland Hills, OH 44122
216-987-6000

Metropolitan Campus
2900 Community College Avenue
Cleveland, OH 44115
216-987-6000

Western Campus
11000 Pleasant Valley Road
Parma, OH 44130
216-987-6000

Westshore Campus
31001 Clemens Road
Westlake, OH 44145
216-987-6000

Advanced Technology Training Center
3409 Woodland Avenue
Cleveland, OH 44115
216-987-6000

Brunswick University Center
3605 Center Road
Brunswick, OH 44212
866-933-5182

Corporate College East
4400 Richmond Road
Warrensville Heights, OH 44128
216-987-2800

Corporate College West
25425 Center Ridge Road
Westlake, OH 44145
216-987-6000

Hospitality Management Center
At Public Square, Cleveland
180 Euclid Avenue
Cleveland, OH 44113
866-933-5181

Board of Trustees & Mission, Vision & Values

Board of Trustees
Victor A. Ruiz
Chair
Jerry L. Kelsheimer
Vice Chair
Michael Canty
Helen Forbes Fields
J. David Heller
The Rev. Cory Jenkins
Geralyn Presti
Andrew E. Randall
Rachel Von Hendrix

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.
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. Offering more than 1,000 credit and noncredit course options in more than 190 degree and certificate programs, our College is preparing students to thrive in the new global economy. We deliver programs in most career fields, including health care, green technology, culinary arts, engineering, bioscience, business, public service, liberal arts, transportation, music, manufacturing, and media production— to name just a few. Transfer and dual enrollment agreements offer seamless transition to a variety of universities upon completion of your degree, while short-term certificates and technical training provide the education necessary to compete for cutting-edge jobs.

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. 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 & 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.

Important Phone Numbers

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

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

<table>
<thead>
<tr>
<th>Service</th>
<th>Eastern Campus</th>
<th>Metropolitan Campus</th>
<th>Western Campus</th>
<th>Westshore Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjunct Services</td>
<td>216-987-2226</td>
<td>216-987-4225</td>
<td>216-987-5227</td>
<td>216-987-5588</td>
</tr>
<tr>
<td>Campus</td>
<td>216-987-4325</td>
<td>216-987-4325</td>
<td>216-987-4325</td>
<td>216-987-4325</td>
</tr>
<tr>
<td>Police and Security</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Services</td>
<td>216-987-2567</td>
<td>216-987-4913</td>
<td>216-987-5575</td>
<td>216-987-5889</td>
</tr>
<tr>
<td>College Information &amp; Enrollment Support Center</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>Counseling</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>Enrollment Center</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>My Tri-C Card Office</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>Program 60</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>Student Financial Aid &amp; Scholarships</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
<td>216-987-6000</td>
</tr>
<tr>
<td>Workforce, Community and Economic Development Division</td>
<td>216-987-3075</td>
<td>Registration</td>
<td>216-987-3075</td>
<td>General Information</td>
</tr>
</tbody>
</table>

Cuyahoga Community College Catalog 2017-2018
<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate College® East</td>
<td>216-987-3075 Registration, 216-987-2800 General Information</td>
</tr>
<tr>
<td>Corporate College® West</td>
<td>216-987-3075 Registration, 216-987-2800 General Information</td>
</tr>
</tbody>
</table>
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, the Eastern Campus serves students who want to complete their first two years of college in a high quality educational environment as well as those seeking a direct-to-job educational experience. The Eastern Campus offers Associate of Arts and Associate of Science degrees for those wishing to transfer to a four-year institution. The campus has articulation agreements with more than 40 four-year schools, including on-site bachelor’s degrees through Hiram College.

Located off I-271 in Highland Hills, the campus features four buildings with state-of-the-art classrooms and laboratories. 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 Eastern Campus is also home to 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 features 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 enjoy a healthy lifestyle with a gymnasium, indoor and outdoor tracks, natatorium, dance studio, fitness center and massage therapy student clinic.

The heart of the hospitality program is the Hospitality Management Center, located across from Public Square in downtown Cleveland. This location, supported by faculty from the Metropolitan Campus, is in the center of the culinary and hotel district, within walking distance of nationally recognized chef-run restaurants and expanding lodging and entertainment businesses. The program also features a second student-run restaurant, the Tri-C Hospitality Management Center Pop-Up Bistro, located at 180 Euclid Ave.

**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)

**Campus Map:** [http://www.tri-c.edu/campuses-and-locations/eastern/images/eastmap.jpg](http://www.tri-c.edu/campuses-and-locations/eastern/images/eastmap.jpg)

### 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 careers labs. Students learn first-hand in labs similar to those in the work environment. Labs exist for nursing, information technology, manufacturing and recording arts.

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 filmmaking, 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.

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.

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. The Dental Hygiene Clinic provides low-cost preventive dental care to community residents.

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 Transfer Connection Center opened in 2013 to help students navigate the process from degree completion at Tri-C to a successful transfer 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 career 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.

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

Map: http://www.tri-c.edu/campuses-and-locations/western-campus/images/westmap.jpg

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 at the existing Corporate College West facility, Tri-C provides additional opportunities 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 campus also offers a Technology Learning Center, library, five science labs and four health careers labs, including a human patient simulator. The campus has a strong commitment to sustainability as noted by the LEED Gold status of its initial facility.

The Westshore Campus and Corporate College West sites are easily accessible from Interstates 90 and 480 and are located approximately five miles from each other in the city of Westlake.


Map: http://www.tri-c.edu/campuses-and-locations/westshore-campus/images/westshoremap.jpg

Community and Continuing Education

Tri-C offers a wide range of programs and courses spanning a broad base of career development, personal enrichment and continuing education topics for all ages. The College seeks to promote individual development and improve the overall quality of life through multicultural lifelong learning courses.

Audiences We Serve

Youth

Young people can experience college life with our varied line-up of courses and summer camps. These opportunities provide a fun and challenging learning environment for young students that complement their current studies and enable them to easily move into adulthood.

Learn more about our youth (http://www.tri-c.edu/youth-programs) programs (http://www.tri-c.edu/youth-programs).

Personal Enrichment

Tri-C encourages community members of all ages to participate in events and classes that enhance their quality of life while building new skills. These hands-on learning experiences seek to show the ease of acquiring a new skill in a casual and fun environment. Learn more about our personal enrichment programs (http://www.tri-c.edu/personal-enrichment).

Adult EduCAtion

Taking a cue from the community we serve, our lineup of courses is continually updated based upon suggestions from residents and members of the business community.

All courses offer valuable information to learners of all ages looking to enhance their current skills or quality of life. Learn more about our adult education programs (http://www.tri-c.edu/encore-senior-adult-programs).

55+ Adult Education

For more than 40 years, Tri-C’s Encore program has been a premier provider of senior adult education opportunities for individuals 55 and older. Based on the concept of providing senior adult education programs within an academic environment, the program holds to an education standard that recognizes the intellectual interests of older students. Tri-C offers a unique approach to senior adult education, with on- and off-campus learning experiences. The possibilities are endless through Encore Campus and the Neighborhood Scholars programs.

Encore Campus Fridays

Encore Campus is a leading senior adult education program for individuals 55 and older in Greater Cleveland. Students choose from a vast and diverse set of changing classes each session. Outstanding instructors, including current Tri-C staff, retired educators, and professionals crossing the span of education, the arts, business, and health and wellness, teach a variety of courses.

Neighborhood Scholars

Tri-C’s Neighborhood Scholars program, held in cooperation with community partners, brings its senior adult education program to various locations throughout Greater Cleveland. Our talented instructors offer classes traditionally provided on the College campuses.

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.

## Workforce Solutions

### 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.

### 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.

### 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.

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

### Transportation center

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

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.

Customized Training
Corporate College understands unique business challenges and provides customized solutions to meet 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 groups at the company facility or at 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. Courses and programs are in line with 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 and Manager of Apartments
- Customer Service

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

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 216-987-3483 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
Accreditation and Institutional Memberships

are approved or accredited by appropriate specialized associations or agencies.

Some of these memberships are:

- Accrediting Commission for Education in Nursing, Inc. (ACEN)
- Accreditation Review Committee on Education-Physician Assistant
- American Association for Paralegal Education (AAFPE)
- American Association for Women in Community Colleges (AAWCC)
- American Association of Collegiate Registrars and Admissions Officers (AACRAO)
- American Association for Paralegal Education (AAFPE)
- American Association of Community Colleges (AACC)
- American Association of University Women (AAUW)
- American Bar Association
- Accreditation Board for Engineering and Technology (ABET)
- American Council on Education (ACE)
- American Culinary Federation
- American Dietetic Association
- American Dental Educators Association
- American Health Information Management Association (AHIMA)
- American Occupational Therapy Association (AOTA)
- American Society of Health-System Pharmacists (ASHSP)
- American Student Association of Community Colleges (ASACC)
- American Society of Mechanical Engineers
- American Technical Education Association (ATEA)
- Association of Community College Trustees (ACCT)
- Association of Governing Boards of Universities & Colleges (AGB)
- Association of Performing Arts Presenters (APAP)
- Association of Physical Plant Administrators (APPAs)
- Association of Veterinary Technician Educators (AVTE)
- College Entrance Examination Board
- Commission on Accreditation for Respiratory Care
- Committee on Accreditation for Education in Neurodiagnostic Technology
- Commission of Accreditation of Allied Health Education Programs (CAAAHP)
- Community College Humanities Association
- Community Colleges for International Development (CICID)
- Council for Adult and Experiential Learning (CAEL)
- Council for Advancement & Support of Education (CASE)
- Council for Higher Education Accreditation (CHEA)
- Council for Opportunity in Education (COE)
- Council of North Central Two-Year Colleges (CNCTYC)
- Employer Resource Council (ERC)
- 50 Club of Cleveland, The
- Fund for Our Economic Future (Cleveland Foundation)
- Government Finance Officers Association
- Greater Cleveland Partnership, The
- Higher Learning Commission, The
- Joint Review Committee on Education in Radiologic Technology (JRCERT)
- Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDMSS)
- Joint Review Committee on Education Programs for EMT-Paramedics
- League for Innovation in the Community College
- Midwest Institute for International/Intercultural Education (MIIE)
- National Alliance of Community and Technical Colleges
- National Alliance of Concurrent Enrollment Partnership
- National Association for Community College Entrepreneurship, Inc.
- National Association for Developmental Education (NADE)
- National Association for the Education of Young Children (NAEYC)
- National Association of College & University Business Officers (NACUBO)
- National Association of Community College Teacher Education Program (NACCTEP)
- National Collegiate Honors Council
- National Council on Black American Affairs
- National Guild of Community Schools of the Arts
- National Junior College Athletic Association (NJCAA)
- National Network of Health Careers
- National Verbatim Reporters Association (NVRA)
- Northeast Ohio Council on Higher Education (NOCHE)
- Ohio Association of Community Colleges (OACC)
- Ohio Campus Compact (OCC)
- Ohio College Testing Association
- Ohio Community College Athletic Conference (OCCAC)
- Ohio Fuel Cell Coalition
- Physician Assistant Education Association (PAEA)
- President’s Round Table
- RC-2020
- Second Nature, Inc.
- Western Interstate Commission for Higher Education
### ACADEMIC INFORMATION

#### 2017-2018 Academic Calendar

**Fall Semester 2017**

<table>
<thead>
<tr>
<th>Session</th>
<th>Term Duration</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Term</td>
<td>16-week</td>
<td>August 28, 2017</td>
<td>December 17, 2017</td>
</tr>
<tr>
<td>Session A</td>
<td>8-Week</td>
<td>August 28, 2017</td>
<td>October 22, 2017</td>
</tr>
<tr>
<td>Session B</td>
<td>8-Week</td>
<td>October 23, 2017</td>
<td>December 17, 2017</td>
</tr>
<tr>
<td>Session O</td>
<td>14-Week</td>
<td>September 11, 2017</td>
<td>December 17, 2017</td>
</tr>
</tbody>
</table>

**Spring Semester 2018**

<table>
<thead>
<tr>
<th>Session</th>
<th>Term Duration</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Term</td>
<td>16-Week</td>
<td>January 16, 2018</td>
<td>May 13, 2018</td>
</tr>
<tr>
<td>Session A</td>
<td>8-Week</td>
<td>January 16, 2018</td>
<td>March 11, 2018</td>
</tr>
<tr>
<td>Session B</td>
<td>8-Week</td>
<td>March 19, 2018</td>
<td>May 13, 2018</td>
</tr>
<tr>
<td>Session O</td>
<td>14-Week</td>
<td>January 29, 2018</td>
<td>May 13, 2018</td>
</tr>
</tbody>
</table>

**Summer Session 2018**

<table>
<thead>
<tr>
<th>Session</th>
<th>Term Duration</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Term</td>
<td>10-Week</td>
<td>May 29, 2018</td>
<td>August 5, 2018</td>
</tr>
<tr>
<td>Session J</td>
<td>5-Week</td>
<td>May 29, 2018</td>
<td>July 1, 2018</td>
</tr>
<tr>
<td>Session K</td>
<td>5-Week</td>
<td>July 2, 2018</td>
<td>August 5, 2018</td>
</tr>
<tr>
<td>Session L</td>
<td>8-Week</td>
<td>June 11, 2018</td>
<td>August 5, 2018</td>
</tr>
</tbody>
</table>

**Fall Semester 2017**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 10, 2017-April 16, 2017</td>
<td>Monday-Sunday Priority Registration</td>
</tr>
<tr>
<td>April 17, 2017-August 27, 2017</td>
<td>Monday-Sunday Registration for Fall Semester 2017</td>
</tr>
<tr>
<td>August 28, 2017</td>
<td>Monday Fall Semester Full Term (16-Week) and Session A (8-Week) Begin</td>
</tr>
<tr>
<td>September 4, 2017</td>
<td>Monday Labor Day - College Closed - No Classes Scheduled</td>
</tr>
<tr>
<td>September 11, 2017</td>
<td>Monday Session O (14-week) Begins</td>
</tr>
<tr>
<td>October 8, 2017</td>
<td>Sunday Last Day for students to submit incomplete work from Spring Semester 2017 and Summer Semester 2017</td>
</tr>
</tbody>
</table>

**Spring Semester 2018**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 9, 2017-Oct 15, 2017</td>
<td>Monday-Sunday Priority Registration</td>
</tr>
<tr>
<td>October 23, 2017-January 15, 2018</td>
<td>Monday-Monday Registration for Spring Semester 2018</td>
</tr>
<tr>
<td>January 15, 2018</td>
<td>Monday Martin Luther King Jr. Day - College Closed - No Classes Scheduled</td>
</tr>
<tr>
<td>January 16, 2018</td>
<td>Tuesday Spring Semester Full Term (16-week) and Session A (8-Week) Begin</td>
</tr>
<tr>
<td>January 29, 2018</td>
<td>Monday Session O (14-week) Begins</td>
</tr>
<tr>
<td>February 25, 2018</td>
<td>Sunday Deadline for students to submit incomplete work for Fall Semester 2017</td>
</tr>
</tbody>
</table>

1 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 above are subject to change.
### March 2, 2018  
**Friday**  
Incomplete grades for Fall 2017 Semester rolled to ‘F’ grades

### March 11, 2018  
**Sunday**  
Session A Ends

### March 12, 2018-March 18, 2018  
**Monday-Sunday**  
Spring Break - No Classes Scheduled

### March 19, 2018  
**Monday**  
Session B (8-week) Begins

### March 20, 2018  
**Tuesday**  
Session A Final Grades Due

### April 6, 2018  
**Friday**  
Deadline to Petition for Graduation for Spring and Summer 2018

### April 13, 2018  
**Friday**  
Last Day to Withdraw from Full Term (16 Week) Course with a ‘W’ Grade ¹

### May 7, 2018-May 13, 2018  
**Monday-Sunday**  
Final Exam Week – Full Term

### May 13, 2018  
**Sunday**  
Spring Semester Full Term, Session B and Session O End

### May 15, 2018  
**Tuesday**  
Final Grades Due - Full Term, Session B and Session O

### May 17, 2018  
**Thursday**  
Spring and Summer 2018 Commencement

1 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 above are subject to change.

### Summer Session 2018

| March 19, 2018–May 28, 2018 | Monday-Monday | Registration for Summer Session 2018 |
| May 28, 2018 | Monday | Memorial Day - College Closed |
| May 29, 2018 | Tuesday | Summer Session Full Term (10-week) and Session J (5-week) Begin |
| June 11, 2018 | Monday | Session L (8-week) Begins |
| July 1, 2018 | Sunday | Session J Ends |
| July 2, 2018 | Monday | Session K (5-week) Begins |
| July 3, 2018 | Tuesday | Session J Grades Due |
| July 4, 2018 | Wednesday | Independence Day Observation - College Closed - No Classes Scheduled |
| July 20, 2018 | Friday | Last Day to Withdraw from Full Term (10-Week) Course with a ‘W’ Grade ¹ |

1 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 above are subject to change.

### 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 (https://transfercredit.ohio.gov/ap/3?1579363519374) 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.

### Credit for Prior Learning

Prior Learning is defined as academic credit awarded to registered students upon demonstration of knowledge equivalent to that gained through a college course. A student must be currently enrolled in a minimum of 12 semester credit hours, or have completed a minimum of 20 semester credit hours, at Tri-C and be in good standing (maintain a minimum 2.0 GPA) before applying for Prior Learning credit. Students may obtain a maximum of 30 semester credits through one, or a combination, of the recognized options for Prior Learning. Awarded Prior Learning credit will not affect a student’s grade point average or quality
Prior Learning Options

Recognized options under which Prior Learning may be awarded include:

**College Level Examination Program (CLEP)**
The CLEP includes general and subject-specific exams in a variety of areas. Tri-C will award comparable academic credit to students for successful completion of the CLEP general and subject area examinations. Learn more about Tri-C’s CLEP equivalencies. Official transcripts must be submitted to the Office of the Registrar with a letter requesting the posting of CLEP credit. Learn more about testing sites and exam options.

**DANTES Subject Standardized Tests**
DANTES is a group of standardized tests originally developed for the voluntary education programs of the U.S. 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 include:

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

  - **Military Assurance Guides (MTAG)** The Ohio Department of Higher Education (ODHE) and Tri-C 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 Articulation and Transfer Network 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. Learn more about ACE’s “Transfer Guide: Understanding Your Military Transcript and ACE Credit Recommendations”.

**Standardized Training and Certification Programs** Prior Learning credit can also be awarded for numerous standard training and certification programs. Learn more about ACE’s “National Guide to College Credit for Workforce Training.”

Credit by Exam (CBE)
There are many courses offered at Tri-C for which Prior Learning credit may be awarded by a student’s taking and passing a comprehensive exam on the course subject. CBE for a particular course may be taken only once. For more information, schedule an appointment with a counselor for an overview of CBE.

**Bypass Credit**
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- and corporate education where requisite knowledge, skills, and competencies are documented. For more information, schedule an appointment with a counselor for an overview of the Bypass Credit process.

**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. Program applications and registration information are available in the Enrollment Center on each campus. Cross-registration is not available during the summer session.

**Online and Blended Learning**
As an alternative to the traditional classroom environment, Tri-C 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 and cost per credit are the same as on-campus courses.

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

For assistance with online learning technology, call: 216-987-4257.

**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.

**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 www.tri-c.edu/online-learning/technical-requirements.html (http://www.tri-c.edu/online-learning/technical-requirements.html).

**Proctored 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 setting approved by faculty. While proctors must be approved by the instructor, some suitable proctors may include Tri-C Assessment 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. More information on proctored testing is available at www.tri-c.edu/online-learning/proctoring.html (http://www.tri-c.edu/online-learning/proctoring.html).

**Distance Learning**

**SMARTCLASS**

SmartClass 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.

• *SMARTCLASS* courses are broadcast on Tri-C’s SmartTV and video streamed on the SmartWeb site at: http://flash-server1.tri-c.edu/index.html.
• Students enrolled in *SMARTCLASS* are able to replay their courses at any time at: tricsmarttv.viebit.com.
• SmartTV is Cuyahoga Community College’s television station and is broadcast on Spectrum 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.

**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**

**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 timeframe 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.

Both part-time and full-time co-op work schedules are available and can be coordinated with students’ academic schedules.

To participate in the Cooperative Education work experience program, students 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 New Job: Tips for Success!);
• Complete and sign an experiential learning agreement;
• Enroll in the designated co-op course section by the start date.
The benefits of cooperative education include paid, hands-on experience in the field of study before graduation, the ability to earn academic credit in the major and the opportunity to network with employers. Contact the Career Center at 866-933-5180 or visit www.tri-c.edu/careerservices for more information.

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. 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: 216-987-2256 • ESS 1108
- Metropolitan Campus: 216-987-4311 • MSS 4th floor
- Western Campus: 216-987-5537 • WTLT 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. Adjunct faculty include information about their availability for student conferences and the process for requesting such meetings in their syllabi.

College Pathway Programs (CPP)
The Office of College Pathway Programs (CPP) is a component of Cuyahoga Community College’s Division of Access, Learning and Success. The unit provides services to both current and prospective students, including recruitment and enrollment growth initiatives and K-12 programming. CPP also administers the Aeronautics Education Laboratory through the MUREP Aerospace Academy, formerly the Science, Engineering, Math and Aerospace Academy (SEMAA) program. Included in the Office of CPP are Youth and Early College, Innovative and Emerging, and Adult-Focused program units. CPP provides programs and services to help with 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 CPP website at www.tri-c.edu/pathways.

Tri-C’s College Pathway 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.

Strategic partnerships with area school districts enable CPP 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.

Youth & 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 CMSD 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 postsecondary 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. Call 216-987-4196 for more information.
Educational Talent Search

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 postsecondary 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 6 through 12 are eligible to participate. CMSD students who are low-income and potential first-generation college students are targeted for participation. Educational Talent Search advisors and instructional assistants provide workshops on careers, financial aid, test preparation for OGT, PSAT, ACT, SAT and ACCUPLACER, along with individual counseling and tutoring sessions to assist students in achieving their pre-college and college entrance goals. Students also participate in college tours as well as cultural activities. Talent Search serves over 1,250 students annually. Call 216-987-6310 for more information.

High Tech Academy (HTA)

High Tech Academy is an innovative dual enrollment program in which 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, including 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 270 CMSD high school students annually. Set apart from traditional College Credit Plus, the High Tech Academy offers many enrichment components to foster achievement and 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, HTA 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 into the workforce. More than 900 students have earned college credits through HTA, with more than 50 having earned an associate degree at the same time as their high school diploma. Call 216-987-3549 for more information.

MUREP Aerospace Academy (MAA)

The Minority University Research Education Project (MUREP) Aerospace Academy, formerly known as SEMAA (Science, Engineering, Mathematics and Aerospace Academy), is an innovative national program designed to increase the participation and retention of historically underserved and underrepresented K-12 youth in the areas of science, technology, engineering and mathematics (STEM). MAA’s ultimate goal is to increase the number of students in the identified populations who enroll in STEM-related academic majors in college. Free Saturday classes during the fall, spring and summer academic sessions offer a hands-on, inquiry-based, cooperative learning environment for students to explore STEM fields. The summer session includes two weeks of STEM enrichment fields.

With a focus on aerospace and earth science, participants engage in StarLab (portable planetarium) and field trip activities. Middle and high school students engage in learning activities in the MAA Aerospace Education Laboratory, a state-of-the-art, computerized classroom that uses cutting-edge technologies to model real-world challenges in aviation, robotics and microgravity research. While students attend the academic session, parents and guardians are invited to participate in the Family Café where they can experience interactive STEM activities, lessons and presentations that support whole-family learning and help prepare students for college or technical careers. This forum encourages parents to share best practices of effective ways to support students interested in STEM fields.

Established as the first joint venture with NASA and Congress, the MAA program has grown from a single site to a national organization that serves 1,200 students annually at the Metropolitan Campus. MAA is supported by NASA MUREP Aerospace Academy, NASA Glenn Research Center, Cuyahoga Community College, Paragon TEC Inc., PPG Industries Foundation, Thomas H. White Foundation, Time Warner Cable, Fay Sharpe LLP, Chums Inc. Cleveland Chapter and VWR International. Call 216-987-6301 or visit www.tri-c.edu/murep (http://www.tri-c.edu/murep) for more information.

Upward Bound (UB)

Upward Bound is a federally funded pre-college program for high school students that helps participants develop the skills and motivation needed to succeed in postsecondary education. UB provides college, career and financial aid counseling, tutoring, field trips and test preparation for the OGT, ACT and SAT tests. Students also attend a six-week summer session, and graduating seniors attend an eight-week bridge component. UB is funded by the U.S. Department of Education. Call 216-987-4927 or visit www.tri-c.edu/trio-programs/upward-bound (http://www.tri-c.edu/trio-programs/upward-bound) for more information.

Upward Bound Math /Science (UBMS)

Upward Bound Math/Science is a federally funded pre-college program for high school students interested in science, technology, engineering, and mathematics (STEM) careers. Serving students at East Technical High School, Garrett Morgan Cleveland School of Science Academy and Lincoln-West High School, UBMS provides individualized and small-group educational services that support students in building a mastery of core content knowledge. In addition to year-round academic planning and advising, students engage in hands-on, project-based learning activities, monthly educational workshops and a six-week summer STEM academy.

UBMS provides an academically enriching and rigorous math and science curriculum year-round to prepare students for academic success in high school and college. Students receive computer and technology training along with standardized test preparation. College, career, financial literacy and scholarship assistance provide students and families with information and resources to support the pursuit of postsecondary education. Call 216-987-4956 or visit www.tri-c.edu/ubms (http://www.tri-c.edu/ubms) for more information.

Innovative and Emerging Programs

Gateway to College

Gateway to College helps high school dropouts ages 16-21 and students on the verge of dropping out to earn a high school diploma while also...
earning college credits. By providing another path to a high school diploma and the opportunity to go to college, Gateway to College is helping thousands of young people rewrite the story of their lives. Call 216-987-0244 for more information.

North Coast Tech Prep
The Tech Prep program enables high school students in grades 11 and 12 to participate in state-approved career and technical programs to earn articulated college credit upon high school graduation. The curriculum reflects real-world technical careers in high demand today. Tech Prep enables a smooth transition from high school into two-and four-year college degree programs. Call 216-987-5626 for more information.

Central State University & Historically Black Colleges and Universities Transfer Program
The Central State & HBCU Transfer Initiative is a partnership between Cuyahoga Community College and Central State University in Wilberforce, Ohio. Student participants are urged to complete their associate degree at Tri-C and move directly into their junior year at Central State 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 student participants 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 Metropolitan, Eastern, and Western Campuses through graduation and/or transfer to a four-year institution. Services include: academic and financial aid advising, career exploration, tutoring, study groups, and 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. SSS is funded by the U.S. Department of Education and Cuyahoga Community College. For more information, visit www.tri-c.edu/sss (http://www.tri-c.edu/sss) or call:

- Metropolitan Campus: 216-987-4149
- Eastern Campus: 216-987-2700
- Western Campus: 216-987-5360

Adult-Focused Programs

Adult Diploma Program
The Adult Diploma Program offers adults ages 22 and older an opportunity to earn a 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 manager at 216-987-0610 or adultdiplomaprogram@tri-c.edu.

Hispanic / Latino Engagement
The College Pathway Programs team works collaboratively with Tri-C’s Hispanic Council and Promise Academy to support and increase high school graduation and provide access to academic and workforce development programs. Call 216-987-3260 for more information.

Inter-Faith Community Service Initiative
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. Call 216-987-0496 for more information.

Promise Connection
A collaboration between Promise Academy and Cuyahoga Community College that provides opportunities for continued education and training among Promise Academy students and prepares them to enter the workforce with education and training beyond a high school diploma. Call 216-987-3260 for more information.

Educational Opportunity Center (EOC)
The Educational Opportunity Center is a federally funded program that offers free enrollment assistance to 1,200 Cuyahoga County adults annually. The program is open to individuals ages 19 and over who wish to further their education. EOC advisors provide information, workshops and services to individuals and groups. Call EOC at 216-987-6305 to schedule a meeting with an EOC advisor. Advisors assist participants with enrolling in GED classes, college, certificate or vocational training programs; offer academic and career advising; provide admissions information; and assist with federal student aid and scholarship applications. EOC also provides referrals to social service and community resources. All services are free. The EOC is funded by the U.S. Department of Education and Cuyahoga Community College. Call 216-987-6305 for more information.

Women In Transition (WIT)
Women in Transition 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. The class runs every eight weeks during the school year on all four campuses. For more information, visit www.tri-c.edu/wit (http://www.tri-c.edu/wit) or call:

- Eastern Campus: 216-987-2272
- Metropolitan Campus: 216-987-4187
- Western Campus: 216-987-5091
- Westshore Campus: 216-987-3899
Cuyahoga Community College, the Carl D. Perkins Act, Westfield Insurance Foundation, the S.K. Wellman Foundation, Peoples Bank and other entities provide funding for WIT.

Adult College Access Programs

Aspire (Formerly Adult Basic and Literacy Education)
The Aspire program offers free classes for adults who need help acquiring the skills to be successful in college, training or employment.

Our classes:

- Improve math, reading and writing skills
- Help high school graduates who need to improve skills for a job or college
- Assist with GED® test preparation
- Improve English for Speakers of Other Languages (ESOL)
- Help transition students into a job, training or college

Morning and evening classes are offered at Tri-C's Eastern, Western 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 216-261-5006
- Western Suburbs and Cleveland West: 216-529-4240

Credit for Prior Learning

Prior Learning is defined as academic credit awarded to registered students upon demonstration of knowledge equivalent to that gained through a college course. A student must be currently enrolled in a minimum of 12 semester credit hours, or have completed a minimum of 20 semester credit hours, at Tri-C and be in good standing (maintain a minimum of 2.0 GPA) before applying for Prior Learning credit. Students may obtain a maximum of 30 semester credits through one, or a combination, of the recognized options for Prior Learning. Awarded Prior Learning credit will not affect a student's grade point average or quality points. Also, the awarded Prior Learning credit will not substitute for the required 20 semester credits of residency needed for college graduation. Standardized methods of evaluation are used to measure a student's demonstrated knowledge of a subject area. If equivalent knowledge is demonstrated upon completion, the student will be awarded the same academic credit as that designated for the course. The student should see a counselor for any additional requirements.

Prior Learning Options

Recognized options under which Prior Learning may be awarded include:

College Level Examination Program (CLEP)
The CLEP includes general and subject-specific exams in a variety of areas. Tri-C will award comparable academic credit to students for successful completion of the CLEP general and subject area examinations. See Tri-C's CLEP equivalencies (http://www.tri-c.edu/transfer-center/documents/clep-exams-and-course-equivalencies.pdf). Official transcripts must be submitted to the Enrollment Center with a letter requesting the posting of CLEP credit. For information on testing sites and exam options, see the CLEP website (https://clep.collegeboard.org).

DANTES Subject Standardized Tests

DANTES is a group of standardized tests originally developed for the voluntary education programs of the U.S. 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 include

- Military Training Credit
  Prior learning credit can be awarded for education a student received while a member of the U.S. Armed Forces.
  - Military 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 Articulation and Transfer Network 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. See ODHE's aligned military credit (https://transfercredit.ohio.gov/pg_35?15139544977130).
  - For more information, see ACE’s “Transfer Guide: Understanding Your Military Transcript and ACE Credit Recommendations” (http://www.acenet.edu/news-room/Pages/Transfer-Guide-Understanding-Your-Military-Transcript-and-ACE-Credit-Recommendations.aspx).

- Standardized Training and Certification Programs
  Prior learning credit can also be awarded for numerous standard training and certification programs. For more information, see ACE’s “National Guide to College Credit for Workforce Training” (http://www.acenet.edu/news-room/Pages/National-Guide-to-College-Credit-for-Workforce-Training.aspx).

Credit by Exam (CBE)

There are many courses offered at Tri-C for which Prior Learning may be awarded by a student’s taking and passing a comprehensive exam on the course subject. CBE for a particular course may be taken only once. For more information, schedule an appointment with a counselor for an overview of CBE.

Bypass Credit

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. For more information, schedule an
appointment with a counselor for an overview of the Bypass Credit process.

**Degree and Certificate Program Requirements**

**Degree Programs**

Cuyahoga Community College offers the following five (5) degrees: Associate of Arts, 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.

**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 essential learning 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 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 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
- Three (3) semester credits selected from the following courses (exclusive of developmental education, ENG-1001 Intensive College Reading & Writing and English as a Second Language courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling (American Sign Language)</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ENG-2010</td>
<td>Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2020</td>
<td>Women Writers on the Experiences of Women</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2040</td>
<td>Poetry Workshop</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2050</td>
<td>Personal &amp; Reflective Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Foreign Languages**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2420</td>
<td>Russian Literature and Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

**Speech Communication**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
</tbody>
</table>
SPCH-1050 Voice and Diction 3
SPCH-1210 Group Discussion 3
SPCH-2000 Introduction to Communication Theory 3
SPCH-2010 3
SPCH-2020 Interviewing 3
SPCH-202A Interviewing Overview 1
SPCH-202B Selection Interviewing 1
SPCH-202C Workplace Interviewing 1
SPCH-2050 Oral Interpretation 3
SPCH-2060 Interviewing for Information 1
SPCH-2070 Relational Interviewing 1
SPCH-2110 3
SPCH-2120 Forensics Activity 1
SPCH-2130 Business and Professional Communication 3
SPCH-2150 Introduction to Speech Pathology 3
SPCH-2160 Intercultural Communication 3
SPCH-2180 Principles of Phonetics 3

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:

<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>
<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-1370</td>
<td>Mathematics for Elementary and Middle School Teachers I</td>
<td>4</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>
</tr>
<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>
</tr>
<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-161H</td>
<td>Honors Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-162H</td>
<td>Honors Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-2520</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

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>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
</tbody>
</table>

Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
<td>3</td>
</tr>
<tr>
<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
<td>1</td>
</tr>
<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>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-150H</td>
<td>Honors 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>BIO-151H</td>
<td>Honors Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2010</td>
<td>Field Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2020</td>
<td>Tropical Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2050</td>
<td>Field Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2070</td>
<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-233A</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-233B</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234A</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234B</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
</tbody>
</table>
### Degree and Certificate Program Requirements

**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**  Survey of Earth Science  3
- **ESCI-103L**  Survey of Earth Science Lab  1
- **ESCI-1040**  Weather 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

**Physical Science**
- **PSCI-1010**  Astronomy  3
- **PSCI-101L**  Astronomy Laboratory  1
- **PSCI-1020**  Chemistry  3
- **PSCI-102L**  Chemistry Laboratory  1
- **PSCI-1030**  Earth  3
- **PSCI-103L**  Earth Laboratory  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

**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:

<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>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
<tr>
<td>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>4</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2700</td>
<td>The Economics of Money, Banking, and Financial Markets</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1020</td>
<td>Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1000</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1510</td>
<td>Regional Geography of the United States and Canada</td>
<td>3</td>
</tr>
</tbody>
</table>

**Journalism and Mass Communications**
- **JMC-1011**  Introduction to Mass Communication  4
- **JMC-1320**  Staff Practice  1
- **JMC-1610**  Survey of the Black Press  3
- **JMC-2000**  Media Writing  3
- **JMC-2010**  News Writing  4
- **JMC-2220**  Broadcast Journalism  3
- **JMC-2410**  Television Production  3
- **JMC-2830**  Cooperative Field Experience  1-3

**Political Science**
- **POL-1010**  American National Government  3
- **POL-101H**  Honors American National Government  3
- **POL-1020**  State & Local Government  3
- **POL-1040**  Introduction to Peace and Conflict Studies  3
- **POL-2030**  Comparative Politics  3
- **POL-2040**  Conflict Resolution Skills  3
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL-2050</td>
<td>Study Abroad in Peace and Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>POL-2060</td>
<td>Political Systems of Africa</td>
<td>3</td>
</tr>
<tr>
<td>POL-2070</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POL-2100</td>
<td>Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
<td>3</td>
</tr>
<tr>
<td>POL-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2130</td>
<td>Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td>POL-2140</td>
<td>Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning</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>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>PSY-2010</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY-201H</td>
<td>Honors Child Growth and Development</td>
<td>3</td>
</tr>
<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-2050</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2060</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2070</td>
<td>Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2080</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2090</td>
<td>Psychology of Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2110</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2120</td>
<td>Multicultural Health Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2150</td>
<td>Quantitative Methods in Behavioral Science</td>
<td>4</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>SOC-1020</td>
<td>Social Institutions</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-2020</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2040</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2051</td>
<td>Introduction to Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2060</td>
<td>Human Behavior and the Social Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2070</td>
<td>Poverty in the United States</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2150</td>
<td>Deviance</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2210</td>
<td>Dating and Intimate Relationships</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2410</td>
<td>Sociology of Gender</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2510</td>
<td>Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>UST-1120</td>
<td>History of Cleveland</td>
<td>3</td>
</tr>
<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
<td>3</td>
</tr>
<tr>
<td>UST-2070</td>
<td>Urban Politics</td>
<td>3</td>
</tr>
<tr>
<td>UST-2640</td>
<td>American Urban History</td>
<td>3</td>
</tr>
<tr>
<td>WST-2010</td>
<td>Women in the World</td>
<td>3</td>
</tr>
<tr>
<td>WST-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>WST-2850</td>
<td>Practicum-Women's Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

1 ANTH-1210 Human Evolution cannot be used to meet the Social & Behavioral Sciences Requirement.

### Arts and Humanities (9 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:

- Three (3) semester credits selected from the following courses.

(Note: Courses that have been used to complete the Communication requirement cannot count towards fulfilling the Arts and Humanities requirement):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
</tbody>
</table>

### American Sign Language

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1010</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART-202H</td>
<td>Honors 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>
</tr>
<tr>
<td>ART-203H</td>
<td>Honors Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
</tbody>
</table>

### Dance

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
</tbody>
</table>

### English 2000-level literature courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2020</td>
<td>Women Writers on the Experiences of Women</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>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2040</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>Beginning Spanish Language and Cultures I</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>Beginning Spanish Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1030</td>
<td>Spanish for Law Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-2010</td>
<td>Intermediate Spanish Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2020</td>
<td>Intermediate Spanish Language and Cultures II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2411</td>
<td>Spanish Conversation &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2420</td>
<td>Introduction to Spanish Culture, Civilization, and Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2430</td>
<td>Civilization, Culture, and Literature of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-179H</td>
<td>Honors Contract in History</td>
<td>1</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1010</td>
<td>Introduction to Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1100</td>
<td>Leadership Development Studies</td>
<td>3</td>
</tr>
<tr>
<td>HUM-175H</td>
<td>Honors Forum: Critical Issues</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2040</td>
<td>American Cinema</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2310</td>
<td>Screenwriting I</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2010</td>
<td>American Cinema</td>
<td>3</td>
</tr>
</tbody>
</table>
### 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-2030 British Invasion 2
### MUS-1050 Survey of World Music 3
### MUS-1030 Survey of Rock and Roll 3
### MUS-1040 Survey of African-American Music 3
### MUS-2030 British Invasion 2
### MUS-1050 Survey of World Music 3
### MUS-2500 Music History and Literature I 3
### MUS-2510 Music History and Literature II 3
### MUS-2520 Jazz History I 2
### MUS-2530 Jazz History II 2
### MUS-2540 Jazz History Listening I 1
### MUS-2550 Jazz History Listening II 1

### 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 Religion 3
### PHIL-2020 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

### Religious Studies
### REL-1010 Introduction to Religious Studies 3
### REL-2010 Religious Traditions of Western Christianity 3
### REL-2020 Religious Traditions of Judaism 3
### REL-2060 African-American Religious Experience 3

### Speech Communication
### SPCH-1000 Fundamentals of Interpersonal Communication 3
### SPCH-1010 Fundamentals of Speech Communication 3
### SPCH-101H Honors Fundamentals of Speech Communication 3
### SPCH-1050 Voice and Diction 3
### SPCH-1210 Group Discussion 3
### SPCH-2000 Introduction to Communication Theory 3
### SPCH-2010 3
### SPCH-2020 Interviewing 3
### SPCH-202A Interviewing Overview 1
### SPCH-202B Selection Interviewing 1
### SPCH-202C Workplace Interviewing 1
### SPCH-2050 Oral Interpretation 3
### SPCH-2060 Interviewing for Information 1
### SPCH-2070 Relational Interviewing 1
### SPCH-2110 3
### SPCH-2120 Forensics Activity 1
### SPCH-2130 Business and Professional Communication 3
### SPCH-2150 Introduction to Speech Pathology 3

### SPCH-2160 Intercultural Communication 3
### SPCH-2180 Principles of Phonetics 3

### Theatre Arts
### THEA-1010 Theatre Appreciation 3
### THEA-1100 Survey and Appreciation of American Musical Theatre 3
### THEA-2210 History of Theatre and Drama I 3
### THEA-2220 History of Theatre & Drama II 3

### Women's Studies
### WST-1510 Introduction to Women's Studies 3
### WST-1520 Women's Films 3
### WST-2020 Women, Science and Technology 3
### WST-2030 Women and Art 3

• Six (6) semester credits selected from the following Arts and Humanities courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
</tbody>
</table>

### Art
### ART-1010 | Art Appreciation                          | 3            |
### ART-1040 | Survey of Non-Western Art                 | 3            |
### ART-1050 | Drawing I                                 | 3            |
### ART-1060 | Drawing II                                | 3            |
### ART-1070 | 3D Foundations                            | 3            |
### ART-1081 | 2D Design and Color                       | 3            |
### ART-1100 | Sculpture I                               | 3            |
### ART-1200 | Calligraphy                               | 3            |
### ART-1500 | Art for Elementary Education              | 3            |
### ART-1600 | Introduction to Art Therapy               | 3            |
### ART-1610 | Art Therapy II: Methods and Media         | 3            |
### ART-1700 | Ceramics I                                | 3            |
### ART-2000 | Life Drawing I                            | 3            |
### ART-2010 | Life Drawing II                           | 3            |
### ART-2020 | Art History Survey: Prehistoric to Renaissance | 3 |
### ART-202H | Honors Art History Survey: Prehistoric to Renaissance | 3 |
### ART-2030 | Art History Survey: Late Renaissance to Present | 3 |
### ART-203H | Honors Art History Survey: Late Renaissance to Present | 3 |
### ART-2050 | Painting I                                | 3            |
### ART-2060 | Painting II                               | 3            |
### ART-2070 | Watercolor                                | 3            |
### ART-2100 | Computer Graphic: Raster Images            | 3            |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2110</td>
<td>Computer Graphic: Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART-2151</td>
<td>Animation for Web and Media</td>
<td>3</td>
</tr>
<tr>
<td>ART-2180</td>
<td>Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2190</td>
<td>Ceramics II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2210</td>
<td>Printmaking I</td>
<td>3</td>
</tr>
<tr>
<td>ART-2220</td>
<td>Printmaking II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2300</td>
<td>Art Therapy III: Approaches and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ART-2310</td>
<td>Art Therapy Studio: Basic Therapeutic Skills</td>
<td>3</td>
</tr>
<tr>
<td>ART-2790</td>
<td>Portfolio Development</td>
<td>1</td>
</tr>
</tbody>
</table>

**Dance**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DANC-1200</td>
<td>Conditioning for the Performing Artist I</td>
<td>1</td>
</tr>
<tr>
<td>DANC-1220</td>
<td>Theatre Dance/Stage Movement</td>
<td>3</td>
</tr>
<tr>
<td>DANC-1401</td>
<td>African Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC-1501</td>
<td>Dance Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>DANC-1510</td>
<td>Dance II</td>
<td>3</td>
</tr>
<tr>
<td>DANC-1520</td>
<td>Ballet I</td>
<td>1</td>
</tr>
<tr>
<td>DANC-1530</td>
<td>Contemporary/Modern Dance I</td>
<td>2</td>
</tr>
<tr>
<td>DANC-1540</td>
<td>Jazz Dance I</td>
<td>1</td>
</tr>
<tr>
<td>DANC-1600</td>
<td>Choreography &amp; Production</td>
<td>2</td>
</tr>
<tr>
<td>DANC-2300</td>
<td>Dance III: Technique</td>
<td>2</td>
</tr>
<tr>
<td>DANC-2310</td>
<td>Dance IV: Technique</td>
<td>2</td>
</tr>
<tr>
<td>DANC-2400</td>
<td>African Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC-2520</td>
<td>Ballet II</td>
<td>1</td>
</tr>
<tr>
<td>DANC-2530</td>
<td>Contemporary/Modern Dance II</td>
<td>2</td>
</tr>
<tr>
<td>DANC-2540</td>
<td>Jazz Dance II</td>
<td>1</td>
</tr>
<tr>
<td>DANC-2600</td>
<td>Dance Improvisation and Choreography</td>
<td>1</td>
</tr>
<tr>
<td>DANC-2620</td>
<td>Ballet III</td>
<td>1</td>
</tr>
<tr>
<td>DANC-2630</td>
<td>Contemporary/Modern Dance III</td>
<td>2</td>
</tr>
<tr>
<td>DANC-2730</td>
<td>Teaching Dance</td>
<td>3</td>
</tr>
<tr>
<td>DANC-2940</td>
<td>Field Experience</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**English 2000-level literature courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2020</td>
<td>Women Writers on the Experiences of Women</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2440</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Foreign Languages**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French in Quebec - Beginner Level</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2420</td>
<td>Russian Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>Beginning Spanish Language and Cultures I</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>Beginning Spanish Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1030</td>
<td>Spanish for Law Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-2010</td>
<td>Intermediate Spanish Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2020</td>
<td>Intermediate Spanish Language and Cultures II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2411</td>
<td>Spanish Conversation &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2420</td>
<td>Introduction to Spanish Culture, Civilization, and Literature</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>SPAN-2430</td>
<td>Civilization, Culture, and Literature of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1010</td>
<td>Introduction to Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1100</td>
<td>Leadership Development Studies</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2040</td>
<td>American Cinema</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2310</td>
<td>Screenwriting I</td>
<td>3</td>
</tr>
<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>
<tr>
<td>MUS-1100</td>
<td>Music For Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1110</td>
<td>Music Business I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1120</td>
<td>Music Business II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1130</td>
<td>MIDI Technology I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1140</td>
<td>MIDI Technology II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1170</td>
<td>Songwriting I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1200</td>
<td>Music Reading Skills</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1210</td>
<td>Introduction to Music Theory</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1220</td>
<td>Basic Ear Training</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1230</td>
<td>Critical Listening</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1250</td>
<td>Class Keyboard I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1260</td>
<td>Class Keyboard II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1270</td>
<td>Class Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1280</td>
<td>Class Guitar</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1290</td>
<td>Basic Applied Music I</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1301</td>
<td>Applied Piano Minor I</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1302</td>
<td>Applied Piano Minor II</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1460</td>
<td>Applied Music I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1470</td>
<td>Applied Music II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1500</td>
<td>Choir</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1510</td>
<td>Choral Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1520</td>
<td>Jazz Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1530</td>
<td>Concert Band</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1540</td>
<td>Orchestra</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1550</td>
<td>Instrumental Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS-1570</td>
<td>Technology Tools I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1580</td>
<td>Technology Tools II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1600</td>
<td>Traditional Theory I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1610</td>
<td>Ear Training I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1620</td>
<td>Traditional Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1630</td>
<td>Ear Training II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1650</td>
<td>Jazz Theory I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1670</td>
<td>Jazz Performance and Improvisation I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1680</td>
<td>Jazz Performance and Improvisation II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1720</td>
<td>Arranging I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-1970</td>
<td>Music Seminar</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2030</td>
<td>British Invasion</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2130</td>
<td>Music Production for Video and Film</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2140</td>
<td>Studio Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2290</td>
<td>Basic Applied Music II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2301</td>
<td>Applied Piano Minor III</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2302</td>
<td>Applied Piano Minor IV</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2460</td>
<td>Applied Music III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2470</td>
<td>Applied Music IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2500</td>
<td>Music History and Literature I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2510</td>
<td>Music History and Literature II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2520</td>
<td>Jazz History I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2530</td>
<td>Jazz History II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2540</td>
<td>Jazz History Listening I</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2550</td>
<td>Jazz History Listening II</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2600</td>
<td>Traditional Theory III</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2610</td>
<td>Ear Training III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2620</td>
<td>Traditional Theory IV</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2630</td>
<td>Ear Training IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2650</td>
<td>Jazz Theory II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2660</td>
<td>Jazz Theory III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2670</td>
<td>Jazz Performance and Improvisation III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2680</td>
<td>Jazz Performance and Improvisation IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2710</td>
<td>Arranging II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2720</td>
<td>Arranging III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2740</td>
<td>1-3</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>Course</td>
<td>Title</td>
<td>Credits</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2010</td>
<td>Comparative World Religion</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>PHIL-2031</td>
<td>Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2040</td>
<td>Philosophy of Art</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Religious Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

**Speech Communication**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-202A</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202B</td>
<td>Selection Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202C</td>
<td>Workplace Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2120</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2130</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2150</td>
<td>Introduction to Speech Pathology</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2180</td>
<td>Principles of Phonetics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Theatre Arts**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</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>
</tr>
<tr>
<td>THEA-1300</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1400</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1430</td>
<td>Introduction to Scenery and Stagecrafts</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1500</td>
<td>Acting I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1510</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1520</td>
<td>Improvisation and Performance I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1540</td>
<td>Rehearsal and Performance</td>
<td>2</td>
</tr>
<tr>
<td>THEA-1550</td>
<td>Practicum in Technical Theatre</td>
<td>2</td>
</tr>
<tr>
<td>THEA-1600</td>
<td>Acting for the Camera I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2010</td>
<td>Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2100</td>
<td>Arts Management</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2400</td>
<td>Playwriting</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2440</td>
<td>Sound for Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2450</td>
<td>Drafting for Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2500</td>
<td>Acting III</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2510</td>
<td>Acting IV</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2520</td>
<td>Improvisation and Performance II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2540</td>
<td>Advanced Rehearsal Performance</td>
<td>2</td>
</tr>
<tr>
<td>THEA-2550</td>
<td>Advanced Practicum in Technical Theatre</td>
<td>2</td>
</tr>
<tr>
<td>THEA-2600</td>
<td>Acting for the Camera II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2740</td>
<td></td>
<td>1-3</td>
</tr>
</tbody>
</table>

**Women’s Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WST-1510</td>
<td>Introduction to Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>WST-1520</td>
<td>Women’s Films</td>
<td>3</td>
</tr>
<tr>
<td>WST-200H</td>
<td>Honors Women and Reform</td>
<td>3</td>
</tr>
<tr>
<td>WST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>WST-2030</td>
<td>Women and Art</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Graduation Requirements**

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. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

**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
- ENG-1020 College Composition II or ENG-102H Honors College Composition II

1. 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. See Communication course listing under Associate of Arts for courses that can meet this requirement if ENG-1010 has been 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):

<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</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
<tr>
<td>0104</td>
<td>The Cell and DNA Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>1050</td>
<td>Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>105L</td>
<td>Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>106</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>1221</td>
<td>Anatomy and Physiology for Diagnostic Imaging</td>
<td>4</td>
</tr>
<tr>
<td>1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>150H</td>
<td>Honors Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>1510</td>
<td>Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>151H</td>
<td>Honors Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>2010</td>
<td>Field Botany</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>BIO-2020</td>
<td>Tropical Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2050</td>
<td>Field Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2070</td>
<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-233A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-234B</td>
<td></td>
<td>2</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>
</tbody>
</table>

**Chemistry**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-102H</td>
<td>Honors Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1080</td>
<td>Herbal Medicines and Natural Products</td>
<td>3</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>
</tr>
<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>
<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-2000</td>
<td>Analytical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2300</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2310</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
</tbody>
</table>

**Earth Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI-1030</td>
<td>Survey of Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-103L</td>
<td>Survey of Earth Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1040</td>
<td>Weather Studies</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>Lab in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</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>
<tr>
<td>ESCI-1610</td>
<td>Geology of the National Parks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td>Lab in Geology of the National Parks</td>
<td>1</td>
</tr>
</tbody>
</table>

**Physical Sciences**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1020</td>
<td>Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-102L</td>
<td>Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1030</td>
<td>Earth</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-103L</td>
<td>Earth Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

**Physics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS-1010</td>
<td>Astronomy Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td>Everyday Physics</td>
<td>2</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2250</td>
<td>Radiographic Physics and Quality Control</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-2320</td>
<td>General Physics II</td>
<td>5</td>
</tr>
</tbody>
</table>

**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:

<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>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>4</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2700</td>
<td>The Economics of Money, Banking, and Financial Markets</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1020</td>
<td>Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1000</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1510</td>
<td>Regional Geography of the United States and Canada</td>
<td>3</td>
</tr>
</tbody>
</table>

**Journalism and Mass Communications**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMC-1012</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>JMC-1320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>JMC-1410</td>
<td>Staff Practice</td>
<td>1</td>
</tr>
<tr>
<td>JMC-1610</td>
<td>Survey of the Black Press</td>
<td>3</td>
</tr>
</tbody>
</table>
JMC-2000 Media Writing 3
JMC-2010 News Writing 4
JMC-2220 Broadcast Journalism
JMC-2410 Television Production
JMC-2830 Cooperative Field Experience 1-3

Political Science
POL-1010 American National Government 3
POL-101H Honors American National Government 3
POL-1020 State & Local Government 3
POL-1040 Introduction to Peace and Conflict Studies 3
POL-2030 Comparative Politics 3
POL-2040 Conflict Resolution Skills 3
POL-2050 Study Abroad in Peace and Conflict Resolution 3
POL-2060 Political Systems of Africa 3
POL-2070 International Relations 3
POL-2100 Constitutional Law 3
POL-2110 Terrorism and Counterterrorism 3
POL-2120 Women and Politics 3
POL-2130 Politics of Race 3
POL-2140 Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning 3

Psychology
PSY-1010 General Psychology 3
PSY-101H Honors General Psychology 3
PSY-1050 Introduction to Industrial/Organizational Psychology 3
PSY-1060 Cross-Cultural Competency for Health Care Providers 1
PSY-2010 Child Growth and Development 3
PSY-201H Honors Child Growth and Development 3
PSY-2020 Life Span Development 4
PSY-202H Honors Life Span Development 4
PSY-2040 Social Psychology 3
PSY-2050 Psychology of Personality 3
PSY-2060 Adolescent Psychology 3
PSY-2070 Behavior Modification 3
PSY-2080 Abnormal Psychology 3
PSY-2090 Psychology of Human Sexuality 3
PSY-2100 Introduction to Aging 3
PSY-2110 Educational Psychology 3
PSY-2120 Multicultural Health Psychology 3

Sociology
SOC-1010 Introductory Sociology 3
SOC-101H Honors Introductory Sociology 3
SOC-1020 Social Institutions 3
SOC-2010 Social Problems 3
SOC-201H Honors Social Problems 3
SOC-2020 Sociology of the Family 3
SOC-2040 Introduction to Social Work 3
SOC-2051 Introduction to Social Welfare 3
SOC-2060 Human Behavior and the Social Environment 3
SOC-2070 Poverty in the United States 3
SOC-2100 Aging and Society 3
SOC-2110 Death and Dying 3
SOC-2150 Deviance 3
SOC-2160 Introduction to Criminology 3
SOC-2210 Dating and Intimate Relationships 3
SOC-2310 Contemporary American Black-White Relations 3
SOC-2410 Sociology of Gender 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-1120 History of Cleveland 3
UST-2020 Urban Cultures 3
UST-2070 Urban Politics 3
UST-2640 American Urban History 3

Women’s Studies
WST-2010 Women in the World 3
WST-2120 Women and Politics 3
WST-2850 Practicum-Women’s Studies 3

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:

• Three (3) semester credits selected from the following courses. (Note: Courses that have been used to complete the Communications requirement cannot count toward fulfilling the Arts and Humanities requirement.):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
</tbody>
</table>

Art
ART-1010 Art Appreciation 3
ART-1040 Survey of Non-Western Art 3

ANTH-1210 Human Evolution cannot be used towards the Social and Behavioral Sciences Requirement.
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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>
</tr>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
<tr>
<td><strong>English 2000-level literature courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-2020</td>
<td>Women Writers on the Experiences of Women</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
<tr>
<td><strong>Foreign Languages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2400</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2420</td>
<td>Russian Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>Beginning Spanish Language and Cultures I</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>Beginning Spanish Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1030</td>
<td>Spanish for Law Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-2010</td>
<td>Intermediate Spanish Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2020</td>
<td>Intermediate Spanish Language and Cultures II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2411</td>
<td>Spanish Conversation &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2420</td>
<td>Introduction to Spanish Culture, Civilization, and Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2430</td>
<td>Civilization, Culture, and Literature of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
</tbody>
</table>
### Humanities
- **HUM-1010** Introduction to Humanities 3
- **HUM-1020** The Individual in Society 3
- **HUM-1030** The Individual in Cosmos 3
- **HUM-1100** Leadership Development Studies 3

### Journalism and Mass Communications
- **JMC-1310** Film Appreciation 3
- **JMC-2040** American Cinema 3
- **JMC-2310** Screenwriting I 3
- **MUS-1010** Survey of European Classical Music 3

### Music
- **MUS-1020** Survey of Jazz 3
- **MUS-1030** Survey of Rock and Roll 3
- **MUS-1040** Survey of African-American 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 Religion 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-2020** Religious Traditions of Judaism 3
- **REL-2060** African-American Religious Experience 3

### Speech Communication
- **SPCH-1000** Fundamentals of Interpersonal Communication 3
- **SPCH-1010** Fundamentals of Speech Communication 3
- **SPCH-101H** Honors Fundamentals of Speech Communication 3
- **SPCH-1050** Voice and Diction 3
- **SPCH-1210** Group Discussion 3
- **SPCH-2000** Introduction to Communication Theory 3
- **SPCH-2010** Interviewing 3
- **SPCH-2020** Interviewing Overview 1
- **SPCH-202A** Selection Interviewing 1
- **SPCH-202B** Workplace Interviewing 1
- **SPCH-2050** Oral Interpretation 3
- **SPCH-2060** Interviewing for Information 1
- **SPCH-2070** Relational Interviewing 1
- **SPCH-2110** 3
- **SPCH-2120** Forensics Activity 1
- **SPCH-2130** Business and Professional Communication 3
- **SPCH-2150** Introduction to Speech Pathology 3
- **SPCH-2160** Intercultural Communication 3
- **SPCH-2180** Principles of Phonetics 3

### Theatre Arts
- **THEA-1010** Theatre Appreciation 3
- **THEA-1100** Survey and Appreciation of American Musical Theatre 3
- **THEA-2210** History of Theatre and Drama I 3
- **THEA-2220** History of Theatre & Drama II 3

### Women's Studies
- **WST-1510** Introduction to Women's Studies 3
- **WST-1520** Women's Films 3
- **WST-200H** Honors Women and Reform 3
- **WST-2020** Women, Science and Technology 3
- **WST-2030** Women and Art 3

- **ASL-1000** Fingerspelling 2
- **ASL-1010** Beginning American Sign Language I 4
- **ASL-1020** Beginning American Sign Language II 4
- **ASL-1100** Deaf Culture 3
- **ASL-2010** Intermediate American Sign Language I 4
- **ASL-2020** Intermediate American Sign Language II 4
- **ASL-2412** Advanced American Sign Language I 4
- **ASL-2420** Advanced American Sign Language II 4

### Art
- **ART-1010** Art Appreciation 3
- **ART-1040** Survey of Non-Western Art 3
- **ART-1050** Drawing I 3
- **ART-1060** Drawing II 3
- **ART-1070** 3D Foundations 3
- **ART-1081** 2D Design and Color 3
- **ART-1100** Sculpture I 3
- **ART-1200** Calligraphy 3
- **ART-1500** Art for Elementary Education 3
- **ART-1600** Introduction to Art Therapy 3
- **ART-1610** Art Therapy II: Methods and Media 3
- **ART-1700** Ceramics I 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2000</td>
<td>Life Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-2010</td>
<td>Life Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART-202H</td>
<td>Honors 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>
</tr>
<tr>
<td>ART-203H</td>
<td>Honors Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
<tr>
<td>ART-2050</td>
<td>Painting I</td>
<td>3</td>
</tr>
<tr>
<td>ART-2060</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2070</td>
<td>Watercolor</td>
<td>3</td>
</tr>
<tr>
<td>ART-2080</td>
<td>Portrait Drawing and Painting</td>
<td>3</td>
</tr>
<tr>
<td>ART-2100</td>
<td>Computer Graphic: Raster Images</td>
<td>3</td>
</tr>
<tr>
<td>ART-2110</td>
<td>Computer Graphic: Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART-2151</td>
<td>Animation for Web and Media</td>
<td>3</td>
</tr>
<tr>
<td>ART-2180</td>
<td>Sculpture II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2190</td>
<td>Ceramics II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2210</td>
<td>Printmaking I</td>
<td>3</td>
</tr>
<tr>
<td>ART-2220</td>
<td>Printmaking II</td>
<td>3</td>
</tr>
<tr>
<td>ART-2300</td>
<td>Art Therapy III: Approaches and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ART-2310</td>
<td>Art Therapy Studio: Basic Therapeutic Skills</td>
<td>3</td>
</tr>
<tr>
<td>ART-2790</td>
<td>Portfolio Development</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dance Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC-1100</td>
</tr>
<tr>
<td>DANC-1200</td>
</tr>
<tr>
<td>DANC-1220</td>
</tr>
<tr>
<td>DANC-1401</td>
</tr>
<tr>
<td>DANC-1501</td>
</tr>
<tr>
<td>DANC-1510</td>
</tr>
<tr>
<td>DANC-1520</td>
</tr>
<tr>
<td>DANC-1530</td>
</tr>
<tr>
<td>DANC-1540</td>
</tr>
<tr>
<td>DANC-2300</td>
</tr>
<tr>
<td>DANC-2310</td>
</tr>
<tr>
<td>DANC-2400</td>
</tr>
<tr>
<td>DANC-2520</td>
</tr>
<tr>
<td>DANC-2530</td>
</tr>
<tr>
<td>DANC-2540</td>
</tr>
<tr>
<td>DANC-2600</td>
</tr>
<tr>
<td>DANC-2620</td>
</tr>
<tr>
<td>DANC-2630</td>
</tr>
<tr>
<td>DANC-2730</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English 2000-level Literature Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2020</td>
</tr>
<tr>
<td>ENG-2310</td>
</tr>
<tr>
<td>ENG-2320</td>
</tr>
<tr>
<td>ENG-2350</td>
</tr>
<tr>
<td>ENG-2360</td>
</tr>
<tr>
<td>ENG-2410</td>
</tr>
<tr>
<td>ENG-2420</td>
</tr>
<tr>
<td>ENG-2430</td>
</tr>
<tr>
<td>ENG-2450</td>
</tr>
<tr>
<td>ENG-2510</td>
</tr>
<tr>
<td>ENG-2520</td>
</tr>
<tr>
<td>ENG-2601</td>
</tr>
<tr>
<td>ENG-2700</td>
</tr>
<tr>
<td>ENG-2710</td>
</tr>
<tr>
<td>ENG-2720</td>
</tr>
<tr>
<td>ENG-2730</td>
</tr>
<tr>
<td>ENG-2740</td>
</tr>
<tr>
<td>ENG-2760</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Foreign Languages Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-1011</td>
</tr>
<tr>
<td>CHIN-1021</td>
</tr>
<tr>
<td>FREN-1010</td>
</tr>
<tr>
<td>FREN-1020</td>
</tr>
<tr>
<td>FREN-1040</td>
</tr>
<tr>
<td>FREN-2010</td>
</tr>
<tr>
<td>FREN-2020</td>
</tr>
<tr>
<td>FREN-2040</td>
</tr>
<tr>
<td>FREN-2410</td>
</tr>
<tr>
<td>FREN-2420</td>
</tr>
<tr>
<td>GER-1010</td>
</tr>
<tr>
<td>GER-1020</td>
</tr>
<tr>
<td>GER-2010</td>
</tr>
<tr>
<td>GER-2020</td>
</tr>
<tr>
<td>ITAL-1010</td>
</tr>
<tr>
<td>ITAL-1020</td>
</tr>
<tr>
<td>ITAL-2010</td>
</tr>
<tr>
<td>ITAL-2020</td>
</tr>
<tr>
<td>ITAL-2410</td>
</tr>
<tr>
<td>ITAL-2420</td>
</tr>
<tr>
<td>JAPN-1011</td>
</tr>
<tr>
<td>JAPN-1021</td>
</tr>
<tr>
<td>JAPN-2011</td>
</tr>
<tr>
<td>JAPN-2021</td>
</tr>
<tr>
<td>JAPN-2411</td>
</tr>
<tr>
<td>JAPN-2421</td>
</tr>
<tr>
<td>RUSS-1010</td>
</tr>
<tr>
<td>RUSS-1020</td>
</tr>
<tr>
<td>RUSS-2010</td>
</tr>
<tr>
<td>Course Code</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>RUSS-2020</td>
</tr>
<tr>
<td>RUSS-2410</td>
</tr>
<tr>
<td>RUSS-2420</td>
</tr>
<tr>
<td>SPAN-1011</td>
</tr>
<tr>
<td>SPAN-1021</td>
</tr>
<tr>
<td>SPAN-1030</td>
</tr>
<tr>
<td>SPAN-2010</td>
</tr>
<tr>
<td>SPAN-2020</td>
</tr>
<tr>
<td>SPAN-2411</td>
</tr>
<tr>
<td>SPAN-2420</td>
</tr>
<tr>
<td>SPAN-2430</td>
</tr>
<tr>
<td>History</td>
</tr>
<tr>
<td>HIST-1010</td>
</tr>
<tr>
<td>HIST-101H</td>
</tr>
<tr>
<td>HIST-1020</td>
</tr>
<tr>
<td>HIST-102H</td>
</tr>
<tr>
<td>HIST-1510</td>
</tr>
<tr>
<td>HIST-151H</td>
</tr>
<tr>
<td>HIST-1520</td>
</tr>
<tr>
<td>HIST-152H</td>
</tr>
<tr>
<td>HIST-1610</td>
</tr>
<tr>
<td>HIST-1630</td>
</tr>
<tr>
<td>HIST-1700</td>
</tr>
<tr>
<td>HIST-2020</td>
</tr>
<tr>
<td>HIST-2031</td>
</tr>
<tr>
<td>HIST-2040</td>
</tr>
<tr>
<td>HIST-2051</td>
</tr>
<tr>
<td>HIST-2060</td>
</tr>
<tr>
<td>HIST-2070</td>
</tr>
<tr>
<td>HIST-2080</td>
</tr>
<tr>
<td>HIST-2090</td>
</tr>
<tr>
<td>HIST-2150</td>
</tr>
<tr>
<td>HIST-2160</td>
</tr>
<tr>
<td>HIST-2520</td>
</tr>
<tr>
<td>HIST-2660</td>
</tr>
<tr>
<td>Humanities</td>
</tr>
<tr>
<td>HUM-1010</td>
</tr>
<tr>
<td>HUM-1020</td>
</tr>
<tr>
<td>HUM-1030</td>
</tr>
<tr>
<td>HUM-1100</td>
</tr>
<tr>
<td>Journalism and Mass Communications</td>
</tr>
<tr>
<td>JMC-1310</td>
</tr>
<tr>
<td>JMC-2040</td>
</tr>
<tr>
<td>JMC-2310</td>
</tr>
<tr>
<td>Music</td>
</tr>
<tr>
<td>MUS-1010</td>
</tr>
<tr>
<td>MUS-1020</td>
</tr>
<tr>
<td>MUS-1030</td>
</tr>
<tr>
<td>MUS-1040</td>
</tr>
<tr>
<td>MUS-1050</td>
</tr>
<tr>
<td>MUS-1100</td>
</tr>
<tr>
<td>MUS-1110</td>
</tr>
<tr>
<td>MUS-1120</td>
</tr>
<tr>
<td>MUS-1130</td>
</tr>
<tr>
<td>MUS-1140</td>
</tr>
<tr>
<td>MUS-1170</td>
</tr>
<tr>
<td>MUS-1200</td>
</tr>
<tr>
<td>MUS-1210</td>
</tr>
<tr>
<td>MUS-1220</td>
</tr>
<tr>
<td>MUS-1230</td>
</tr>
<tr>
<td>MUS-1250</td>
</tr>
<tr>
<td>MUS-1260</td>
</tr>
<tr>
<td>MUS-1270</td>
</tr>
<tr>
<td>MUS-1280</td>
</tr>
<tr>
<td>MUS-1290</td>
</tr>
<tr>
<td>MUS-1301</td>
</tr>
<tr>
<td>MUS-1302</td>
</tr>
<tr>
<td>MUS-1460</td>
</tr>
<tr>
<td>MUS-1470</td>
</tr>
<tr>
<td>MUS-1500</td>
</tr>
<tr>
<td>MUS-1510</td>
</tr>
<tr>
<td>MUS-1520</td>
</tr>
<tr>
<td>MUS-1530</td>
</tr>
<tr>
<td>MUS-1540</td>
</tr>
<tr>
<td>MUS-1550</td>
</tr>
<tr>
<td>MUS-1570</td>
</tr>
<tr>
<td>MUS-1580</td>
</tr>
<tr>
<td>MUS-1600</td>
</tr>
<tr>
<td>MUS-1610</td>
</tr>
<tr>
<td>MUS-1620</td>
</tr>
<tr>
<td>MUS-1630</td>
</tr>
<tr>
<td>MUS-1650</td>
</tr>
<tr>
<td>MUS-1670</td>
</tr>
<tr>
<td>MUS-1680</td>
</tr>
<tr>
<td>MUS-1720</td>
</tr>
<tr>
<td>MUS-1970</td>
</tr>
<tr>
<td>MUS-2030</td>
</tr>
<tr>
<td>MUS-2130</td>
</tr>
<tr>
<td>MUS-2140</td>
</tr>
<tr>
<td>MUS-2290</td>
</tr>
<tr>
<td>MUS-2301</td>
</tr>
<tr>
<td>MUS-2302</td>
</tr>
<tr>
<td>MUS-2460</td>
</tr>
<tr>
<td>MUS-2470</td>
</tr>
<tr>
<td>MUS-2500</td>
</tr>
<tr>
<td>MUS-2510</td>
</tr>
<tr>
<td>MUS-2520</td>
</tr>
<tr>
<td>MUS-2530</td>
</tr>
<tr>
<td>MUS-2540</td>
</tr>
</tbody>
</table>
### Degree and Certificate Program Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-2600</td>
<td>Traditional Theory III</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2610</td>
<td>Ear Training III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2620</td>
<td>Traditional Theory IV</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2630</td>
<td>Ear Training IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2650</td>
<td>Jazz Theory II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2650</td>
<td>Jazz History Listening II</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2660</td>
<td>Jazz Theory III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2670</td>
<td>Jazz Performance and Improvisation III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2680</td>
<td>Jazz Performance and Improvisation IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2710</td>
<td>Arranging II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2720</td>
<td>Arranging III</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2740</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td><strong>Philosophy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2010</td>
<td>Comparative World Religion</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>PHIL-2031</td>
<td>Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2040</td>
<td>Philosophy of Art</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
<td>3</td>
</tr>
<tr>
<td><strong>Religious Studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
<td>3</td>
</tr>
<tr>
<td><strong>Speech Communication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202B</td>
<td>Selection Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202C</td>
<td>Workplace Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2120</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2130</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2150</td>
<td>Introduction to Speech Pathology</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2180</td>
<td>Principles of Phonetics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Theatre Arts</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td>THEA-1300</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1400</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>THEA-1430</td>
<td>Introduction to Scenery and Stagecrafts</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1500</td>
<td>Acting I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1510</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1520</td>
<td>Improvisation and Performance I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1540</td>
<td>Rehearsal and Performance</td>
<td>2</td>
</tr>
<tr>
<td>THEA-1550</td>
<td>Practicum in Technical Theatre</td>
<td>2</td>
</tr>
<tr>
<td>THEA-1600</td>
<td>Acting for the Camera I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2010</td>
<td>Script Analysis</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2100</td>
<td>Arts Management</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2400</td>
<td>Playwriting</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2440</td>
<td>Sound for Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2450</td>
<td>Drafting for Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2500</td>
<td>Acting III</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2510</td>
<td>Acting IV</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2520</td>
<td>Improvisation and Performance II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2540</td>
<td>Advanced Rehearsal Performance</td>
<td>2</td>
</tr>
<tr>
<td>THEA-2550</td>
<td>Advanced Practicum in Technical Theatre</td>
<td>2</td>
</tr>
<tr>
<td>THEA-2600</td>
<td>Acting for the Camera II</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2740</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td><strong>Women’s Studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>WST-1520</td>
<td>Women’s Films</td>
<td>3</td>
</tr>
<tr>
<td>WST-200H</td>
<td>Honors Women and Reform</td>
<td>3</td>
</tr>
<tr>
<td>WST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>WST-2030</td>
<td>Women and Art</td>
<td>3</td>
</tr>
</tbody>
</table>

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

### Elective Graduation Requirements

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. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

**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.

**Associate of Applied Business Degree**

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 I
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1001 Intensive College Reading & Writing and English as a Second Language courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
</tbody>
</table>

**English**

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- ENG-2010 Creative Writing
- ENG-2020 Women Writers on the Experiences of Women
- ENG-2040 Poetry Workshop
- ENG-2050 Personal & Reflective Writing
- ENG-2151 Technical Writing
- ENG-2310 American Literature I
- ENG-2320 American Literature II
- ENG-2350 British Literature I
- ENG-2360 British Literature II
- ENG-2410 Introduction to Literature: Poetry
- ENG-2420 Introduction to Literature: Fiction
- ENG-2430 Introduction to Literature: Drama
- ENG-2450 Introduction to Literature: Science Fiction
- ENG-2510 African-American Literature I
- ENG-2520 African-American Literature II
- ENG-2601 Literature for Children and Adolescents
- ENG-2700 World Literature
- ENG-2710 Shakespeare
- ENG-2720 Survey of Biblical Literature
- ENG-2730 Exploration of World Mythology
- ENG-2740 Literature and Film

Cuyahoga Community College Catalog 2017-2018 43
Foreign Languages

CHIN-1011 Beginning Chinese Language and Culture I 4
CHIN-1021 Beginning Chinese Language and Culture II 4
FREN-1010 Beginning French I 4
FREN-1020 Beginning French II 4
FREN-1040 Study Abroad in Quebec - Beginner Level 4
FREN-2010 Intermediate French I 3
FREN-2020 Intermediate French II 3
FREN-2040 Study Abroad in Quebec - Intermediate Level 4
FREN-2410 French Conversation and Composition 3
GER-1010 Beginning German I 4
GER-1020 Beginning German II 4
GER-2010 Intermediate German I 3
GER-2020 Intermediate German II 3
ITAL-1010 Beginning Italian I 4
ITAL-1020 Beginning Italian II 4
ITAL-2010 Intermediate Italian I 3
ITAL-2020 Intermediate Italian II 3
ITAL-2410 Italian Conversation and Composition 3
ITAL-2420 Italian Civilization, Culture and Literature 3
JAPN-1011 Beginning Japanese Language and Culture I 4
JAPN-1021 Beginning Japanese Language and Culture II 4
JAPN-2011 Intermediate Japanese Language and Culture I 4
JAPN-2021 Intermediate Japanese Language and Culture II 4
JAPN-2411 Advanced Japanese Language and Culture I 3
JAPN-2421 Advanced Japanese Language and Culture II 3
RUSS-1010 Beginning Russian I 4
RUSS-1020 Beginning Russian II 4
RUSS-2010 Intermediate Russian I 3
RUSS-2020 Intermediate Russian II 3
RUSS-2410 Russian Conversation and Composition 3
RUSS-2420 Russian Literature and Culture 3
SPAN-1011 Beginning Spanish Language and Cultures I 4
SPAN-1021 Beginning Spanish Language and Culture II 4
SPAN-1030 Spanish for Law Enforcement 4
SPAN-2010 Intermediate Spanish Language and Culture I 3
SPAN-2020 Intermediate Spanish Language and Cultures II 3
SPAN-2411 Spanish Conversation & Composition 3

Speech Communication

SPCH-1000 Fundamentals of Interpersonal Communication 3
SPCH-1010 Fundamentals of Speech Communication 3
SPCH-101H Honors Fundamentals of Speech Communication 3
SPCH-1050 Voice and Diction 3
SPCH-1210 Group Discussion 3
SPCH-2000 Introduction to Communication Theory 3
SPCH-2010 3
SPCH-2020 Interviewing 3
SPCH-202A Interviewing Overview 1
SPCH-202B Selection Interviewing 1
SPCH-202C Workplace Interviewing 1
SPCH-2050 Oral Interpretation 3
SPCH-2060 Interviewing for Information 1
SPCH-2070 Relational Interviewing 1
SPCH-2110 3
SPCH-2120 Forensics Activity 1
SPCH-2130 Business and Professional Communication 3
SPCH-2150 Introduction to Speech Pathology 3
SPCH-2160 Intercultural Communication 3
SPCH-2180 Principles of Phonetics 3

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 9 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>
<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-1370</td>
<td>Mathematics for Elementary and Middle School Teachers I</td>
<td>4</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>
</tr>
<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>
</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:

Arts and Humanities

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-161H</td>
<td>Honors Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-162H</td>
<td>Honors Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-2520</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

English 2000-level Literature courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</td>
<td>3</td>
</tr>
</tbody>
</table>

Foreign Languages

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-101</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-102</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-101</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-102</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
</tbody>
</table>
### Degree and Certificate Program Requirements

#### JAPN-2021
- Intermediate Japanese Language and Culture II
- 4

#### JAPN-2411
- Advanced Japanese Language and Culture I
- 3

#### JAPN-2421
- Advanced Japanese Language and Culture II
- 3

#### RUSS-1010
- Beginning Russian I
- 4

#### RUSS-1020
- Beginning Russian II
- 4

#### RUSS-2010
- Intermediate Russian I
- 3

#### RUSS-2020
- Intermediate Russian II
- 3

#### RUSS-2410
- Russian Conversation and Composition
- 3

#### RUSS-2420
- Russian Literature and Culture
- 3

#### SPAN-1011
- Beginning Spanish Language and Cultures I
- 4

#### SPAN-1021
- Beginning Spanish Language and Culture II
- 4

#### SPAN-1030
- Spanish for Law Enforcement
- 4

#### SPAN-2010
- Intermediate Spanish Language and Culture I
- 3

#### SPAN-2020
- Intermediate Spanish Language and Cultures II
- 3

#### SPAN-2411
- Spanish Conversation & Composition
- 3

#### SPAN-2420
- Introduction to Spanish Culture, Civilization, and Literature
- 3

#### SPAN-2430
- Civilization, Culture, and Literature of Latin America
- 3

#### History

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Religious Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Speech Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Selection Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Workplace Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2120</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2130</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2150</td>
<td>Introduction to Speech Pathology</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2180</td>
<td>Principles of Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1010</td>
<td>Theatre Appreciation</td>
<td>3</td>
</tr>
</tbody>
</table>

Theatre (only listed courses can be used to meet requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA-1100</td>
<td>Survey and Appreciation of American Musical Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
<td>3</td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women’s Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Women’s Studies (only listed courses can be used to meet requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WST-1520</td>
<td>Women’s Films</td>
<td>3</td>
</tr>
<tr>
<td>WST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>WST-2030</td>
<td>Women and Art</td>
<td>3</td>
</tr>
</tbody>
</table>

Social and Behavioral Sciences

<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>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>4</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
<td>3</td>
</tr>
</tbody>
</table>

Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2700</td>
<td>The Economics of Money, Banking, and Financial Markets</td>
<td>3</td>
</tr>
</tbody>
</table>

Education

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1020</td>
<td>Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Geography

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG-1000</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
</tbody>
</table>

Journalism and Mass Communications

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMC-1011</td>
<td>Introduction to Mass Communication</td>
<td>4</td>
</tr>
<tr>
<td>JMC-1320</td>
<td>Staff Practice</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1410</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

JMC-1610 | Survey of the Black Press           | 3            |
| JMC-2000 | Media Writing                       | 3            |
| JMC-2010 | News Writing                        | 4            |
| JMC-2220 | Broadcast Journalism                |              |
| JMC-2410 | Television Production               |              |
| JMC-2420 | Advanced Television Production      | 3            |
| JMC-2830 | Cooperative Field Experience        | 1-3          |

Political Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1040</td>
<td>Introduction to Peace and Conflict Studies</td>
<td>3</td>
</tr>
<tr>
<td>POL-2030</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2040</td>
<td>Conflict Resolution Skills</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-2060</td>
<td>Political Systems of Africa</td>
<td>3</td>
</tr>
<tr>
<td>POL-2070</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POL-2100</td>
<td>Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
<td>3</td>
</tr>
<tr>
<td>POL-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2130</td>
<td>Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td>POL-2140</td>
<td>Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>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>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>PSY-2010</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY-201H</td>
<td>Honors Child Growth and Development</td>
<td>3</td>
</tr>
<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-2050</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2060</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2070</td>
<td>Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2080</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2090</td>
<td>Psychology of Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2110</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2120</td>
<td>Multicultural Health Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2150</td>
<td>Quantitative Methods in Behavioral Science</td>
<td>4</td>
</tr>
</tbody>
</table>

Sociology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>SOC-1020</td>
<td>Social Institutions</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2010</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>SOC-201H</td>
<td>Honors Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2020</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2040</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2051</td>
<td>Introduction to Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2060</td>
<td>Human Behavior and the Social Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2070</td>
<td>Poverty in the United States</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2150</td>
<td>Deviance</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2210</td>
<td>Dating and Intimate Relationships</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2410</td>
<td>Sociology of Gender</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2510</td>
<td>Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>UST-1120</td>
<td>History of Cleveland</td>
<td>3</td>
</tr>
<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
<td>3</td>
</tr>
<tr>
<td>UST-2070</td>
<td>Urban Politics</td>
<td>3</td>
</tr>
<tr>
<td>UST-2640</td>
<td>American Urban History</td>
<td>3</td>
</tr>
<tr>
<td>WST-2010</td>
<td>Women in the World</td>
<td>3</td>
</tr>
<tr>
<td>WST-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>WST-2850</td>
<td>Practicum-Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
<td>3</td>
</tr>
<tr>
<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
<td>1</td>
</tr>
<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>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-150H</td>
<td>Honors 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>BIO-151H</td>
<td>Honors Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2010</td>
<td>Field Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2020</td>
<td>Tropical Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2050</td>
<td>Field Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2070</td>
<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-233A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-233B</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-234B</td>
<td></td>
<td>2</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>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-102H</td>
<td>Honors Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1080</td>
<td>Herbal Medicines and Natural Products</td>
<td>3</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>
</tr>
<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>
<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-2000</td>
<td>Analytical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2300</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2310</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>ESCI-1030</td>
<td>Survey of Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-103L</td>
<td>Survey of Earth Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1040</td>
<td>Weather Studies</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>Lab in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</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>
<tr>
<td>ESCI-1610</td>
<td>Geology of the National Parks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td>Lab in Geology of the National Parks</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>
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 following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Business degree:

<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>EMT-1401</td>
<td>Anatomy &amp; Physiology for Paramedics</td>
<td>4</td>
</tr>
<tr>
<td>MT-1242</td>
<td>Somatic Studies I</td>
<td>3</td>
</tr>
<tr>
<td>MT-1272</td>
<td>Somatic Studies II</td>
<td>3</td>
</tr>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
<td>2</td>
</tr>
</tbody>
</table>

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. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

Associate of Applied Science Degree

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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

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 subject areas (exclusive of developmental education, ENG-1001 Intensive College Reading & Writing, and English as a Second Language courses):
  - Students 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
### Degree and Certificate Program Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
</tbody>
</table>

**English**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</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>3</td>
</tr>
<tr>
<td>ENG-2010</td>
<td>Creative Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2020</td>
<td>Women Writers on the Experiences of Women</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2040</td>
<td>Poetry Workshop</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2050</td>
<td>Personal &amp; Reflective Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
</tbody>
</table>

**Foreign Languages**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>Beginning Spanish Language and Cultures I</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>Beginning Spanish Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1030</td>
<td>Spanish for Law Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-2010</td>
<td>Intermediate Spanish Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2020</td>
<td>Intermediate Spanish Language and Cultures II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2411</td>
<td>Spanish Conversation &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2420</td>
<td>Introduction to Spanish Culture, Civilization, and Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2430</td>
<td>Civilization, Culture, and Literature of Latin America</td>
<td>3</td>
</tr>
</tbody>
</table>

**Speech Communication**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-202A</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202B</td>
<td>Selection Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202C</td>
<td>Workplace Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2120</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2130</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2150</td>
<td>Introduction to Speech Pathology</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2180</td>
<td>Principles of Phonetics</td>
<td>3</td>
</tr>
</tbody>
</table>
### Mathematics

<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>
<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-1370</td>
<td>Mathematics for Elementary and Middle School Teachers I</td>
<td>4</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>
</tr>
<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>
</tr>
<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-161H</td>
<td>Honors Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-162H</td>
<td>Honors Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH-2520</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

### Natural and Physical Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
</tbody>
</table>

### Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
<td>3</td>
</tr>
<tr>
<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
<td>1</td>
</tr>
<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>BIO-1060</td>
<td>Environment, Ecology, and Evolution Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
</tbody>
</table>

### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-102H</td>
<td>Honors Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1080</td>
<td>Herbal Medicines and Natural Products</td>
<td>3</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>
</tr>
<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>
<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-2000</td>
<td>Analytical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2300</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2310</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
</tbody>
</table>

### Earth Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI-1030</td>
<td>Survey of Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-103L</td>
<td>Survey of Earth Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1040</td>
<td>Weather Studies</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>Lab in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</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>
<tr>
<td>ESCI-1610</td>
<td>Geology of the National Parks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td>Lab in Geology of the National Parks</td>
<td>1</td>
</tr>
</tbody>
</table>
PSCI-1010 Astronomy 3
PSCI-101L Astronomy Laboratory 1
PSCI-1020 Chemistry 3
PSCI-102L Chemistry Laboratory 1
PSCI-1030 Earth 3
PSCI-103L Earth Laboratory 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
MT-1242 Somatic Studies I 3
MT-1272 Somatic Studies II 3
MT-1280 Somatic Studies III 2

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.

<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>
<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-1370</td>
<td>Mathematics for Elementary and Middle School Teachers I</td>
<td>4</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>
</tr>
<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>
</tr>
<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-161H</td>
<td>Honors Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-162H</td>
<td>Honors Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-2100</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<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:

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ART-1010</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
</tbody>
</table>

Art (only listed courses will meet this requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART-202H</td>
<td>Honors 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>
</tr>
<tr>
<td>ART-203H</td>
<td>Honors Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
</tbody>
</table>

Dance (only listed courses will meet this requirement)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
</tbody>
</table>

English 2000-level Literature courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2310</td>
<td>American Literature I</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>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Foreign Languages</strong></td>
<td></td>
</tr>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>History</strong></td>
<td></td>
</tr>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Humanities</strong></td>
<td></td>
</tr>
<tr>
<td>HUM-1010</td>
<td>Introduction to Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1100</td>
<td>Leadership Development Studies</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2040</td>
<td>American Cinema</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2310</td>
<td>Screenwriting I</td>
<td>3</td>
</tr>
</tbody>
</table>
### Music

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</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>
<tr>
<td>MUS-2030</td>
<td>British Invasion</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2500</td>
<td>Music History and Literature I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2510</td>
<td>Music History and Literature II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2520</td>
<td>Jazz History I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2530</td>
<td>Jazz History II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2540</td>
<td>Jazz History Listening I</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2550</td>
<td>Jazz History Listening II</td>
<td>1</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
</tbody>
</table>

### Philosophy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2010</td>
<td>Comparative World Religion</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>PHIL-2031</td>
<td>Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2040</td>
<td>Philosophy of Art</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

### Religious Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

### Speech Communication

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202B</td>
<td>Selection Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202C</td>
<td>Workplace Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interviewing</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
</tbody>
</table>

### Theatre

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA-1000</td>
<td>Survey and Appreciation of American Musical Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
<td>3</td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women's Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

### Women's Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>WST-1520</td>
<td>Women's Films</td>
<td>3</td>
</tr>
<tr>
<td>WST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>WST-2030</td>
<td>Women and Art</td>
<td>3</td>
</tr>
</tbody>
</table>

### Social and Behavioral Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1010</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2700</td>
<td>The Economics of Money, Banking, and Financial Markets</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1020</td>
<td>Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1000</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1011</td>
<td>Introduction to Mass Communication</td>
<td>4</td>
</tr>
<tr>
<td>JMC-1320</td>
<td>Staff Practice</td>
<td>1</td>
</tr>
<tr>
<td>JMC-1410</td>
<td>Survey of the Black Press</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2000</td>
<td>Media Writing</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2010</td>
<td>News Writing</td>
<td>4</td>
</tr>
<tr>
<td>JMC-2220</td>
<td>Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>JMC-2410</td>
<td>Television Production</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2420</td>
<td>Advanced Television Production</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1040</td>
<td>Introduction to Peace and Conflict Studies</td>
<td>3</td>
</tr>
<tr>
<td>POL-2030</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2040</td>
<td>Conflict Resolution Skills</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-2060</td>
<td>Political Systems of Africa</td>
<td>3</td>
</tr>
<tr>
<td>POL-2070</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POL-2100</td>
<td>Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
<td>3</td>
</tr>
<tr>
<td>POL-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2130</td>
<td>Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td>POL-2140</td>
<td>Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning</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>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>PSY-2010</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY-201H</td>
<td>Honors Child Growth and Development</td>
<td>3</td>
</tr>
<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-2050</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2060</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2070</td>
<td>Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2080</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2090</td>
<td>Psychology of Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2110</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2120</td>
<td>Multicultural Health Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2150</td>
<td>Quantitative Methods in Behavioral Science</td>
<td>4</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>SOC-1020</td>
<td>Social Institutions</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-2020</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2040</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2051</td>
<td>Introduction to Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2060</td>
<td>Human Behavior and the Social Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2070</td>
<td>Poverty in the United States</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2150</td>
<td>Deviance</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2210</td>
<td>Dating and Intimate Relationships</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2410</td>
<td>Sociology of Gender</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2510</td>
<td>Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>UST-1120</td>
<td>History of Cleveland</td>
<td>3</td>
</tr>
<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
<td>3</td>
</tr>
<tr>
<td>UST-2070</td>
<td>Urban Politics</td>
<td>3</td>
</tr>
<tr>
<td>UST-2640</td>
<td>American Urban History</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
<td>3</td>
</tr>
<tr>
<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
<td>1</td>
</tr>
<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>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-150H</td>
<td>Honors 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>BIO-151H</td>
<td>Honors Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2010</td>
<td>Field Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2020</td>
<td>Tropical Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2050</td>
<td>Field Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2070</td>
<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>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</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-233A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-233B</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-234B</td>
<td></td>
<td>2</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>
</tbody>
</table>

### Chemistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-102H</td>
<td>Honors Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1080</td>
<td>Herbal Medicines and Natural Products</td>
<td>3</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>
</tr>
<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>
<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-2000</td>
<td>Analytical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2300</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2310</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
</tbody>
</table>

### Earth Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI-1030</td>
<td>Survey of Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-103L</td>
<td>Survey of Earth Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1040</td>
<td>Weather Studies</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>Lab in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</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>
<tr>
<td>ESCI-1610</td>
<td>Geology of the National Parks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td>Lab in Geology of the National Parks</td>
<td>1</td>
</tr>
</tbody>
</table>

### Physical Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1020</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSCI-102L</td>
<td>Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1030</td>
<td>Earth</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-103L</td>
<td>Earth Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

### Physics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td>Everyday Physics</td>
<td>2</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2250</td>
<td>Radiographic Physics and Quality Control</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-2320</td>
<td>General Physics II</td>
<td>5</td>
</tr>
</tbody>
</table>

### 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. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

### Associate of Technical Study Degree

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 I**
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, **ENG-1001 Intensive College Reading & Writing and English as a Second Language courses**):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
</tbody>
</table>

Foreign Languages

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
</tbody>
</table>
Degree and Certificate Program Requirements

JAPN-1011  Beginning Japanese Language and Culture I  4
JAPN-1021  Beginning Japanese Language and Culture II  4
JAPN-2011  Intermediate Japanese Language and Culture I  4
JAPN-2021  Intermediate Japanese Language and Culture II  4
JAPN-2411  Advanced Japanese Language and Culture I  3
JAPN-2421  Advanced Japanese Language and Culture II  3
RUSS-1010  Beginning Russian I  4
RUSS-1020  Beginning Russian II  4
RUSS-2010  Intermediate Russian I  3
RUSS-2020  Intermediate Russian II  3
RUSS-2410  Russian Conversation and Composition  3
RUSS-2420  Russian Literature and Culture  3
SPAN-1011  Beginning Spanish Language and Cultures I  4
SPAN-1021  Beginning Spanish Language and Culture II  4
SPAN-1030  Spanish for Law Enforcement  4
SPAN-2010  Intermediate Spanish Language and Culture I  3
SPAN-2020  Intermediate Spanish Language and Cultures II  3
SPAN-2411  Spanish Conversation & Composition  3
SPAN-2420  Introduction to Spanish Culture, Civilization, and Literature  3
SPAN-2430  Civilization, Culture, and Literature of Latin America  3

Speech Communication

SPCH-1000  Fundamentals of Interpersonal Communication  3
SPCH-1010  Fundamentals of Speech Communication  3
SPCH-101H  Honors Fundamentals of Speech Communication  3
SPCH-1050  Voice and Diction  3
SPCH-1210  Group Discussion  3
SPCH-2000  Introduction to Communication Theory  3
SPCH-2010  3
SPCH-2020  Interviewing  3
SPCH-202A  Interviewing Overview  1
SPCH-202B  Selection Interviewing  1
SPCH-202C  Workplace Interviewing  1
SPCH-2050  Oral Interpretation  3
SPCH-2060  Interviewing for Information  1
SPCH-2070  Relational Interviewing  1
SPCH-2110  3
SPCH-2120  Forensics Activity  1
SPCH-2130  Business and Professional Communication  3
SPCH-2150  Introduction to Speech Pathology  3
SPCH-2160  Intercultural Communication  3
SPCH-2180  Principles of Phonetics  3

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>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<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-1370</td>
<td>Mathematics for Elementary and Middle School Teachers I</td>
<td>4</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>
</tr>
<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>
</tr>
<tr>
<td>MATH-1500</td>
<td>Business Probability and Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1580</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-161H</td>
<td>Honors Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-162H</td>
<td>Honors Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-231H</td>
<td>Honors Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>Introduction to Linear Algebra</td>
<td>3</td>
</tr>
<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:
- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1010</td>
<td>Beginning American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>Beginning American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ASL-2010</td>
<td>Intermediate American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2020</td>
<td>Intermediate American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>ART-1010</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ART-1040</td>
<td>Survey of Non-Western Art</td>
<td>3</td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART-202H</td>
<td>Honors 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>
</tr>
<tr>
<td>ART-203H</td>
<td>Honors Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
<tr>
<td>DANC-1100</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2310</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>American Literature II</td>
<td>3</td>
</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>
</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-2450</td>
<td>Introduction to Literature: Science Fiction</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>
</tr>
<tr>
<td>ENG-2601</td>
<td>Literature for Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2700</td>
<td>World Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2710</td>
<td>Shakespeare</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ENG-2740</td>
<td>Literature and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2760</td>
<td>Detective Fiction: Mystery, Murder, and Malice</td>
<td>3</td>
</tr>
<tr>
<td>CHIN-1011</td>
<td>Beginning Chinese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>CHIN-1021</td>
<td>Beginning Chinese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>Beginning French I</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>Beginning French II</td>
<td>4</td>
</tr>
<tr>
<td>FREN-1040</td>
<td>Study Abroad in Quebec - Beginner Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>Intermediate French I</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2020</td>
<td>Intermediate French II</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2040</td>
<td>Study Abroad in Quebec - Intermediate Level</td>
<td>4</td>
</tr>
<tr>
<td>FREN-2410</td>
<td>French Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>FREN-2420</td>
<td>French Civilization and Literature</td>
<td>3</td>
</tr>
<tr>
<td>GER-1010</td>
<td>Beginning German I</td>
<td>4</td>
</tr>
<tr>
<td>GER-1020</td>
<td>Beginning German II</td>
<td>4</td>
</tr>
<tr>
<td>GER-2010</td>
<td>Intermediate German I</td>
<td>3</td>
</tr>
<tr>
<td>GER-2020</td>
<td>Intermediate German II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-1010</td>
<td>Beginning Italian I</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-1020</td>
<td>Beginning Italian II</td>
<td>4</td>
</tr>
<tr>
<td>ITAL-2010</td>
<td>Intermediate Italian I</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2020</td>
<td>Intermediate Italian II</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2410</td>
<td>Italian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ITAL-2420</td>
<td>Italian Civilization, Culture and Literature</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-1011</td>
<td>Beginning Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-1021</td>
<td>Beginning Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2011</td>
<td>Intermediate Japanese Language and Culture I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2021</td>
<td>Intermediate Japanese Language and Culture II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN-2411</td>
<td>Advanced Japanese Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>JAPN-2421</td>
<td>Advanced Japanese Language and Culture II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-1010</td>
<td>Beginning Russian I</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-1020</td>
<td>Beginning Russian II</td>
<td>4</td>
</tr>
<tr>
<td>RUSS-2010</td>
<td>Intermediate Russian I</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2020</td>
<td>Intermediate Russian II</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2410</td>
<td>Russian Conversation and Composition</td>
<td>3</td>
</tr>
<tr>
<td>RUSS-2420</td>
<td>Russian Literature and Culture</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>Beginning Spanish Language and Cultures I</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>Beginning Spanish Language and Cultures II</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-1030</td>
<td>Spanish for Law Enforcement</td>
<td>4</td>
</tr>
<tr>
<td>SPAN-2010</td>
<td>Intermediate Spanish Language and Culture I</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2020</td>
<td>Intermediate Spanish Language and Cultures II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2411</td>
<td>Spanish Conversation &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>SPAN-2420</td>
<td>Introduction to Spanish Culture, Civilization, and Literature</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>SPAN-2430</td>
<td>Civilization, Culture, and Literature of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1010</td>
<td>History of Civilization I</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>
<td>3</td>
</tr>
<tr>
<td>HIST-102H</td>
<td>Honors History of Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>United States History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-151H</td>
<td>Honors United States History to 1877</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>HIST-1610</td>
<td>American Studies</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1630</td>
<td>History of Immigration in America</td>
<td>3</td>
</tr>
<tr>
<td>HIST-1700</td>
<td>History of Africa</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>Islam to the Modern Middle East</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2040</td>
<td>Native American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>History of Russia to 1917</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2060</td>
<td>Modern Russian History and Politics</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2070</td>
<td>African American Women-History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2080</td>
<td>Latin American History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2090</td>
<td>Ohio History</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>African American History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>African American History 1877-present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2520</td>
<td>Hitler and the Holocaust</td>
<td>3</td>
</tr>
<tr>
<td>HIST-2660</td>
<td>Women in American History</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1010</td>
<td>Introduction to Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1020</td>
<td>The Individual in Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1030</td>
<td>The Individual in Cosmos</td>
<td>3</td>
</tr>
<tr>
<td>HUM-1100</td>
<td>Leadership Development Studies</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2040</td>
<td>American Cinema</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2310</td>
<td>Screenwriting I</td>
<td>3</td>
</tr>
<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>
<tr>
<td>MUS-2030</td>
<td>British Invasion</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2500</td>
<td>Music History and Literature I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2510</td>
<td>Music History and Literature II</td>
<td>3</td>
</tr>
<tr>
<td>MUS-2520</td>
<td>Jazz History I</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2530</td>
<td>Jazz History II</td>
<td>2</td>
</tr>
<tr>
<td>MUS-2540</td>
<td>Jazz History Listening I</td>
<td>1</td>
</tr>
<tr>
<td>MUS-2550</td>
<td>Jazz History Listening II</td>
<td>1</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1010</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-101H</td>
<td>Honors Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2010</td>
<td>Comparative World Religion</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>PHIL-2031</td>
<td>Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2040</td>
<td>Philosophy of Art</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-208H</td>
<td>Honors Social Justice</td>
<td>3</td>
</tr>
<tr>
<td>REL-1010</td>
<td>Introduction to Religious Studies</td>
<td>3</td>
</tr>
<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>
<td>3</td>
</tr>
<tr>
<td>REL-2060</td>
<td>African-American Religious Experience</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1050</td>
<td>Voice and Diction</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1210</td>
<td>Group Discussion</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2000</td>
<td>Introduction to Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2010</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2020</td>
<td>Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-202A</td>
<td>Interviewing Overview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202B</td>
<td>Selection Interview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-202C</td>
<td>Workplace Interview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2050</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2060</td>
<td>Interviewing for Information</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2070</td>
<td>Relational Interview</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2110</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2120</td>
<td>Forensics Activity</td>
<td>1</td>
</tr>
<tr>
<td>SPCH-2130</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2150</td>
<td>Introduction to Speech Pathology</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2180</td>
<td>Principles of Phonetcs</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>THEA-2210</td>
<td>History of Theatre and Drama I</td>
<td>3</td>
</tr>
<tr>
<td>THEA-2220</td>
<td>History of Theatre &amp; Drama II</td>
<td>3</td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women's Studies</td>
<td>3</td>
</tr>
<tr>
<td>WST-1520</td>
<td>Women's Films</td>
<td>3</td>
</tr>
<tr>
<td>WST-2020</td>
<td>Women, Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>WST-2030</td>
<td>Women and Art</td>
<td>3</td>
</tr>
</tbody>
</table>

### Social and Behavioral Sciences

<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>ANTH-2010</td>
<td>Peoples and Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>ANTH-2030</td>
<td>Archaeological Field Methods</td>
<td>4</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1210</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON-1220</td>
<td>Economic Development of the American Economy</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2700</td>
<td>The Economics of Money, Banking, and Financial Markets</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1020</td>
<td>Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>EDUC-2050</td>
<td>Human Diversity in Education</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1000</td>
<td>Introduction to Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1030</td>
<td>Environmental Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG-1050</td>
<td>Africans in the Americas</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1011</td>
<td>Introduction to Mass Communication</td>
<td>4</td>
</tr>
<tr>
<td>JMC-1320</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>JMC-1410</td>
<td>Staff Practice</td>
<td>1</td>
</tr>
<tr>
<td>JMC-1610</td>
<td>Survey of the Black Press</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2000</td>
<td>Media Writing</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2010</td>
<td>News Writing</td>
<td>4</td>
</tr>
<tr>
<td>JMC-2420</td>
<td>Advanced Television Production</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2220</td>
<td>Broadcast Journalism</td>
<td>3</td>
</tr>
<tr>
<td>JMC</td>
<td>2410 Television Production</td>
<td>3</td>
</tr>
<tr>
<td>JMC-2830</td>
<td>Cooperative Field Experience</td>
<td>1-3</td>
</tr>
</tbody>
</table>

### Psychology

<table>
<thead>
<tr>
<th>Code</th>
<th>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>3</td>
</tr>
<tr>
<td>PSY-1050</td>
<td>Introduction to Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>PSY-2010</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY-201H</td>
<td>Honors Child Growth and Development</td>
<td>3</td>
</tr>
<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-2050</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2060</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2070</td>
<td>Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2080</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2090</td>
<td>Psychology of Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2100</td>
<td>Introduction to Aging</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2110</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2120</td>
<td>Multicultural Health Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-2150</td>
<td>Quantitative Methods in Behavioral Science</td>
<td>4</td>
</tr>
</tbody>
</table>

### Sociology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>SOC-1020</td>
<td>Social Institutions</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-2020</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2040</td>
<td>Introduction to Social Work</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2051</td>
<td>Introduction to Social Welfare</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2060</td>
<td>Human Behavior and the Social Environment</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2070</td>
<td>Poverty in the United States</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2150</td>
<td>Deviance</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2210</td>
<td>Dating and Intimate Relationships</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2310</td>
<td>Contemporary American Black-White Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2410</td>
<td>Sociology of Gender</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2510</td>
<td>Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-2550</td>
<td>Race and Ethnic Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

### Political Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1020</td>
<td>State &amp; Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-1040</td>
<td>Introduction to Peace and Conflict Studies</td>
<td>3</td>
</tr>
<tr>
<td>POL-2030</td>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2040</td>
<td>Conflict Resolution Skills</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-2060</td>
<td>Political Systems of Africa</td>
<td>3</td>
</tr>
<tr>
<td>POL-2070</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>POL-2100</td>
<td>Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>POL-2110</td>
<td>Terrorism and Counterterrorism</td>
<td>3</td>
</tr>
<tr>
<td>POL-2120</td>
<td>Women and Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-2130</td>
<td>Politics of Race</td>
<td>3</td>
</tr>
<tr>
<td>POL-2140</td>
<td>Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

### Urban Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>3</td>
</tr>
<tr>
<td>UST-1020</td>
<td>Urban Geography</td>
<td>3</td>
</tr>
<tr>
<td>UST-1120</td>
<td>History of Cleveland</td>
<td>3</td>
</tr>
</tbody>
</table>
### Degree and Certificate Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UST-2020</td>
<td>Urban Cultures</td>
<td>3</td>
</tr>
<tr>
<td>UST-2070</td>
<td>Urban Politics</td>
<td>3</td>
</tr>
<tr>
<td>UST-2640</td>
<td>American Urban History</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Natural and Physical Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1210</td>
<td>Human Evolution</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1040</td>
<td>The Cell and DNA</td>
<td>3</td>
</tr>
<tr>
<td>BIO-104L</td>
<td>The Cell and DNA Laboratory</td>
<td>1</td>
</tr>
<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>BIO-1060</td>
<td>Environment, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIO-106L</td>
<td>Environment, Ecology, &amp; Evolution Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>Horticultural Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO-150H</td>
<td>Honors 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>BIO-151H</td>
<td>Honors Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2010</td>
<td>Field Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2020</td>
<td>Tropical Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2050</td>
<td>Field Zoology</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2060</td>
<td>Principles of Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2070</td>
<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-233A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-233B</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-234A</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIO-234B</td>
<td></td>
<td>2</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>
</tbody>
</table>

#### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-102H</td>
<td>Honors Introduction to Organic Chemistry and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1080</td>
<td>Herbal Medicines and Natural Products</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>Honors General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-130L</td>
<td>General Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-1310</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-131H</td>
<td>Honors General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-131L</td>
<td>General Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM-2000</td>
<td>Analytical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2300</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM-2310</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Earth Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI-1030</td>
<td>Survey of Earth Science</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-103L</td>
<td>Survey of Earth Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1040</td>
<td>Weather Studies</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>Lab in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>Honors Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>Lab in Physical Geology</td>
<td>1</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>
<tr>
<td>ESCI-1610</td>
<td>Geology of the National Parks</td>
<td>3</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td>Lab in Geology of the National Parks</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Physical Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1020</td>
<td>Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-102L</td>
<td>Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSCI-1030</td>
<td>Earth</td>
<td>3</td>
</tr>
<tr>
<td>PSCI-103L</td>
<td>Earth Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Physics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS-1010</td>
<td>Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-101L</td>
<td>Astronomy Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td>Everyday Physics</td>
<td>2</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2250</td>
<td>Radiographic Physics and Quality Control</td>
<td>4</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS-2320</td>
<td>General Physics II</td>
<td>5</td>
</tr>
</tbody>
</table>

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

<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>EMT-1401</td>
<td>Anatomy &amp; Physiology for Paramedics</td>
<td>4</td>
</tr>
<tr>
<td>MT-1242</td>
<td>Somatic Studies I</td>
<td>3</td>
</tr>
<tr>
<td>MT-1272</td>
<td>Somatic Studies II</td>
<td>3</td>
</tr>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
<td>2</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. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

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.

General Curriculum Information
Academic Credit
One (1) semester hour of college credit in a seat based, blended or online course 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 a full-term 16 week 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 all three hours are in the lab. 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. Credit is also awarded for other hours such as directed practice, practicum, cooperative work experience and field experience.

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 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. 108) and Nursing (p. 109) programs.

Semester Course Numbering
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:

<table>
<thead>
<tr>
<th>Description</th>
<th>Freshman-Level No.</th>
<th>Sophomore-Level No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental Courses</td>
<td>0800 to 0990</td>
<td></td>
</tr>
<tr>
<td>Introductory/Non-Majors/Basic Courses</td>
<td>1000 to 1290</td>
<td>- - -</td>
</tr>
<tr>
<td>Majors/Technical Courses</td>
<td>1300 to 1790</td>
<td>2000 to 2790</td>
</tr>
<tr>
<td>Special Topics Courses</td>
<td>1800 to 1819</td>
<td>2800 to 2819</td>
</tr>
<tr>
<td>Honors Special Topics</td>
<td>180H</td>
<td>280H</td>
</tr>
<tr>
<td>Independent Study/Research Courses</td>
<td>1820</td>
<td>2820</td>
</tr>
<tr>
<td>Honors Independent Study/Research</td>
<td>182H</td>
<td>282H</td>
</tr>
<tr>
<td>Independent Study/Research Courses (2 hour Lab)</td>
<td>182S</td>
<td>282S</td>
</tr>
<tr>
<td>Independent Study/Research Courses (3 hour Lab)</td>
<td>182T</td>
<td>282T</td>
</tr>
<tr>
<td>Cooperative Education Courses</td>
<td>- - -</td>
<td>2830</td>
</tr>
<tr>
<td>Practicum</td>
<td>1840 to 1870</td>
<td>2840 to 2870</td>
</tr>
<tr>
<td>Clinicals (Nursing and Practical Nursing only)</td>
<td>1880 to 1900</td>
<td>2880 to 2900</td>
</tr>
<tr>
<td>Directed Practice</td>
<td>1910 to 1930</td>
<td>2910 to 2930</td>
</tr>
<tr>
<td>Field Experience</td>
<td>1940 to 1960</td>
<td>2940 to 2960</td>
</tr>
<tr>
<td>Seminar</td>
<td>1970 to 1980</td>
<td>2970 to 2980</td>
</tr>
<tr>
<td>Capstone Course</td>
<td>- - -</td>
<td>2990</td>
</tr>
</tbody>
</table>

1 Prior to Summer 2006, Special Topics courses were numbered as follows: 1800/2800 (lecture); 181S/281S (2 hour lab); 181T/281T (3 hour lab); and 181P/281P (practicum).
2 Radiography uses additional course numbers.

Note:
- Modular courses are identified by use of the letters “A through E” instead of fourth digit such as “0”.
- Some laboratory courses are identified by the letter “L” instead of fourth digit such as “0”.
- Independent Study/Research labs are identified by letters “S” and “T” instead of the fourth digit “0”.
- Honors courses are identified by use of the letters “H” instead of fourth digit such as “0” (such as ENG-101H Honors College Composition I for ENG-1010 College Composition I).
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 identical in course content but are listed in different subject areas; or a standard course and its modular courses. When an equivalency exists, the equivalent courses may be treated as repeats: credit is earned for only one completion and the lower of the two grades is not computed into the student’s grade point average. Learn more (p. 638) about equivalencies 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

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. “P” represents “C” or better work. The credits earned are awarded, but are not included in the computation of a student’s cumulative grade point average.

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 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–0 pts.): 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 = 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, TAP, 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</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 care 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 (http://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 (http://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 Option</th>
<th>GPA Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cum laude (with honors)</td>
<td>3.50 – 3.69</td>
</tr>
<tr>
<td>Magna cum laude (with great honors)</td>
<td>3.70 – 3.89</td>
</tr>
<tr>
<td>Summa cum laude (with highest honors)</td>
<td>3.90 – 4.00</td>
</tr>
</tbody>
</table>

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
Students who have received credit for a course with a grade of D or higher or a P grade may only repeat a course 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/NP grades do not count toward grade point average calculations. Federal financial aid funds may be used only one time to repeat previously passed courses.

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. Also, since repeating a course may have an adverse effect on financial aid eligibility, 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 (http://www.tri-c.edu/student-resources/enrollment-guide.html), 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, Tri-C 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 and cost per credit are the same as on-campus courses.

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

For assistance with online learning technology, call 216-987-4257.
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.

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 www.tri-c.edu/online-learning/technical-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 setting approved by faculty. While proctors must be approved by the instructor, some suitable proctors may include Tri-C Assessment 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. More information on proctored testing is available at www.tri-c.edu/online-learning/proctoring.html.

Distance Learning
Smart CLASS formerly known as Cable College 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://www.tri-c.edu/online-learning/smart-tv.html.
- Students enrolled in Smart CLASS are able to replay their courses at any time at: 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

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.

How to Apply

- Complete the online application at www.tri-c.edu/apply (http://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.

Residency Requirements

Tri-C is supported by Cuyahoga County taxpayers and assisted by the State of Ohio. Students who are not Cuyahoga County residents 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 (http://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 an I-20 form from Tri-C must successfully complete a minimum of 12 credits per semester in order to maintain status. No more than one three-credit course taken via distance learning/e-learning will apply toward the 12-credit minimum. 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 (http://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>Location</th>
<th>Phone Number</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>216-987-2118</td>
<td>Student Services Building, Room 1602</td>
</tr>
<tr>
<td>Metro</td>
<td>216-987-4167</td>
<td>Student Services Building, Room 909</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>

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.

Transfer from Tri-C to a Four-Year Institution

As a student works toward completion of an associate degree, they should also begin the process of a successful transfer. 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 predetermined 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 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 admissions and/or advising representative at the transfer institution who will have the most recent information on that institution’s procedures and requirements. Acceptance of transfer credit is always at the discretion of the transfer 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. By selecting these courses, the student ensures 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 completes an associate degree is more likely to excel academically and graduate with a bachelor’s degree. Learn more (https://www.ohiohighered.org/transfer/transfermodule) about the Ohio Transfer Module. Learn more (https://www.ohiohighered.org/transfer/tag) about Transfer Assurance Guides.

Courses that are not part of the OTM or 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 (http://www.tri-c.edu/transfer-center) about approved articulation agreements. A 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. 63) about semester course numbering.

The student should schedule a meeting with the transfer college or university’s admissions office to make sure they have met all the transfer institution’s admission and transfer requirements. As part of its admission review process, the transfer institution will require an official transcript of courses the student has completed. Learn more (http://www.tri-c.edu/transcripts) 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).

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 (http://www.tri-c.edu/get-started/visiting-students.html) for more information.

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. Taking a 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 (http://www.tri-c.edu/college-credit-plus) for more information.

Program 60 Admission

Through Program 60, Ohio residents ages 60 and older may register for regularly scheduled credit and select noncredit courses on an audit, tuition-free, space-available basis. Registrations are processed in person through the Enrollment Center on the date published for Program 60 registration in the Enrollment Guide. Program 60 registration will not be accepted prior to the dates advertised. Visit www.tri-c.edu/program60 (http://www.tri-c.edu/program60) for more information.

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.techprep4u.com (http://www.techprep4u.com) 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 (https://www.ohiohighered.org/transfer/ct2/ctags) about Career-Technical Credit information regarding Career-Technical Assurance Guides (CTAGs), which identify specific courses that are part of the statewide guarantee. Learn more (https://www.ohiohighered.org/transfer/ct2) about Career-Technical credit transfer. Learn more (https://www.ohiohighered.org/transfer/ct2/how-to-access-ct2-credit) about verification forms and accessing CT² credit.

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.

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.

Assessment Services
All Tri-C campuses and the Brunswick University Center offer assessment 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 retake their placement tests one time without charge within two years of the initial test date. Placement scores will be valid for a maximum of two years after the test administration date. 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 ACCUPLACER 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 the mandatory review prior to testing for the first time. Contact your campus Testing Center for more information about the mandatory review 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.

Cancelled Classes
Tri-C must 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.

**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. 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.
Paying for College

Tuition and Fees
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. 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.

The following schedule governs all tuition and fee liability and available refunds for full-term courses of academic credit.

<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.

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
At Cuyahoga Community College, 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 Cuyahoga Community College (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.

This program rewards you for enrolling each term and provides a way to complete your degree or certificate within two years.

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 fafsa.ed.gov
- Maintain a 2.0 or higher cumulative grade point average; and
- Sign a 30 Credit Hour Standard Program Agreement Form
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 (http://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 (http://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>Session</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 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.

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.

Federal Perkins Loan Program

Students who apply for Perkins loans will be awarded 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 and through the grace period after the borrower leaves school, all interest is paid by the federal government on subsidized loans. Loan amounts are based on term enrollment. Repayment begins six months after the student leaves school or drops below 6 credits. Students must complete the FAFSA to be considered for the Perkins Loan Program. In some instances, based on the student’s course of study, part of the Perkins Loan may be forgiven or cancelled after employment in selected fields of study and a period of repayment of the loan. Contact the Student Financial Aid & Scholarships Office for more information.

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

**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
- Disability Services for Students – Access Program
- First Year Experience
- 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. 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* (https://my.tri-c.edu) 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, government websites and group activities. 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 http://itservices.tri-c.edu/network/student-email-with-office-365.html 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.
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.

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
Campus Police and Security Services or using the online parking appeal form located at www.tri-c.edu/parking (http://www.tri-c.edu/parking).

Penalty for nonpayment may include withheld grades, registration hold, impounded vehicle or warrant citation (municipal court). Parking and traffic rules and regulations have been adopted by the Cuyahoga Community College Board of Trustees to regulate traffic and parking on Tri-C property. Motorcycles, motorbikes and motor scooters are subject to the same regulations as automobiles. Motor vehicle laws of the State of Ohio are in full effect on Tri-C property.

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 (http://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 (http://www.tri-c.edu/ask).

Career Centers

The Career Centers are a College-wide network committed to providing a variety of free services to support and prepare students with knowledge and skills that will guide them to achievement of their professional goals and dreams. Students, alumni, veterans, dislocated workers and community members have the opportunity to learn skills that will enable them to launch a successful job search through informative workshops and individualized career coaching. Located on each Tri-C campus, the Career Centers are staffed with experienced career coaches. The services provided at each Career Center include skill and interest assessments, co-op and internship identification and preparation, job shadowing, career development and job coaching, job search preparation, online career tools, assistance with creating resumes and cover letters, interviewing preparation and job acquisition assistance.

The Career Centers partner with employers throughout Northeast Ohio to identify experiential learning opportunities, connect students with co-op and internship opportunities, and provide career-related resources. They also provide linkages to other College-wide services including enrollment, financial aid, counseling and the Transfer Centers.

The Career Centers are your resource for all experiential learning and career-related needs. Visit www.tri-c.edu/careerservices (http://www.tri-c.edu/careerservices) for more information.

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 and group 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/

Disability Services for Students – Access Program

The Access Program provides classroom accommodations and support for Tri-C students with disabilities. Students must make an appointment to meet with an Access 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 Access Program is funded by the U.S. Department of Education, the State of Ohio and Tri-C. For more
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.

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, as well as numerous Tri-C and campus committees.

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.

The following clubs and organizations may be found on one or more of the Tri-C campuses each semester:

- Access Club
- Active Minds at Cuyahoga Community College
- American Sign Language Club
- Association of Diagnostic Medical Imaging Technology Club
- Biology Club
- Business Club
- Campus Activities Board
- Campus Ministry
- Captioning and Court Reporting Club
- Circle K International
- Commuter Club
- Creative Arts Student Alliance (C.A.S.A.)
- Creative Writing Club
- Dance Club
- Dietetic Tech Club
- Digital Cinema Club
- Disney Fanime’ Club
- Drama Club
- Educators of Today and Tomorrow Club
- Electroneurodiagnostic Technology Club
- Engineering Club
- Eta Sigma Delta Hospitality Management Honor Society
- Focus on Christ Club
- French Club
- Graphics Arts Club
- Health Information Management Club
- Hospitality Management Club
- Interior Design Student Association (INTD-A)
- Information Technology Student Association
- International Club
- Japanese Culture Club
- Journalism Club
- Lambda Gay-Straight Alliance
- Mathematics Club
- Medical Assisting Club
- Medical Laboratory Technology Club
- Multicultural International Club
- Music Club
- Muslim Student Association
- Nuclear Medicine Club
- Nursing Student Association
- Occupational Therapy Assistanting Club
- PA Student Falkenstein Society
- Personal Finance and Investment Club
- Pharmacy Club
- Phi Theta Kappa Honor Society
- Philosophy Club
- National Association of Landscape Professionals
- Personal Finance Investment Club
- Psychology Club
- Physical Therapy Club
- Pottery Club
- Religious Clubs
- Respiratory Care Club
- Russian Club
- Spanish Club
- Student Government
- Student Newspaper, The Voice
- Students In Free Enterprise (S.I.F.E.)
- Student Nurses’ Association
- Student Peace Alliance

information, visit www.tri-c.edu/access (http://www.tri-c.edu/access) or call the Access office on your 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. Independent contests are scheduled with colleges from Pennsylvania, New York, Kentucky, and Illinois.

The official colors of Tri-C athletic programs are teal, white and black. The name of Tri-C’s teams is the “Challengers.” 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.

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 (http://www.ptk.org) and www.ohioptk.org (http://www.ohioptk.org) for more information.

Tri-C has four chapters: Alpha Epsilon Eta (East), Alpha Zeta Delta (Metro), Chi Omega (West) 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 (http://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 with state-of-the-art fitness equipment, secure locker rooms and shower facilities, dance studio, and a newly resurfaced indoor track. Outdoor facilities include an all-weather track and an open field.

The Metropolitan Campus indoor facilities include a fitness center, gymnasium, swimming pool, weight training room, dance studio, and locker and shower rooms. The Recreation & Wellness Center is equipped with state-of-the-art fitness equipment, studio classroom space for group instruction, locker room facilities, and a demonstration kitchen for workshops/seminars.

The indoor facilities at the Western Campus include a fitness center, gymnasium, swimming pool, weight training room, and locker and shower rooms. Outdoor facilities provided are an all-weather track, soccer fields, lighted baseball field, and softball field.

Cuyahoga Community College Foundation and Alumni Relations
The Cuyahoga Community College (Tri-C®) Foundation was chartered in 1973 as a 501(c)(3) charitable organization. The mission of the Tri-C Foundation is to create funding opportunities for scholarships and educational program development and enhancement at Cuyahoga Community College.

Thanks to continued financial support from business partners, corporations, foundations, governmental agencies, friends, Tri-C employees, alumni and philanthropic organizations throughout the area, the Tri-C Foundation provides scholarships to many outstanding students with financial need. The need is greater than ever for enhancing access to higher education for the many students in our community who, without some financial aid, cannot access or continue their education.

Both the Tri-C Foundation and the College work closely with the community to build strong partnerships and seek financial support for the development and enhancement of educational programs in response to workforce and student needs.

For more than 50 years, investments in Tri-C have paid immense dividends. Tri-C is the largest community college in Ohio, serving more than 55,000 students each year on its campuses, at multiple off-campus sites and through online learning.

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/foundation (http://www.tri-c.edu/foundation).
Cuyahoga Community College Alumni Initiative

The Cuyahoga Community College Foundation is pleased to lead Tri-C’s Alumni Initiative. Alumni are valued members of our College family, contributing to a vibrant community. Alumni of Cuyahoga Community College include professionals across the region, the country, and the world. They represent all ages and every sector of the economy, as well as the cultural diversity of our region. Tri-C is proud to have awarded more than 90,000 degrees and certificates since the College’s first commencement ceremony.

Services and benefits available to Cuyahoga Community College alumni include:

- An alumni website: www.tri-c.edu/alumni (http://www.tri-c.edu/alumni);
- Discounts and benefits for goods and services across the county, available at www.tri-c.edu/alumni (http://www.tri-c.edu/alumni);
- Job search, career resources and professional networking opportunities;
- E-newsletter sharing news including professional achievements of alumni, College information and special discount offers.

To get involved in this initiative, contact Alumni Relations at 216-987-4868, via email at alumirelations@tri-c.edu or visit www.tri-c.edu/alumni (http://www.tri-c.edu/alumni) to learn more.

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 5,000 veterans will return over the next four years. Of that number, 700 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 Upward Bound Program has a 35+ 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 postsecondary 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 2016-2017, 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 Upward Bound 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 (http://www.tri-c.edu/veterans) for more information.

Veterans Upward Bound (VUB)

VUB provides a variety of support services to assist veteran students in the successful pursuit and completion of their educational and career goals. VUB 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. The VUB Program is funded by the U.S. Department of Education. Call 216-987-4938 or visit VUB at www.tri-c.edu/veterans/veterans-upward-bound (http://www.tri-c.edu/veterans/veterans-upward-bound).
Student Rights and Responsibilities

For a comprehensive list of all 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 for the entire term are required to withdraw 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. Students who do not attend the full session are responsible for withdrawing from the course(s).

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 log 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.

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/.
TRANSFER INFORMATION

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

Transferring Credits

**The Bachelor’s Degree**

Associate of Arts and Associate of Science degrees are designed to prepare students 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 Associate of Arts and Associate of Science degrees.

An option in some Tri-C career/technical programs in the Associate of Applied Business and the Associate of Applied Science curriculum enables students to earn an associate degree in these programs at Tri-C and then transfer to a four-year institution to work toward a baccalaureate degree in the designated technical field or other programs. Credits earned at Tri-C 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 a Tri-C counselor.

It is the responsibility of the student to become acquainted with and follow the requirements for the selected method of transferring 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.

Transfer students 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 the state of Ohio. After transferring, students will specialize in a major at the receiving institution during their junior and senior years. Learn more (p. 88) about the Ohio Transfer Module.

**Ohio Transfer To Degree Guarantees**

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-assisted
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 (e.g. transfer assurance guides, transfer modules, associate and bachelor's degrees). Learn more (https://www.ohiohighered.org/transfer/policy) about the Ohio Articulation and Transfer Policy.

Ohio Articulation Number (OAN): When a course at an Ohio public higher education institution 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 their equivalency at any Ohio public higher education institution that has OAN approval during the same time period. Assurance applies not only to the equivalency of the courses, but to their application to the degree objective. Examples of OANs include OSS (Ohio Social Sciences), OSC (Ohio Sciences), and OET (Ohio Engineering Technologies). Courses within the Ohio Transfer Module (OTM) may also be part of an approved Transfer Assurance Guide (TAG).

Ohio Transfer Module (OTM): OTM consists of general education course requirements guaranteed to transfer among all Ohio public institutions of higher education. Students who intend to transfer after completing an associate degree should select their general education courses from the state approved Tri-C OTM courses. For course selection assistance, schedule an appointment with a counselor. An OTM course may also be a TAG course. Learn more (https://transfercredit.ohio.gov/pg_20?8656594666995) about Ohio Department of Higher Education's information on OTM courses. Learn more (p. 88) about Tri-C OTM courses.

Transfer Assurance Guides (TAGs): TAGs are lower division courses that are part of an academic major. Students who intend to transfer after completing an associate degree should schedule an appointment with a counselor to choose appropriate Tri-C TAG courses for their intended bachelor's major. Learn more (https://transfercredit.ohio.gov/pg_20?8656594666995) about Ohio Department of Higher Education's information on TAG courses. Learn more (p. 92) about Tri-C TAG courses.

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. Schedule an appointment with a counselor to review your military transcript for potential MTAG credit. Learn more (https://transfercredit.ohio.gov/ap/35712230603297588.html) about Ohio Department of Higher Education's information on MTAG courses. Learn more (p. 105) about Tri-C MTAG courses.

Career Technical Assurance Guides (CTAGs): CTAGs provide recognition of learning to students who have completed approved adult and secondary career-technical coursework or experiential learning. 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. Schedule an appointment with a counselor to discuss details. Learn more (https://transfercredit.ohio.gov/pg_97?:NO:9:) about Ohio Department of Higher Education’s information on CTAG courses. Learn more (p. 95) about Tri-C CTAG courses.

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 (https://reportscems.transfercredit.ohio.gov/pg_87?:NO:8:) about Ohio Department of Higher Education’s information on AP and how your score may be applied.

College Level Examination Program (CLEP): Students who are interested in earning college credit for subject knowledge and skills that they've acquired through prior learning should consider taking a CLEP exam. Learn more (https://clep.collegeboard.org) about available exams. Learn more (http://www.tri-c.edu/transfer-center/documents/clep-exams-and-course-equivalencies.pdf) about how your score applies at Tri-C.

One Year Option: The One-Year Option builds upon Ohio’s existing articulation and transfer processes to help students achieve strong post-secondary foundations and futures. This option allows students at Ohio Technical Centers who earned identified certifications/licensures/industry recognized credentials in a 600+ clock-hour pathway approved by the Chancellor to receive up to 30 technical credit hours. The 30 semester hours will be awarded as a block of credit rather than credit for specific courses. This credit would be awarded toward an Associate of Technical Studies degree upon successfully enrolling at Tri-C or another public college or university in Ohio. Learn more (https://www.ohiohighered.org/one-year-option/educators) about One-Year Option.

Apprenticeship Pathway Programs: The Apprenticeship Pathways initiative advocates for individuals completing apprenticeships by incorporating their learning into academic credit, thereby saving them time and money and encouraging them to advance their academic credentials to contribute to a strong workforce.

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

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 a 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**

After a 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 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 associate 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 (http://www.tri-c.edu/transcripts/order-transcripts.html) about requesting a transcript of grades

Associate Degree to Bachelor’s Degree

In general, courses in the Associate of Arts and Associate of Science degrees are designed to parallel the freshman and sophomore level courses at four-year colleges and universities. An option in some Tri-C career/technical programs in the Associate of Applied Business and the Associate of Applied Science curriculum enables students to earn an associate degree in these programs at Tri-C and then transfer to a four-year institution to work toward a baccalaureate degree in the designated technical field.

Credits earned at Tri-C in the two-plus-two option are transferable toward a four-year degree only at cooperating four-year colleges and universities. Students should consult with a Tri-C Counselor if interested in the two-plus-two career/technical transfer option.

Transfer Course Selection

Counselors will help students plan individual transfer programs using the above options. Students who are undecided about a major will be assisted in planning a transfer program that meets general admission requirements at the receiving school.

Tri-C offers preparatory or refresher courses in English composition, reading comprehension, mathematics, and speech communication for students who need to upgrade these basic skills. These courses are not designed for transfer but are intended to provide students the opportunity to improve their skills. To avoid taking a course that does not transfer, it is the student’s responsibility to select courses with the assistance of a Tri-C Counselor.

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 (https://www.ohiohighered.org/educators/initiatives-
overview/#otm) about OTM or see Tri-C’s approved courses below.

Note: Students should meet with a Counselor to assure that courses
selected are most appropriate for the receiving institution’s degree, major
and program requirements, and that the courses are consistent with Tri-
C’s minimum graduation requirements.

Ohio Articulation Number (OAN)
Learn more (p. 85) about OANs (select Ohio Transfer to Degree
Guarantees 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-1010</td>
<td>TME001</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td></td>
</tr>
<tr>
<td>ENG-1020</td>
<td>TME002</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ENG-102H</td>
<td></td>
</tr>
</tbody>
</table>

Oral Communication
All courses listed are OAN approved as TMOC for Ohio Transfer Module.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1010</td>
<td>OCM004</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>SPCH-101H</td>
<td></td>
</tr>
</tbody>
</table>

Mathematics, Statistics and Logic
Minimum of three semester hours.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1100</td>
<td>TMMSL</td>
</tr>
<tr>
<td>MATH-1190</td>
<td>TMM011</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>TMMSL</td>
</tr>
<tr>
<td>MATH-1380</td>
<td>TMM010</td>
</tr>
<tr>
<td>MATH-1410</td>
<td>TMM010</td>
</tr>
<tr>
<td>MATH-1420</td>
<td>TMMSL</td>
</tr>
<tr>
<td>MATH-1470</td>
<td>TMMSL</td>
</tr>
<tr>
<td>MATH-1480</td>
<td>TMM013</td>
</tr>
<tr>
<td>MATH-1490</td>
<td>TMMSL &amp; OBU009 (Course 1 of 2, both must be taken)</td>
</tr>
<tr>
<td>MATH-1500</td>
<td>TMMSL &amp; OBU009 (Course 2 of 2, both must be taken)</td>
</tr>
<tr>
<td>MATH-1530 (formerly 1521)</td>
<td>TMM001</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-153H (formerly 152H)</td>
<td></td>
</tr>
<tr>
<td>MATH-1530 &amp; MATH-1540</td>
<td>TMM002</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-153H &amp; MATH-154H</td>
<td></td>
</tr>
<tr>
<td>MATH-1540 (formerly 1510)</td>
<td>TMM003</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-154H (formerly 151H)</td>
<td></td>
</tr>
<tr>
<td>MATH-1580</td>
<td>TMM002</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>TMM005</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-161H</td>
<td></td>
</tr>
<tr>
<td>MATH-1610 &amp; MATH-1620</td>
<td>TMM017</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-161H &amp; MATH-162H</td>
<td></td>
</tr>
<tr>
<td>MATH-1620</td>
<td>TMM006</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-162H</td>
<td>TMM006</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>TMMSL</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>TMM018 &amp; OMT018</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MATH-231H</td>
<td>TMM018 &amp; OMT018</td>
</tr>
<tr>
<td>MATH-2410</td>
<td>TMM019 &amp; OMT019</td>
</tr>
<tr>
<td>MATH-2520</td>
<td>TMM020 &amp; OMT020</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1010</td>
<td></td>
</tr>
<tr>
<td>ART-1040</td>
<td></td>
</tr>
<tr>
<td>ART-2020</td>
<td>OAH005 (Course 1 of 2, both must be taken)</td>
</tr>
<tr>
<td>ART-2030</td>
<td>OAH005 (Course 2 of 2, both must be taken)</td>
</tr>
<tr>
<td>DANC-1100</td>
<td></td>
</tr>
<tr>
<td>ENG-2310</td>
<td>OAH053</td>
</tr>
<tr>
<td>ENG-2320</td>
<td>OAH054</td>
</tr>
<tr>
<td>ENG-2350</td>
<td>OAH055</td>
</tr>
<tr>
<td>ENG-2360</td>
<td>OAH056</td>
</tr>
<tr>
<td>ENG-2410</td>
<td></td>
</tr>
<tr>
<td>ENG-2420</td>
<td></td>
</tr>
<tr>
<td>ENG-2430</td>
<td></td>
</tr>
<tr>
<td>ENG-2510</td>
<td></td>
</tr>
<tr>
<td>ENG-2520</td>
<td></td>
</tr>
<tr>
<td>ENG-2601</td>
<td></td>
</tr>
</tbody>
</table>
ENG-2700 3 Cr.
ENG-2710 3 Cr.
ENG-2720 3 Cr.
ENG-2730 3 Cr.
HUM-1010 3 Cr.
HUM-1020 3 Cr.
HUM-1030 3 Cr.
JMC-1310 3 Cr.
MUS-1010 3 Cr.
MUS-1020 3 Cr.
MUS-1030 3 Cr.
MUS-1040 3 Cr.
MUS-1050 3 Cr.
MUS-2500 3 Cr.
MUS-2510 3 Cr.
MUS-2520 2 Cr.
MUS-2530 2 Cr.
PHIL-1000 3 Cr.
PHIL-1010 3 Cr.
PHIL-1010 OAH045 3 Cr.
PHIL-101H 3 Cr.
PHIL-1020 3 Cr.
PHIL-2010 3 Cr.
PHIL-2020 OAH046 3 Cr.
PHIL-202H 3 Cr.
PHIL-2031 3 Cr.
PHIL-2040 3 Cr.
PHIL-2050 3 Cr.
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.
ECON-1220 3 Cr.
ECON-2610 OSS005 4 Cr.
ECON-2620 OSS004 4 Cr.
GEOG-1010 OSS008 3 Cr.
GEOG-1030 3 Cr.
GEOG-1050 3 Cr.
GEOG-1510 3 Cr.
HIST-1010 OHS041 3 Cr.
HIST-101H 3 Cr.
HIST-1010 & HIST-1020 OHS009 3 Cr. & 3 Cr.
HIST-101H & HIST-102H 3 Cr. & 3 Cr.
HIST-1020 OHS042 3 Cr.
HIST-102H 3 Cr.
HIST-1510 OHS043 3 Cr.
HIST-151H 3 Cr.
HIST-1510 & HIST-1520 OHS010 3 Cr. & 3 Cr.
HIST-151H & HIST-152H OHS010 3 Cr. & 3 Cr.
HIST-1520 OHS044 3 Cr.
HIST-152H 3 Cr.
HIST-1610 3 Cr.
HIST-1630 3 Cr.
HIST-1700 3 Cr.
HIST-2051 3 Cr.
HIST-2060 3 Cr.
HIST-2070 3 Cr.
HIST-2150 3 Cr.
HIST-2160 3 Cr.
HIST-2660 3 Cr.
POL-1010 OSS011 3 Cr.
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.
PSY-101H 3 Cr.
PSY-1050 3 Cr.
PSY-2010 OSS045 3 Cr.
PSY-2020 OSS048 4 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-2010 3 Cr.
ANTH-2110 OSS003 3 Cr.
ECON-1210 3 Cr.
ECON-1220 3 Cr.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY-2040</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>PSY-2050</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>PSY-2060</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>PSY-2080</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>PSY-2100</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>PSY-2110</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-1010</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC-101H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-1020</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2010</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC-201H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2020</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2100</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2110</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2310</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2510</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SOC-2550</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>UST-1010</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>UST-1020</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>UST-2020</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>UST-2070</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>UST-2640</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>WST-1510</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>WST-2010</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**Natural and Physical 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1210</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>BIO-1040 &amp; BIO-104L</td>
<td>3 Cr. &amp; 1 Cr.</td>
<td></td>
</tr>
<tr>
<td>BIO-1050 &amp; BIO-105L</td>
<td>3 Cr. &amp; 1 Cr.</td>
<td></td>
</tr>
<tr>
<td>BIO-1060 &amp; BIO-106L</td>
<td>3 Cr. &amp; 1 Cr.</td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>BIO-1410</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>BIO-1420</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>BIO-1500</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-150H</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>BIO-1500 &amp; BIO-1510</td>
<td>4 Cr. &amp; 4 Cr.</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-150H &amp; BIO-1510</td>
<td>4 Cr. &amp; 4 Cr.</td>
<td></td>
</tr>
<tr>
<td>BIO-1510</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>BIO-2060</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>BIO-2150</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>BIO-2331 (formerly BIO-2330)</td>
<td>4 Cr.</td>
<td></td>
</tr>
<tr>
<td>BIO-2341 (formerly BIO-2340)</td>
<td>4 Cr.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-1010</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM-101H</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td></td>
<td>4 Cr.</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>OSC008 (Course 1 of 2, 4 Cr. both must be taken)</td>
<td>4 Cr. &amp; 1 Cr. &amp; 4 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>OSC008 (Course 1 of 1, lab is included in course)</td>
<td>5 Cr.</td>
</tr>
<tr>
<td>CHEM-130L</td>
<td>OSC008 (Course 2 of 2, 1 Cr. both must be taken)</td>
<td>4 Cr &amp; 1 Cr. &amp; 4 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM-130H &amp; CHEM-131H</td>
<td>5 Cr &amp; 5 Cr.</td>
<td></td>
</tr>
<tr>
<td>CHEM-1310</td>
<td>OSC009 (Course 1 of 2, 4 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM-131H</td>
<td>OSC009 (Course 1 of 1, lab is included in course)</td>
<td>5 Cr.</td>
</tr>
<tr>
<td>CHEM-131L</td>
<td>OSC009 (Course 2 of 2, 1 Cr. both must be taken)</td>
<td>4 Cr &amp; 1 Cr. &amp; 4 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>ESCI-1310</td>
<td>OSC006 (Course 1 of 2, 3 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-131L</td>
<td>OSC006 (Course 2 of 2, 1 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>OSC011 (Course 1 of 2, 3 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESCI-141H</td>
<td>OSC011 (Course 1 of 2, 3 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-141L</td>
<td>OSC011 (Course 2 of 2, 1 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-1510</td>
<td>OSC012 (Course 1 of 2, 3 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-151L</td>
<td>OSC012 (Course 2 of 2, 1 Cr. both must be taken)</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ESCI-1610</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>ESCI-161L</td>
<td></td>
<td>1 Cr.</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td></td>
<td>2 Cr.</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>OSC014</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>PHYS-1210 &amp; PHYS-1220</td>
<td>4 Cr. &amp; 4 Cr.</td>
<td></td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>OSC015</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>OSC016</td>
<td>5 Cr.</td>
</tr>
<tr>
<td>PHYS-2310 &amp; PHYS-2320</td>
<td>5 Cr. &amp; 5 Cr.</td>
<td></td>
</tr>
</tbody>
</table>
Transfer Assurance Guides

**Transfer Assurance Guides (TAGs)**

TAGs comprise Ohio Transfer Module courses and additional courses required for an academic major called TAG courses. 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 will ensure comparable, compatible, and 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 teams.

TAGs empower students to make informed course selection decisions and plans for their future transfer. Advisors at the institution to which a student wishes to transfer should also be consulted during the transfer process. Students may elect to complete the full TAG or any subset of courses from the TAG. Because of specific major requirements, early identification of a student's intended major is encouraged.

TAGs enable students to make informed course selection decisions and plans for their future transfer. Advisors at the institution to which a student wishes to transfer should also be consulted during the transfer process. Because of specific major requirements, early identification of the intended major is encouraged. Learn more (https://www.ohiohighered.org/transfer/tag) about TAGs or see Tri-C’s approved courses below. Learn more (https://www.ohiohighered.org/transfer/tag/definitions) about TAG Definitions and Pathways, which includes specific program area pathways.

**Ohio Articulation Number**

Learn more (p. 85) about OANs (select Ohio Transfer to Degree Guarantees 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 OTM and begin with "TM".

### Arts and Humanities

**Art History TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2020 &amp; ART-2030</td>
<td>TMAH &amp; OAH005</td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
</tbody>
</table>

Select 6 hrs. of Fine Arts Electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1100</td>
<td>OAH047</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1700</td>
<td>OAH050</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2000</td>
<td>OAH051</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2050</td>
<td>OAH048</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2210</td>
<td>OAH049</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCPH-1261</td>
<td>OAH002</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**English TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2310</td>
<td>TMAH &amp; OAH053</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2320</td>
<td>TMAH &amp; OAH054</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2350</td>
<td>TMAH &amp; OAH055</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2360</td>
<td>TMAH &amp; OAH056</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**Studio/Fine Arts TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1050</td>
<td>OAH001</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1070</td>
<td>OAH004</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1081</td>
<td>OAH058</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

Select 3-6 hrs. of Fine Arts Electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1100</td>
<td>OAH047</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1700</td>
<td>OAH050</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2000</td>
<td>OAH051</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2050</td>
<td>OAH048</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2210</td>
<td>OAH049</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCPH-1261</td>
<td>OAH002</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**Music TAG**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1250 &amp; MUS-1260</td>
<td>OAH019</td>
<td>2 Cr. &amp; 2 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1460</td>
<td>OAH020</td>
<td>2 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1470</td>
<td>OAH020</td>
<td>2 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-2460</td>
<td>OAH020</td>
<td>2 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-2470</td>
<td>OAH020</td>
<td>2 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1500</td>
<td>OAH022</td>
<td>1 Cr.</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-1500</td>
<td>OAH023</td>
<td>1 Cr.</td>
</tr>
</tbody>
</table>
MUS-1510 1 Cr.
or
MUS-1530 1 Cr.
or
MUS-1550 1 Cr.
MUS-1600 & MUS-1610 OAH052
& MUS-1620 & MUS-1630 & MUS-2600
& MUS-2610 & MUS-2620 & MUS-2630
3 Cr. & 2 Cr. & 3 Cr. & 2 cr. & 3 Cr. & 2 Cr. & 3 Cr. & 2 Cr.

Philosophy TAG
PHIL-1010 TMAH & OAH045 3 Cr.
or
PHIL-101H 3 Cr.
PHIL-2020 TMAH & OAH046 3 Cr.
or
PHIL-202H 3 Cr.

Theatre TAG
THEA-1430 OAH028 3 Cr.
THEA-1500 OAH027 3 Cr.
THEA-1540 OAH025 2 Cr.
THEA-1550 OAH026 2 Cr.
THEA-2010 OAH024 3 Cr.

Business
Business TAG
ACCT-1310 OBU010 4 Cr.
ACCT-1340 OBU011 4 Cr.
BADM-2010 OBU005 3 Cr.
or
BADM-201H 3 Cr.
BADM-2150 OBU004 4 Cr.
ECON-2610 TMSBS & OSS005 4 Cr.
ECON-2620 TMSBS & OSS004 4 Cr.
MARK-2010 OBU006 3 Cr.
MATH-1490 & MATH-1500 TMMSL (both courses individually) & OBU009
(both courses must be taken) 3 Cr. & 3 Cr.

Communication
Communication Studies TAG
SPCH-1000 OCM002 3 Cr.
SPCH-1010 TMCOM & OCM004 3 Cr.
or
SPCH-101H 3 Cr.
SPCH-1210 OCM003 3 Cr.
SPCH-2000 OCM001 3 Cr.

Journalism TAG
JMC-1011 OCM006 4 Cr.

VCPH-2760 OCM011 3 Cr.

Public Relations/Advertising TAG
JMC-1011 OCM006 4 Cr.
MARK-2270 OCM012 3 Cr.
VCPH-2760 OCM011 3 Cr.

Telecommunication TAG
JMC-1011 OCM006 4 Cr.
JMC-2420 OCM010 3 Cr.
MARS-1180 OCM008 3 Cr.

Engineering & Engineering Technology
Aerospace, Agriculture, Civil, Mechanical Engineering TAG
MATH-2520 TMM020 & OMT020 3 Cr.
MET-1100 OES001 2 Cr.

Bioengineering, Biomedical Engineering TAG
CHEM-1300 & CHEM-130L OSC008 4 Cr. & 1 Cr.
or
CHEM-130H 5 Cr.
and
CHEM-1310 & CHEM-131L OSC009 4 Cr. & 1 Cr.
or
CHEM-131H 5 Cr.
or
CHEM-1300 & CHEM-130L & CHEM-1310 & CHEM-131L OSC023 4 Cr. & 1 Cr. & 4 Cr. & 1 Cr.
or
CHEM-130H & CHEM-131H 5 Cr. & 5 Cr.
MET-1100 OES001 2 Cr.

Chemical Engineering TAG
MATH-2520 TMM020 & OMT020 3 Cr.
MET-1100 OES001 2 Cr.

Civil / Construction Engineering Technology TAG
CNST-2110 OET015 3 Cr.
CNST-2130 OET016 3 Cr.

Computer, Electrical Engineering TAG
MATH-2310 TMM018 & OMT018 4 Cr.
or
MATH-231H 4 Cr.
MET-1100 OES001 2 Cr.

Electrical Engineering Technology TAG
EET-1210 OET003 3 Cr.
### Industrial Engineering TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1100</td>
<td>OES001</td>
<td>2 Cr.</td>
</tr>
<tr>
<td>MET-2422</td>
<td>TMSBS &amp; OES005</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2430</td>
<td>OES004</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2610</td>
<td>OES002</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2620</td>
<td>OES003</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### Mechanical / Manufacturing Engineering Technology TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET-1240</td>
<td>OET010</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-1300</td>
<td>OET013</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-1601</td>
<td>OET007</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2041</td>
<td>OET012</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2200</td>
<td>OET008</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MET-2300</td>
<td>OET009</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### Foreign Language TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL-1010</td>
<td>OFL025</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>ASL-1010 &amp; ASL-1020</td>
<td>OFL029</td>
<td>4 Cr. &amp; 4 Cr.</td>
</tr>
<tr>
<td>ASL-1020</td>
<td>OFL026</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>FREN-1010</td>
<td>OFL001</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>FREN-1010 &amp; FREN-1020</td>
<td>OFL005</td>
<td>4 Cr. &amp; 4 Cr.</td>
</tr>
<tr>
<td>FREN-1020</td>
<td>OFL002</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>FREN-2010</td>
<td>OFL003</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>SPAN-1011</td>
<td>OFL019</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>SPAN-1011 &amp; SPAN-1021</td>
<td>OFL023</td>
<td>4 Cr. &amp; 4 Cr.</td>
</tr>
<tr>
<td>SPAN-1021</td>
<td>OFL020</td>
<td>4 Cr.</td>
</tr>
</tbody>
</table>

### Health TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIET-1200</td>
<td>OHL016</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### Health Information Management TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2600</td>
<td>OHL019</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>HIM-1311</td>
<td>OHL021</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>HIM-2430</td>
<td>OHL022</td>
<td>2 Cr.</td>
</tr>
<tr>
<td>IT-1010</td>
<td>OBU003</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MA-1020</td>
<td>OHL020</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### Medical Laboratory TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLT-1000</td>
<td>OHL008</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MLT-1491</td>
<td>OHL010</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>MLT-2461</td>
<td>OHL009</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### History TAG

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<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-101H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>HIST-1010 &amp; HIST-1020</td>
<td>OHS009</td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-101H &amp; HIST-102H</td>
<td></td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>HIST-1020</td>
<td>TMSBS &amp; OHS042</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-102H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>TMSBS &amp; OHS043</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-151H</td>
<td></td>
<td>3 Cr.</td>
</tr>
<tr>
<td>HIST-1510 &amp; HIST-1520</td>
<td>OHS010</td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-151H &amp; HIST-152H</td>
<td></td>
<td>3 Cr. &amp; 3 Cr.</td>
</tr>
<tr>
<td>HIST-1520</td>
<td>TMSBS &amp; OHS044</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST-152H</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

### Science and Mathematics

#### Chemistry TAG

**For BS Majors**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-2300 &amp; CHEM-2310</td>
<td>OSC010</td>
<td>5 Cr. &amp; 5 Cr.</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>TMNS &amp; OSC016</td>
<td>5 Cr.</td>
</tr>
<tr>
<td>and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS-2320</td>
<td>TMNS &amp; OSC017</td>
<td>5 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS-2310 &amp; PHYS-2320</td>
<td>OSC022</td>
<td>5 Cr. &amp; 5 Cr.</td>
</tr>
</tbody>
</table>

**For BA Majors**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM-2300 &amp; CHEM-2310</td>
<td>OSC010</td>
<td>5 Cr. &amp; 5 Cr.</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>TMNS &amp; OSC014</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>TMNS &amp; OSC015</td>
<td>4 Cr.</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS-1210 &amp; PHYS-1220</td>
<td>OSC021</td>
<td>4 Cr. &amp; 4 Cr.</td>
</tr>
<tr>
<td>Geology TAG</td>
<td>ESCI-1410 &amp; ESCI-141L</td>
<td>TMNS &amp; OSC011</td>
</tr>
<tr>
<td>or</td>
<td>ESCI-141H &amp; ESCI-141L</td>
<td>TMNS &amp; OSC012</td>
</tr>
</tbody>
</table>

| Mathematics TAG | MATH-2310 | TMM018 & OMT018 | 4 Cr. |
| or | MATH-231H | TMM018 | 4 Cr. |
| or | MATH-2410 | TMM019 & OMT019 | 3 Cr. |
| or | MATH-2520 | TMM020 & OMT020 | 3 Cr. |
| or | PHYS-2310 | TMNS & OSC016 | 5 Cr. |
| or | PHYS-2310 & PHYS-2320 | OSC022 | 5 Cr. & 5 Cr. |
| or | PHYS-2320 | TMNS & OSC017 | 5 Cr. |

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

| Social Sciences | Anthropology TAG | ANTH-1010 | TMSBS & OSS001 | 3 Cr. |
| or | ANTH-1210 | TMNS & OSS002 | 4 Cr. |
| or | ANTH-2110 | TMNSBS & OSS003 | 3 Cr. |

| Criminal Justice TAG | CJ-1000 | OSS031 | 3 Cr. |
| or | CJ-1070 | OSS033 | 2 Cr. |

| Economics TAG | ECON-2610 | TMSBS & OSS005 | 4 Cr. |
| or | ECON-2620 | TMSBS & OSS004 | 4 Cr. |

| Geography TAG | ESCI-1310 | TMNS & OSS006 | 3 Cr. |
| or | GEOG-1000 | OSS007 | 3 Cr. |
| or | GEOG-1010 | TMNSBS & OSS008 | 3 Cr. |

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

| Psychology TAG | PSY-1010 | TMSBS & OSS015 | 3 Cr. |
| or | PSY-101H | TMSBS & OSS016 | 3 Cr. |
| or | PSY-2040 | TMSBS & OSS018 | 3 Cr. |
| or | PSY-2050 | TMSBS & OSS019 | 3 Cr. |
| or | PSY-2080 | TMSBS & OSS017 | 3 Cr. |
| or | PSY-2010 | TMSBS & OSS045 | 3 Cr. |
| or | PSY-201H | OSS045 | 3 Cr. |
| or | PSY-2020 | TMSBS & OSS048 | 3 Cr. |
| or | PSY-202H | OSS048 | 3 Cr. |
| or | PSY-2060 | TMSBS & OSS046 | 3 Cr. |
| or | PSY-2100 | TMSBS & OSS047 | 3 Cr. |

| Social Work TAG | SOC-1010 | TMSBS & OSS021 | 3 Cr. |
| or | SOC-101H | OSS030 | 3 Cr. |
| or | SOC-2051 | TMSBS & OSS023 | 3 Cr. |
| or | SOC-2070 | TMSBS & OSS024 | 3 Cr. |
| or | PSY-101H | OSS030 | 3 Cr. |

| Sociology TAG | SOC-2010 | TMSBS & OSS025 | 3 Cr. |
| or | SOC-201H | OSS030 | 3 Cr. |
| or | SOC-2020 | TMSBS & OSS023 | 3 Cr. |
| or | SOC-2550 | TMSBS & OSS024 | 3 Cr. |

| Career-Technical Transfer Assurance Guides | | | |

![Career-Technical Transfer Assurance Guides Image]
Career-Technical Transfer Assurance Guides (CTAGs)

CTAGs are statewide articulation agreements that guarantee the recognition of learning which occurs at public adult and secondary career-technical institutions and have the opportunity for the awarding of college-credit. These statewide career-technical discipline specific articulation agreements ensure that students completing coursework at an adult or secondary career-technical institution can articulate and transfer agreed-upon technical courses/programs to any Ohio public institution of higher education and among Ohio public institutions 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 needed to transition from career–technical education to public institutions of higher education. Learning outcomes are based on recognized industry standards established by faculty panels. Each CTAN in the technical area is assigned an identifying number. Learn more (https://transfercredit.ohio.gov/ap/9?12230603297588) about CTAGs or see Tri-C’s approved courses below.
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) with a “C” or better. 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 with a “C” or better. 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.*

*Adult Career-Technical Students who possess a current ASE 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) with a “C” or better, and receive a qualifying/passing score on the “End of Course” examination of 64 or higher.
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) with a "C" or better 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1750</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

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) with a "C" or better, and receive a qualifying/passing score on the "End of Course" examination of 75 or higher.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-2130</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**Criminal Justice**

CTCJ001  
**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 with a "C" or better 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ-1000</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

**Education**

CTED001  
**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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC-1011</td>
<td></td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>
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. 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). 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).

Emergency Medical Services

CTEMS002  EMT-1302 & EMT-130L  6 Cr. & 1 Cr.
Emergency Medical Technician (EMT)

Student Requirements:
Student must hold a current Ohio EMT Certification

CTEMS004  EMT-1310 & EMT-2330 & EMT-2340 & EMT-2350 & EMT-2360 & EMT-2370  1 Cr. & 6 Cr. & 6 Cr. & 6 Cr. & 6 Cr. & 5 Cr.
Paramedic

Student Requirements:
Student must hold a current Ohio Paramedic Certification

Health Information Management

CTHIM002  HIM-1311  3 Cr.
Legal and Ethical Aspects of Health Information Management

Student Requirements:
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.
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) with a “C” or better from an approved program.

CTCF004  HOSP-1950  1 Cr.
Cooperative Work Experience

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 hold a current Ohio Restaurant Association (ORA) ProStart Certificate.
## Information Technology

### CTIT002 ITNT-2300 3 Cr.

**Network+**

**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 courses below with a "C" or better 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) certificate, Cisco Certified Entry Networking Technician (CCENT) certification, or passed Cisco I and II semester tests (proctored and closed book test environment).

<table>
<thead>
<tr>
<th>CTIT007</th>
<th>EET-1302</th>
<th>3 Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Exploration I</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 CISCO™ course with a "C" or better and pass applicable semester tests (proctored and closed book test environment) in Cisco I curriculum (official CISCO™ End of Course" exam)

OR, student must hold current Cisco certification

OR, Student must hold Cisco Certified Network Associate (CCNA) certificate (separate exam)

OR, student must hold Cisco Certified Entry Networking Technician (CCENT) certificate
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTIT008</td>
<td>Cisco Exploration II</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>EET-1312</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>matriculate to an</td>
<td></td>
</tr>
<tr>
<td></td>
<td>institution of higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>education with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an approved or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>comparable program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within 3 years after</td>
<td></td>
</tr>
<tr>
<td></td>
<td>completing the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approved secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>program. Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>successfully complete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the CISCO™ course with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a “C” or better and pass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>applicable semester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tests (proctored and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>closed book test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>environment) in Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II curriculum (official</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CISCO™ End of Course”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exam)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR, student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hold current CompTIA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network+ certificate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR, student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hold current Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certification (Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certified Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Associate (CCNA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certificate, Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certified Entry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Networking Technician</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CCENT) certificate)</td>
<td></td>
</tr>
<tr>
<td>CTIT009</td>
<td>Cisco Exploration III</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>EET-2302</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>matriculate to an</td>
<td></td>
</tr>
<tr>
<td></td>
<td>institution of higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>education with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an approved or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>comparable program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within 3 years after</td>
<td></td>
</tr>
<tr>
<td></td>
<td>completing the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approved secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>program. Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>successfully complete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the CISCO™ course with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a “C” or better and pass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>applicable semester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tests (proctored and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>closed book test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>environment) in Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>III curriculum (official</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CISCO™ End of Course”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exam)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR, student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hold current Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certification (Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certified Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Associate (CCNA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certificate)</td>
<td></td>
</tr>
<tr>
<td>CTIT010</td>
<td>Cisco Exploration IV</td>
<td>3 Cr.</td>
</tr>
<tr>
<td>EET-2312</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>matriculate to an</td>
<td></td>
</tr>
<tr>
<td></td>
<td>institution of higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>education with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an approved or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>comparable program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within 3 years after</td>
<td></td>
</tr>
<tr>
<td></td>
<td>completing the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approved secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>program. Student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>successfully complete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the CISCO™ course with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a “C” or better and pass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>applicable semester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tests (proctored and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>closed book test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>environment) in Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV curriculum (official</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CISCO™ End of Course”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exam)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR, student must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hold current Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certification (Cisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certified Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Associate (CCNA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>certificate)</td>
<td></td>
</tr>
</tbody>
</table>
### Media Arts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMDA003</td>
<td>Introduction to Single Camera Video Production</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

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 Network Operating Systems (145040) with a "C" or better, and receive a qualifying/passing score of 64 or higher on the "End of Course" examination OR, the student must hold the current Microsoft Server Certification.

### Mechanical Engineering Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMET004</td>
<td>Manufacturing Processes</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

Student Requirements:
- Proof of satisfactory course completion.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMET005</td>
<td>CADD</td>
<td>3 Cr.</td>
</tr>
</tbody>
</table>

Student Requirements:
- Proof of satisfactory course completion.

### Medical Assisting Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMAT004 &amp; CTMAT005</td>
<td>Basic Administrative Medical Assisting Functions &amp; Bookkeeping Functions</td>
<td>2 Cr. &amp; 1 Cr.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1503 &amp; MA-150L</td>
<td>MARS-1180</td>
<td>2 Cr. &amp; 1 Cr.</td>
</tr>
</tbody>
</table>

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).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMAT006</td>
<td>Insurance Claims</td>
<td>MA-2110 2 Cr.</td>
</tr>
<tr>
<td>CTMAT008</td>
<td>Fundamental Procedures</td>
<td>MA-1402 &amp; MA-140L 2 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>CTMAT009</td>
<td>Specimen Collection</td>
<td>MA-1321 &amp; MA-132L 2 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>CTMAT010</td>
<td>Diagnostic Testing</td>
<td>MA-2413 &amp; MA-241L 3 Cr. &amp; 1 Cr.</td>
</tr>
<tr>
<td>CTMAT011</td>
<td>Patient Care</td>
<td>HTEC-1610 &amp; MA-2860 2 Cr. &amp; 2 Cr. &amp; 1 Cr. &amp; MA-2980</td>
</tr>
</tbody>
</table>

**Medical Terminology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTMT001</td>
<td>Medical Terminology</td>
<td>MA-1020 3 Cr.</td>
</tr>
<tr>
<td>CTPNUR001</td>
<td>Practical Nursing Program</td>
<td>NURS-1300 &amp; NURS-1451 &amp; NURS-1601 2 Cr. &amp; 7 Cr. &amp; 7 Cr.</td>
</tr>
</tbody>
</table>

**Nursing – Practical Nursing to Associate Degree**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTPADNUR002</td>
<td>Nursing Articulation Model (ONAM) transition course.</td>
<td>NURS-1300 &amp; NURS-1451 &amp; NURS-1601 2 Cr. &amp; 7 Cr. &amp; 7 Cr.</td>
</tr>
</tbody>
</table>
Performing Arts
CTPAT001 THEA-1430 3 Cr.
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) with a “C” or better and earn a qualifying score on the corresponding End of Course examination of 66 or higher.

Pharmacy Technician
CTPT001 MA-1020 & PHM-1300 3 Cr. & 3 Cr.
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 PHM-2080 & PHM-2701 1 Cr. & 4 Cr.
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.

CTPT003 PHM-2860 3 Cr.
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 HLTH-1230 & CJ-1300 1 Cr. & 4 Cr. & 3 Cr. & 3 Cr. & 3 & CJ-1310 & CJ-2370 & 3 Cr. & 2 Cr. & 2 Cr. & 1 Cr.
Basic Police Officer

Student Requirements:
Current and valid state of Ohio Peace Officer Basic Training certificate/letter and completion of training courses offered by an Ohio public state assisted career-technical (secondary or adult) or state supported college or university that is in good standing with the Ohio Attorney General’s Ohio Peace Officer Training Commission to deliver the Peace Officer Basic Training.

Military Transfer Assurance Guides
Military Transfer Assurance Guides (MTAGs)

Military Training/Experience Credit Transfer

In response to the legislative requirement (Ohio Revised Code 3333.164) to create a military articulation and transfer assurance guide for college-level learning that took place through military training, experience, and coursework, college credit will be granted 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 systemize the awarding of credit for military training, experience, and coursework. MTAGs identify specific courses which are part of the statewide transfer guarantee.

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 endorsed baseline standards and procedures by the Chancellor. Equivalent course(s), credits for courses, or block of credit is to be awarded and applied towards general education and/or major course requirements at the receiving institution in accordance with the MTAG guarantee. There is some training, experience, and coursework that the receiving institution may be able to award college credit only toward general or free electives.

In addition, public institutions of higher education shall ensure that appropriate equivalent credit is awarded for military training, experience, and coursework that meet the baseline standards and procedures according to the Ohio Revised Code 3333.164. This requirement goes beyond credit/course awarded based on the MTAG alignment process.

Military Transfer Assurance Guides

The MTAGs serve as advising tools, identifying the course(s) or programs 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 tables, which indicates the courses and credit hours students will be awarded for the completed military experience/training. Learn more (p. 85) about OANs (select Ohio Transfer to Degree Guarantees on the landing page). Learn more (https://transfercredit.ohio.gov/ap/35?12230603297588) 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 (http://www.tri-c.edu/transfer-center).

In addition to our Academic Programs, Tri-C also offers educational opportunities for professional development (p. 333), workforce training (p. 351), community education (http://catalog.tri-c.edu/pathways/community-education), and personal enrichment (http://catalog.tri-c.edu/pathways/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 (http://www.tri-c.edu/counseling-center/academic-counseling.html) and career exploration/planning tools (http://www.tri-c.edu/career-services/student-career-services/career-exploration.html).

Business

- Accounting
- Business Management
- Business Management (Human Resources Management)
- Business Management (International Business)
- Business Management (Small Business Management)
- Business Technology (formerly Business Management)
- Captioning and Court Reporting
- Construction Engineering Technology
- Hospitality Management (Culinary Art)
- Hospitality Management (Lodging-Tourism Management)
- Hospitality Management (Restaurant/Food Service Management)
- Information Technology (Business Solutions)
- 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. 70) 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.

**Creative Arts**

- Associate of Arts Degree/University Transfer
- Interior Design
- Marketing
- Media Arts and Filmmaking
- Recording Arts and Technology
- Visual Communication and Design (Graphic Design)
- Visual Communication and Design (Illustration)
- Visual Communication and Design (Photography)
- Visual Communication and Design (Web and Interactive Media)

**Health Careers and Nursing**

- Cancer Registrar
- Dental Hygiene
- Diagnostic Medical Sonography
- Diagnostic Medical Sonography (General Sonography)
- Dietetic Technology
- Electroneurodiagnostic Technology
- 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
- Physician Assistant
- Polysomnography (Sleep Disorders)
- 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 (http://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 to the Office of the Registrar, P. O. Box 5966, Cleveland, OH 44101-0966. Online admission at www.tri-c.edu/programs/nursing (http://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.

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, murder, voluntary manslaughter, felonious assault, kidnapping, rape, sexual battery, gross sexual imposition, aggravated arson, aggravated 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 career 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 (http://www.tri-c.edu/nursing) for further information.

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:

- Completion of Tri-C’s placement test with a score appropriate for 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).
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.

Hospitality

- Event Planning (Professional Development Programs)
- Hospitality Management (Culinary Art)
- Hospitality Management (Lodging-Tourism Management)
- Hospitality Management (Restaurant/Food Service Management)

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)

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. 25)

Learn more [here](http://www.tri-c.edu/transfer-center) about transfer opportunities at Tri-C.

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 Technology
- Fire-Emergency Medical Services
- Public Safety (Workforce Training Program)

**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
- 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
FIND YOUR MAJOR OR PROGRAM

Associate of Arts Degree

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. 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. 25)

Learn more (http://www.tri-c.edu/transfer-center) about transfer opportunities at Tri-C.

Creative and Performing Arts

- Art (http://catalog.tri-c.edu/course-descriptions/art)
- Dance (http://catalog.tri-c.edu/course-descriptions/danc)
- Journalism and Mass Communication (http://catalog.tri-c.edu/course-descriptions/jmc)
- Music (http://catalog.tri-c.edu/course-descriptions/mus)
- Theatre Arts (http://catalog.tri-c.edu/course-descriptions/thea)

Humanities, Liberal Arts, and Social and Behavioral Sciences

- American Sign Language (http://catalog.tri-c.edu/course-descriptions/asl)
- Anthropology (http://catalog.tri-c.edu/course-descriptions/anth)
- Chinese (http://catalog.tri-c.edu/course-descriptions/chin)
- Economics (http://catalog.tri-c.edu/course-descriptions/chin)
- Education (http://catalog.tri-c.edu/course-descriptions/educ)
- English (http://catalog.tri-c.edu/course-descriptions/eng)
- French (http://catalog.tri-c.edu/course-descriptions/fren)
- Geography (http://catalog.tri-c.edu/course-descriptions/geog)
- German (http://catalog.tri-c.edu/course-descriptions/ger)
- History (http://catalog.tri-c.edu/course-descriptions/hist)
- Humanities (http://catalog.tri-c.edu/course-descriptions/hum)
- Italian (http://catalog.tri-c.edu/course-descriptions/ital)
- Japanese (http://catalog.tri-c.edu/course-descriptions/japn)
- Philosophy (http://catalog.tri-c.edu/course-descriptions/phil)
- Political Science (http://catalog.tri-c.edu/course-descriptions/pol)
- Psychology (http://catalog.tri-c.edu/course-descriptions/psy)
- Religious Studies (http://catalog.tri-c.edu/course-descriptions/rel)

- Sociology (http://catalog.tri-c.edu/course-descriptions/soc)
- Spanish (http://catalog.tri-c.edu/course-descriptions/span)
- Speech Communication (http://catalog.tri-c.edu/course-descriptions/spch)
- Urban Studies (http://catalog.tri-c.edu/course-descriptions/ust)
- Women’s Studies (http://catalog.tri-c.edu/course-descriptions/wst)

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. 25)

Learn more (http://www.tri-c.edu/transfer-center) about transfer opportunities at Tri-C.

Learn more about Science and Mathematics courses offered at Tri-C:

- Biology (http://catalog.tri-c.edu/course-descriptions/bio)
- Chemistry (http://catalog.tri-c.edu/course-descriptions/chem)
- Earth Science (http://catalog.tri-c.edu/course-descriptions/esci)
- Mathematics (http://catalog.tri-c.edu/course-descriptions/math)
- Physical Science (http://catalog.tri-c.edu/course-descriptions/psci)
- Physics (http://catalog.tri-c.edu/course-descriptions/phys)

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 (http://www.tri-c.edu/programs/accounting)

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 (http://catalog.tri-c.edu/pathways/business/accounting) about how certificate credits apply to the related degree.

Related Training and Credentials
• Enrolled Agent (p. 339)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
</tbody>
</table>

| Second Semester |                    |              |
| Acct-1020 | Introduction to Business | 3            |
| Select one of the following: |                 |              |
| ENG-1010 | College Composition I   | 3            |
| ENG-101H | Honors College Composition I |         |
| Select one of the following: |                 |              |
| IT-1010 | Introduction to Microcomputer Applications | 3            |
| IT-101H | Honors Introduction to Microcomputer Applications |         |

| Credit Hours | 17 |

| Third Semester |                    |              |
| BADM-2100 | Business Communication | 15           |
| BADM-2101 | Honors Business Communications |          |

| Fourth Semester |                    |              |
| ACCT-2995 | Accounting Technology | 3            |
| ACCT-2XXX | Accounting 2000 level elective | 4            |
| ECON-2620 | Principles of Microeconomics | 4            |
| FIN-2100 | Financial Management | 3            |

| Credit Hours | 14 |

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>
</tbody>
</table>
ACCT-2310 Intermediate Accounting I 4
ACCT-2320 Intermediate Accounting II 4
ACCT-2340 Cost Accounting 4
ACCT-2500 Governmental/Non-Profit Accounting 4
ACCT-2510 Auditing 4
ACCT-2830 Cooperative Field Experience 1-3
ACCT-28xx Accounting Special Topics 2-4
FIN-1061 Personal Finance 3

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.

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 (http://www.tri-c.edu/programs/accounting/bookkeeping-certificate.html)

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 (http://www.tri-c.edu/about/disclosure/Bookkeeping/Gedt.html)

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:

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-xxxx</td>
<td>Any ACCT elective course</td>
<td>3-4</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
<tr>
<td>Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16-17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-xxxx 1</td>
<td>Any ACCT elective course</td>
<td>3-4</td>
</tr>
<tr>
<td>FIN-xxxx</td>
<td>Finance Elective</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>15-16</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>31-33</td>
</tr>
</tbody>
</table>

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-1340</td>
<td>Managerial Accounting</td>
<td>4</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></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>
</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 (http://www.tri-c.edu/programs/accounting/payroll-certificate-of-proficiency.html)

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 (http://www.tri-c.edu/about/disclosure/Payroll/Gedt.html)

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

Course Title Credit Hours
First Semester
ACCT-1310 Financial Accounting 4
ACCT-1041 Individual Taxation 4
BADM-1020 Introduction to Business 3
Select one of the following: 3
ENG-1010 College Composition I
ENG-101H Honors College Composition I
Select one of the following: 3
IT-1010 Introduction to Microcomputer Applications
IT-101H Honors Introduction to Microcomputer Applications
Credit Hours 17

Second Semester
ACCT-1030 Payroll 3
ACCT-1520 QuickBooks Immersion 2
BADM-2150 Business Law 4
Select one of the following: 3-4
ACCT-xxxx ¹ Any ACCT elective course
FIN-xxxx Finance Elective
Select one of the following: 3
BADM-2010 Business Communication
BADM-2010 Business Communication
Credit Hours 15-16
Total Credit Hours 32-33

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-1340</td>
<td>Managerial Accounting</td>
<td>4</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>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>
</tbody>
</table>
FIN-1061        Personal Finance                      3

Tax Preparation, Certificate of Proficiency

The Tax Preparation Certificate prepares students for entry-level employment as tax preparation paraprofessionals. Such tax preparers may be responsible for completing small business income tax returns, individual income tax returns, and payroll tax returns. 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 tax preparer.

Program contact: Learn more (http://www.tri-c.edu/programs/accounting/tax-preparation-certificate.html)

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 (http://www.tri-c.edu/about/disclosure/Tax_Preparation/Gedt.html)

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.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1041</td>
<td>Individual Taxation</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>17</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-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-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>33</td>
</tr>
</tbody>
</table>

Administrative Office Systems, Associate of Applied Business Degree

This program has been deleted effective Fall 2017. Students currently in the program have two years to complete this program until Summer 2019. After Summer 2019, degrees will no longer be granted for this program.
Coursework to complete this program has been moved under Business Technology (p. 422). Current students should see a counselor to plan for program completion or transitioning into Associate of Applied Business in Business Technology degree. (p. 168)

Program contact: Learn more (http://www.tri-c.edu/programs/business-management/business-technology/associate-degree-business-technology.html)

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/bricklaying)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-bricklaying-allied-crafts-apprenticeship) 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>
<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>CNST-1731</td>
<td>Construction Print Reading</td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td>15</td>
</tr>
<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>
<tr>
<td>Communication requirement (p. 49)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-2330</td>
<td>Construction Scheduling</td>
<td></td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td>18-19</td>
</tr>
<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>
<tr>
<td>Social and Behavioral Sciences requirement (p. 54)</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Select one of the following: 3
IT-1010 Introduction to Microcomputer Applications
IT-101H Honors Introduction to Microcomputer Applications
Select one of the following: 3
BADM-xxxx Business Elective
CNST-2631 Construction Management Systems
CNST-xxxx CNST Elective
FIN-1061 Personal Finance

Credit Hours 16

Fourth Semester
AIT-2990 Contracting in a Diverse World 3
ATCM-1390 Basic Welding Skills 2
ATBL-2140 Introduction to Bricklayer Foreman 1
Arts & Humanities requirement (p. 52) 3
Select one of the following: 3
BADM-xxxx Business Elective
CNST-2990 Construction Estimating & Cost Analysis

Credit Hours 12
Total Credit Hours 61-62

1 ENG-2151 Technical Writing highly recommended.

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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/bricklaying/bricklaying-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-bricklaying-allied-crafts-apprenticeship) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>ATCM-1330</td>
<td>Concrete Construction Equipment</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>1</td>
</tr>
<tr>
<td>ATBL-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<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>ATCM-1390</td>
<td>Basic Welding Skills</td>
<td>1</td>
</tr>
<tr>
<td>ATBL-2140</td>
<td>Introduction to Bricklayer Foreman</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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATBL-2510</td>
<td>Advanced Brick-Block Construction</td>
<td>2</td>
</tr>
<tr>
<td>ATBL-2710</td>
<td>Advanced Bricklaying Skills</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>30</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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/buildingconstruction)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing) about the related apprenticeship programs a student could apply to after completing this certificate program.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Building_Construction/Gedt.html)

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 participant 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIT-1010</td>
<td>Construction Measurements and Calculations</td>
<td>4</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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/carpentry)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-carpentry-apprenticeship) 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

<table>
<thead>
<tr>
<th>Course</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 (p. 52)</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>

Credit Hours: 17

Second Semester

<table>
<thead>
<tr>
<th>Course</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. 49)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**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.

Financial Assistance funds cannot be applied towards this program.

**Program contact:** Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/carpentry/carpentry-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-carpentry-apprenticeship) 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>Course</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>
</tbody>
</table>

**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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/cement-masonry-apprenticeship) 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

<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>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(p. 52)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</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>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 17
Second Semester
ATCM-1340 OSHA Standards for Construction 3
ATCM-1400 Concrete/Cement Forming and Finishing 3
ATCM-1410 Commercial/Residential Form and Finish 4
ATCM-2320 Blueprint Fundamentals - Construction 2
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-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td></td>
</tr>
</tbody>
</table>

Third Semester
ATCM-2500 Fundamentals of Concrete Curing 1
ATCM-2510 Fundamentals of Concrete Joints 1
ATCM-2520 Basic Cement Patching 2
ATCM-2530 Concrete Restoration 3
Arts & Humanities requirement (p. 52) 3
Select one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</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-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Semester
AIT-2990 Contracting in a Diverse World 3
ATCM-2700 Advanced Concrete Finishing 3
Communication requirement (p. 49) 3
Social & Behavioral Sciences/Natural and Physical Sciences requirement (p. 54) 3
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-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 16

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>

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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business Management</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>
</tbody>
</table>

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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/cement-masonry/cement-masonry-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-cement-masonry-apprenticeship) 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

<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>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

<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>
<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></td>
<td><strong>Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATCM-2700</td>
<td>Advanced Concrete Finishing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>30</strong></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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/communication-transport-system)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-communication-transport-systems-apprenticeship) 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>Course</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>ATCW-1010</td>
<td>Worker Safety for Communication Transport</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1020</td>
<td>Communications Worker History</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1040</td>
<td>Basic Information Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-xxxx</td>
<td>Elective</td>
<td>2</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><strong>Second Semester</strong></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>ATCW-1210</td>
<td>Introduction to Information Transport - Copper</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>ATCW-1250</td>
<td>Infrastructure Layout</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1270</td>
<td>Grounding and Bonding</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-2010</td>
<td>Information Transport - Fiber</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-2050</td>
<td>Audio Visual</td>
<td>1</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (See List Below)</td>
<td>3</td>
</tr>
</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-1300</td>
<td>Small Business Management</td>
<td>4</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-2130</td>
<td>Construction Methods, Materials, and Equipment</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>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Arts &amp; Hum/Soc &amp; Beh Sci/Nat &amp; Phy Sci</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/communication-transport-system/communication-transport-systems-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-communication-transport-systems-apprenticeship) 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 craftsman.

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>Course</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>ATCW-1010</td>
<td>Worker Safety for Communication Transport</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1020</td>
<td>Communications Worker History</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1040</td>
<td>Basic Information Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1210</td>
<td>Introduction to Information Transport - Copper</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATCW-1250</td>
<td>Infrastructure Layout</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-1270</td>
<td>Grounding and Bonding</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-2010</td>
<td>Information Transport - Fiber</td>
<td>2</td>
</tr>
<tr>
<td>ATCW-2050</td>
<td>Audio Visual</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-xxxx</td>
<td>Elective</td>
<td>2</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ISET-1410</td>
<td>Applied Electricity I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>14</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATCW-2070</td>
<td>Information Transport Circuits</td>
<td>1</td>
</tr>
<tr>
<td>ATCW-2120</td>
<td>Advanced Systems Transport</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

Electives

<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-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</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>DEGR-xxxx</td>
<td>Any course in Arts &amp; Humanities/Social &amp; Behavioral Sciences/Natural &amp; Physical Sciences</td>
<td></td>
</tr>
</tbody>
</table>
Applied Industrial Technology
(Construction Tending and Hazardous Material Abatement), 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 Construction Tending and Hazardous Materials Abatement, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. 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.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/construction-tending-and-hazardous-material-abatement-program)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-construction-tending-hazardous-material-abatement-apprenticeship) about how certificate credits apply to the related degree.

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATLB-1010</td>
<td>Craft Orientation for Laborers</td>
<td>1</td>
</tr>
<tr>
<td>ATLB-1020</td>
<td>Measurements and Leveling</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-1210</td>
<td>Concrete Placement</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-1340</td>
<td>Mason Tending</td>
<td>3</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>1</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</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>17</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATLB-2650</td>
<td>Demolition Techniques</td>
<td>3</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>
<tr>
<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
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. 49) 3
Select one of the following: 3
  BADM-xxxx Business Elective
  CNST-1xxx CNST Elective

Credit Hours 14

Fourth Semester

AIT-2990 Contracting in a Diverse World 3
Arts & Humanities requirement (p. 52) 3
Social & Behavioral Science requirement (p. 54) 3
Select one of the following: 3
  BADM-xxxx Business Elective
  CNST-1xxx CNST Elective
Select one of the following: 3
  BADM-xxxx Business Elective
  CNST-2130 Construction Methods, Materials, and Equipment

Credit Hours 15
Total Credit Hours 62

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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/construction-tending-and-hazardous-material-abatement-program/construction-tending-hazardous-material-abatement-program-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-construction-tending-hazardous-material-abatement-apprenticeship) 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**

<table>
<thead>
<tr>
<th>Course</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>ATLB-1010</td>
<td>Craft Orientation for Laborers</td>
<td>1</td>
</tr>
<tr>
<td>ATLB-1020</td>
<td>Measurements and Leveling</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-1210</td>
<td>Concrete Placement</td>
<td>2</td>
</tr>
<tr>
<td>ATLB-1340</td>
<td>Mason Tending</td>
<td>3</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>1</td>
</tr>
<tr>
<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATLB-2650</td>
<td>Demolition Techniques</td>
<td>3</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>
<tr>
<td>ATLB-xxxx</td>
<td>Laborer Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<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>
<tr>
<td><strong>Credit Hours</strong></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

**Program Contact:** Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/drywall-finishing)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-drywall-finishing-apprenticeship) 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**

<table>
<thead>
<tr>
<th>Course</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>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. 52)</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td>18</td>
</tr>
<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>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<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>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 52)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>61</td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</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. 52)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td>11</td>
</tr>
<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>
</tbody>
</table>

**Electives**

**Technical Electives**

Recommended courses fulfill ATPT elective requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</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>
<td>2</td>
</tr>
</tbody>
</table>

**Business & Supervision Electives**

Recommended courses to fulfill 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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
</tbody>
</table>

**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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/drywall-finishing/drywall-finishing-certificate.html)

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

- 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPT-1320</td>
<td>Safety Standards for Construction (OSHA-10)</td>
<td>3</td>
</tr>
<tr>
<td>ATPT-1340</td>
<td>Wall Preparation and Repair</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATDW-2310</td>
<td>Automatic Taping Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATDW-2330</td>
<td>Finishing Boxes</td>
<td>2</td>
</tr>
<tr>
<td>ATDW-2350</td>
<td>Filling Compounds/Procedures</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>
<tr>
<td>ATPT-2320</td>
<td>Safe Work Practices</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></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>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>32</strong></td>
<td></td>
</tr>
</tbody>
</table>

Applied Industrial Technology (Electrical Construction), 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 Electrical Construction, as well as earn an Associate of Applied Science degree. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/electrical-construction)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-electrical-construction-apprenticeship) about how certificate credits apply to the related degree.

**Program Admission Requirements**

- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician's English Comprehension and Mathematics Tests

**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. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.
2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.
5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.
6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEL-1300</td>
<td>Direct Current Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-1330</td>
<td>National Electric Code</td>
<td>2</td>
</tr>
<tr>
<td>ATEL-1350</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1xxx (p. 52)</td>
<td>1000 level or higher</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>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEL-1310</td>
<td>Alternating Current Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-1360</td>
<td>Blueprint Fundamentals - Electrical</td>
<td>2</td>
</tr>
</tbody>
</table>

**Communication requirement (p. 49) ²** | 3
**Social and Behavioral Science Requirement (p. 54)** | 3
**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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-xxxx</td>
<td>Information Technology Elective</td>
<td>14</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>ATEL-2300</td>
<td>Industrial Electronics Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2310</td>
<td>Industrial Electronics Fundamentals II</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2350</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Hum (See AAB/AAS degree requirements)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**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>ATEL-2500</td>
<td>AC/DC Motors &amp; Generators</td>
<td>4</td>
</tr>
<tr>
<td>ATEL-2510</td>
<td>Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2700</td>
<td>Electrical Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNST-2631</td>
<td>Construction Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

<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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

¹ MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.
² ENG-2151 Technical Writing highly recommended.
Electrical Construction, 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 five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired in this well-designed and administered apprenticeship training program prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/electrical-construction) about how certificate credits apply to the related degree.

Program Admission Requirements
- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician’s English Comprehension and Mathematics Tests

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. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.
2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.
5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.
6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEL-1300</td>
<td>Direct Current Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-1310</td>
<td>Alternating Current Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-1330</td>
<td>National Electric Code</td>
<td>2</td>
</tr>
<tr>
<td>ATEL-1350</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>ATEL-1360</td>
<td>Blueprint Fundamentals - Electrical</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEL-2300</td>
<td>Industrial Electronics Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2310</td>
<td>Industrial Electronics Fundamentals II</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2350</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2500</td>
<td>AC/DC Motors &amp; Generators</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATEL-2510</td>
<td>Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>ATEL-2700</td>
<td>Electrical Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>31</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/floorlaying)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-floorlaying-apprenticeship) 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>Course</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>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-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>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>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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-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>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATFL-1300</td>
<td>Residential Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-xxxx</td>
<td>Floorlaying Elective</td>
<td>2</td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 49)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<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>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>Social and Behavioral Science requirement (p. 54)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>61</td>
</tr>
</tbody>
</table>

1 Consecutively scheduled courses.
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, scrubs, 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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/floorlaying/floorlaying-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-floorlaying-apprenticeship) 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.
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>Course Title</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</td>
<td>2</td>
</tr>
<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-xxxx Floorlaying Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td>ATFL-1300 Residential Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1600 Modular Tile</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1610 Jute &amp; Action Back Carpeting</td>
<td>2</td>
</tr>
<tr>
<td>ATFL-1620 Ceramics I</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><strong>Credit Hours</strong></td>
<td><strong>14</strong></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>ATFL-xxxx Floorlaying Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/glazing)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-glazing-apprenticeship) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATGL-1330</td>
<td>Hand Tools for Glaziers</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</td>
<td>(p. 52)</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></td>
</tr>
<tr>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td></td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</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>

Credit Hours 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>ATGL-1640</td>
<td>Door Fabrication and Installation</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1650</td>
<td>Blueprints I: Construction Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>Communication requirement (p. 49)</td>
<td></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></td>
</tr>
<tr>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td></td>
</tr>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 17

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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-2320</td>
<td>Safe Work Practices</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirements (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATDW-xxxx</td>
<td>ATDW Elective course</td>
<td></td>
</tr>
<tr>
<td>ATGL-xxxx</td>
<td>ATGL Elective course</td>
<td></td>
</tr>
<tr>
<td>ATPT-xxxx</td>
<td>ATPT Elective course</td>
<td></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></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 15

Fourth Semester

<table>
<thead>
<tr>
<th>Course</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>ATGL-2340</td>
<td>Advanced Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-1640</td>
<td>Rigging &amp; Hoisting</td>
<td>2</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences (p. 54)</td>
<td></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></td>
</tr>
</tbody>
</table>

Cuyahoga Community College Catalog 2017-2018 137
Glazing, Certificate of Proficiency

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-2130</td>
<td>Construction Methods, Materials, and Equipment</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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</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-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for 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>

Glazing, Certificate of Proficiency

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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/glazing/glazing-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-glazing-apprenticeship) about how certificate credits apply to the related degree.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>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>
</tbody>
</table>
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:

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/OSHA 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>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>ATIW-1330</td>
<td>Erection Concepts &amp; Practices</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-1410</td>
<td>Practical Applications of Reinforcing Steel</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</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>

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>ATIW-1600</td>
<td>Welding Fundamentals for Ironworkers</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2300</td>
<td>Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2310</td>
<td>Welding Specialties</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2320</td>
<td>Welding Blueprints and Design</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 18

Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>Arts &amp; Humanities requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</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>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 17

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>ATIW-2500</td>
<td>Rigging and Hoisting</td>
<td>3</td>
</tr>
</tbody>
</table>

Social & Behavioral Science requirement (p. 54) | 3

Total Credit Hours: 64

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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business Management</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-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
</tbody>
</table>

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. Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/ironworking/ironworking-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-ironworking-apprenticeship) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</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>ATIW-1330</td>
<td>Erection Concepts &amp; Practices</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATIW-1400</td>
<td>Principle of Reinforcing Steel</td>
<td>2</td>
</tr>
<tr>
<td>ATIW-1410</td>
<td>Practical Applications of Reinforcing Steel</td>
<td>1</td>
</tr>
<tr>
<td>ATIW-1600</td>
<td>Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2300</td>
<td>Welding Fundamentals for Ironworkers</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2310</td>
<td>Welding Specialties</td>
<td>3</td>
</tr>
<tr>
<td>ATIW-2320</td>
<td>Welding Blueprints and Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATIW-2330</td>
<td>Pre-Construction Planning of Specialty</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></td>
<td>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/liftingtechnologies)
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 Mazzella Way and integrate it into all interactions.
6. Utilize Mazzella inspection, testing, reporting, and ERP software.
7. Operate specialized equipment and utilize Mazzella 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATLT-1000</td>
<td>Orientation for Lifting Tech</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1010</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1020</td>
<td>Introduction to Lifting &amp; Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1040</td>
<td>Safety in Lifting and Rigging I</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1050</td>
<td>Rigging Geometric</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective (See List Below)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGR-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENGR-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLT-1030</td>
<td>Introduction to Wire Rope</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1060</td>
<td>Layout &amp; Fabrication Procedure</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1070</td>
<td>Blue Print Reading for Rigging I</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-1080</td>
<td>Lifting Technologies Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1090</td>
<td>Introduction to Welding for Lifting Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLT-1100</td>
<td>Introduction to Inspections: Field Tablets IC3</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-1110</td>
<td>Technologies in Rigging</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2010</td>
<td>Lifting Project Module</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2020</td>
<td>Proof Test Operations</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2040</td>
<td>Wire Rope Applications I</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-xxxx</td>
<td>Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx</td>
<td>Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities/Natural and Physical Sciences requirement (p. 52)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<tr>
<td>ATLT-xxxx</td>
<td>Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx</td>
<td>Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-xxxx</td>
<td>Elective (see technical elective list)</td>
<td>2</td>
</tr>
<tr>
<td>Social and Behavioral Sciences (p. 54)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 15

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATLT-2050</td>
<td>Blue Print Reading for Rigging II</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-2130</td>
<td>Overhead Crane Electrical</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-2140</td>
<td>Overhead Crane Mechanical</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-2170</td>
<td>Overhead Crane Inspector</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-2280</td>
<td>Overhead Crane Inspect Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATLT-2500</td>
<td>Rigging Inspector Certification</td>
<td>3</td>
</tr>
<tr>
<td>ATLT-2510</td>
<td>Sling Fabrication - Flat Web &amp; Chain</td>
<td>1</td>
</tr>
<tr>
<td>ATLT-2520</td>
<td>Socketing</td>
<td>1</td>
</tr>
</tbody>
</table>

Select from below courses to fulfill Technical Elective Requirements.

Select from below courses to fulfill General 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>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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</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>
</tbody>
</table>
Applied Industrial Technology (Manufacturing Technology), 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 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 (http://www.tri-c.edu/programs/applied-industrial-technology/manufacturing/manufacturing-technology)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-manufacturing-technology-apprenticeship) about how certificate credits apply to the related degree.

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>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ATMT-1100 Manufacturing Skills I</td>
<td>3</td>
</tr>
<tr>
<td>ATMT-1110 Manufacturing Skills II</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-1200 Machine Tool Theory</td>
<td>4</td>
</tr>
<tr>
<td>ISET-1310 Mechanical Power Transmission</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx 1000-level MATH course or higher (52)</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>Credit Hours</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ATMT-1300 Manufacturing Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-1500 Manufacturing Tech Skills I</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-1600 Introduction to CAD</td>
<td>2</td>
</tr>
<tr>
<td>BADM-1020 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1010 Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ATMT-2300 Advanced Manufacturing Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-2500 Manufacturing Technology Skills II</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-2600 CNC Programming/Operations</td>
<td>2</td>
</tr>
<tr>
<td>BADM-1121 Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences/Natural &amp; Physical Sciences requirement (54)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ATMT-2620 CAM Principles</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-2700 Manufacturing Technology Skills III</td>
<td>4</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/applied-industrial-technology/manufacturing/cnc-machining-and-composite-manufacturing)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-millwrighting-apprenticeship) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/CNC_Machining_and_Composites_Manufacturing/Gedt.html)

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMT-1000</td>
<td>Mechanical &amp; Spatial Relations</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-1100</td>
<td>Manufacturing Skills I</td>
<td>3</td>
</tr>
<tr>
<td>ATMT-1200</td>
<td>Machine Tool Theory</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-1300</td>
<td>Manufacturing Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-2120</td>
<td>Machine Operations II</td>
<td>6</td>
</tr>
<tr>
<td>ATMT-1110</td>
<td>Manufacturing Skills II</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-1220</td>
<td>Manufacturing Procedures</td>
<td>4</td>
</tr>
<tr>
<td>ATMT-1330</td>
<td>Manufacturing Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ATMT-2120</td>
<td>Machine Operations II</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Credit Hours: 27

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/millwrighting)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-millwrighting-apprenticeship) 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 turbine.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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>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>Communication requirement (p. 49)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATCT-1310</td>
<td>Carpentry Safety</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2130</td>
<td>Shaft Alignment II</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-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<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 ¹</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2700</td>
<td>Millwright-Pile Driver Weld IV ¹</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>Soc &amp; Behavioral Science requirement (p. 54)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>63-64</td>
</tr>
</tbody>
</table>

¹ Consecutively scheduled course.

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 program teaches the skills 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 skills.
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/millwrighting/millwrighting-certificate.html)

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. 184) 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. 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.

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 contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/operating-engineers)

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.

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

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>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>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<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>CNST-xxxx</td>
<td>CNST Elective</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>ATOE-1700</td>
<td>Paving, Tractor, Backhoe Operations</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-2100</td>
<td>Mobile Crane</td>
<td>2</td>
</tr>
<tr>
<td>ATOE-2600</td>
<td>Bulldozer Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Communication requirement (p. 49) 3

Select one of the following:

<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>CNST-xxxx</td>
<td>CNST Elective</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>ATOE-2200</td>
<td>Mechanical Repair</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-2620</td>
<td>Backhoe Practice</td>
<td>3</td>
</tr>
<tr>
<td>ATOE-xxxx</td>
<td>ATOE Elective course</td>
<td>3-3</td>
</tr>
</tbody>
</table>

Natural Sciences requirement (p. 55) 3

Select one of the following:

<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>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</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>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</td>
</tr>
<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>

Social & Behavioral Sciences requirement (p. 54) 3

Select one of the following:

<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>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
</tbody>
</table>

### Total Credit Hours

62-64

1. ENG-2151 Technical Writing or SPCH-1000 Fundamentals of Interpersonal Communication highly recommended.

2. Recommend PSY-1050 Introduction to Industrial/Organizational Psychology.

Technical Electives

<table>
<thead>
<tr>
<th>Course</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>
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.

Financial Assistance funds cannot be applied towards this program.

**Operating Engineers, Certificate of Proficiency**

**Program contact:** Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/operating-engineers/operating-engineers-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-operating-engineers-apprenticeship) about how certificate credits apply to the related degree.

**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**

<table>
<thead>
<tr>
<th>Course</th>
<th>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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
Second Semester
ATOE-2100 Mobile Crane 2
ATOE-2200 Mechanical Repair 3
ATOE-2600 Bulldozer Practice 3
ATOE-2620 Backhoe Practice 3
ATOE-xxxx ATOE Elective course 1-3
Credit Hours 12-14

Summer Completion
ATOE-2640 Advanced Grader Practice 3
ATOE-2660 Grader Safety 2
ATOE-xxxx ATOE Elective course 1-3
Credit Hours 6-8
Total Credit Hours 30-34

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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/painting)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-painting-apprenticeship) 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></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>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. 52)</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>BADM-xxxx</td>
<td>Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1xxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></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-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>
</tbody>
</table>
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/painting)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-painting-apprenticeship) 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.

Painting, Certificate of Proficiency

1 ATPT-2370 Abrasives Blasting Techniques and ATPT-2380 Special Coating and Decorative Finishes may each be used only once.
### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tbody>
</table>

Total Credit Hours: **34**

---

### 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 [here](http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/pile-driver)

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](mailto:RegistrarOffice@tri-c.edu).

Learn more [here](http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-pile-driving-apprenticeship) 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>Course Code</th>
<th>Course Title</th>
<th>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>ATPD-1330</td>
<td>Print Reading for Pile Driving</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 (p. 52)</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>Course Code</th>
<th>Course Title</th>
<th>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>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>CNST-1510</td>
<td>Green Building &amp; Sustainability I</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities requirement (p. 52)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following: 3
- IT-1010 Introduction to Microcomputer Applications
- IT-101H Honors Introduction to Microcomputer Applications

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMW-2230</td>
<td>Millwright Pile Driver Weld II</td>
<td>2</td>
</tr>
<tr>
<td>ATPD-2020</td>
<td>Pile Driving Technologies</td>
<td>2</td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>Communication requirement (p. 49)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Behavioral Science/Natural and Physical Science requirement (p. 54)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>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>ATPD-2710</td>
<td>Millwright-Pile Driver Weld V</td>
<td>2</td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>Construction Estimating &amp; Cost Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>62</td>
</tr>
</tbody>
</table>

1 ENG-2151 Technical Writing highly recommended.

### 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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/pile-driver/pile-driving-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-pile-driving-apprenticeship) 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>Course</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>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>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>ATMW-1370</td>
<td>Pile Driving on Land and Water</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2020</td>
<td>Pile Driving Technologies</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2220</td>
<td>False Work and Heavy Timber</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2370</td>
<td>Advanced Pile Driving on Land</td>
<td>2</td>
</tr>
<tr>
<td>ATMW-2380</td>
<td>Advanced Pile Driving on Water</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></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>ATPD-2710</td>
<td>Millwright-Pile Driver Weld V</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>32</td>
</tr>
</tbody>
</table>

1 Consecutively scheduled courses.

### 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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/pipefitting)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-pipefitting-apprenticeship) 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

### 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**

<table>
<thead>
<tr>
<th>Course</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>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. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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. 49)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATPF-1360</td>
<td>Hydronic Heating and Cooling</td>
<td>2</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATPL-2510</td>
<td>Pumps</td>
<td>2</td>
</tr>
<tr>
<td>Natural Science requirement (p. 55)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Science requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-1731</td>
<td>Construction Print Reading</td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATPF-2340</td>
<td>Steam Systems</td>
<td>2</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2560</td>
<td>Foreman Certification</td>
<td>2</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIT-2990</td>
<td>Contracting in a Diverse World</td>
<td>3</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>ATPL-2560</td>
<td>Foreman Certification</td>
<td>2</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Recommended courses to select from to fulfill elective requirements.</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business Management</td>
<td>3</td>
</tr>
<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-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>61</td>
</tr>
</tbody>
</table>

**Credit Hours**

1. **154**
2. **Applied Industrial Technology (Pipefitting), Associate of Applied Science**
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/pipefitting/pipefitting-certificate.html)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-pipefitting-apprenticeship) 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 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

<table>
<thead>
<tr>
<th>Course</th>
<th>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>
<tr>
<td>ATPF-1210</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>ATPF-1220</td>
<td>Basic Pipefitting Layout</td>
<td>1</td>
</tr>
<tr>
<td>ATPL-1000</td>
<td>Care and Use of Tools</td>
<td>2</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours 12

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPF-1360</td>
<td>Hydronic Heating and Cooling</td>
</tr>
<tr>
<td>ATPF-2340</td>
<td>Steam Systems</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
</tr>
</tbody>
</table>

Credit Hours 12

Summer Completion

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing Elective</td>
</tr>
<tr>
<td>ATPL-2560</td>
<td>Foreman Certification</td>
</tr>
<tr>
<td>ATPF-xxxx</td>
<td>Pipefitter Elective</td>
</tr>
</tbody>
</table>

Credit Hours 6

Total Credit Hours 30
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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/plumbing)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-plumbing-apprenticeship) 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>Course</th>
<th>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 (p. 52)</td>
<td>1000-level MATH course or higher</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>CNST-xxxx</td>
<td>CNST Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 14

<table>
<thead>
<tr>
<th>Course</th>
<th>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>
<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>CNST-1731</td>
<td>Construction Print Reading</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>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours 13

<table>
<thead>
<tr>
<th>Course</th>
<th>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>
</tbody>
</table>
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/plumbing)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-plumbing-apprenticeship) 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>Course</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>ATPL-1000</td>
<td>Care and Use of Tools (^1)</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1010</td>
<td>Soldering and Brazing (^1)</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-1030</td>
<td>State of Ohio Plumbing Code I</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></td>
<td><strong>Credit Hours</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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>ATPL-2320</td>
<td>State of Ohio Plumbing Code III</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350</td>
<td>Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPT-xxxx</td>
<td>ATPT elective course</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATPL-2410</td>
<td>City &amp; State Backflow Cert</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-xxxx</td>
<td>Plumbing elective</td>
<td>2</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>30</strong></td>
</tr>
</tbody>
</table>

\(^1\) Apprentice may be awarded credit from JATC for life experience.

---

**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 (http://www.tri-c.edu/programs/applied-industrial-technology/skilled-construction-trades/sheet-metal-worker)

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-sheet-metal-working-apprenticeship) 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.
10. Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. 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>Course</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>ATSM-1010</td>
<td>Benefits Management</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1020</td>
<td>Trade History</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1030</td>
<td>Layout and Fabrication I</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1040</td>
<td>OSHA 16 Hour Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATGL-1630</td>
<td>Basic Welding</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATSM-1220</td>
<td>Layout and Fabrication II</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1230</td>
<td>Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2310</td>
<td>Refrigeration I</td>
<td>1</td>
</tr>
<tr>
<td>ATGL-2340</td>
<td>Advanced Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350</td>
<td>Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>MATH-xxxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>Business Elective</td>
<td></td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</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-1731</td>
<td>Construction Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2130</td>
<td>Construction Methods, Materials, and Equipment</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 & Supervision 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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2240</td>
<td>Negotiations</td>
<td>3</td>
</tr>
</tbody>
</table>

### Entrepreneur Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>
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.

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 (http://catalog.tri-c.edu/pathways/apprenticeship-programs-construction-trades-manufacturing/applied-industrial-technology-sheet-metal-working-apprenticeship) 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.
10. Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATGL-1630</td>
<td>Basic Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1010</td>
<td>Benefits Management</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1020</td>
<td>Trade History</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1030</td>
<td>Layout and Fabrication I</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1040</td>
<td>OSHA 16 Hour Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-1220</td>
<td>Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2310</td>
<td>Refrigeration I</td>
<td>1</td>
</tr>
<tr>
<td>ATSM-xxxx</td>
<td>Sheetmetal Working Elective</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>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>ATGL-2340</td>
<td>Advanced Welding</td>
<td>2</td>
</tr>
<tr>
<td>ATPL-2350</td>
<td>Electricity for Plumbers</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-1220</td>
<td>Layout and Fabrication II</td>
<td>2</td>
</tr>
<tr>
<td>ATSM-2330</td>
<td>Layout and Fabrication III</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2340</td>
<td>Advanced Field Installation</td>
<td>3</td>
</tr>
<tr>
<td>ATSM-2420</td>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Total Credit Hours:** 30

1 Consecutively scheduled courses.
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 (http://www.tri-c.edu/programs/automotive-technology)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/automotive-technology) about how certificate credits apply to the related degree.

Program Admission Requirements

- High School Diploma/GED not required, but highly recommended
- Dealership sponsor required for ASEP program
- ASEP student handbooks contain educational and worksite requirements for continuation in program

Other Information

- 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>

- ASEP students need to complete AUTO-2505 Automotive Electrical Diagnosis for General Motors ASEP
- Enrollment in individual courses for students who are not degree majors is permitted

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

<table>
<thead>
<tr>
<th>Course</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 Systems</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

First Semester  Credit Hours  15

Second Semester  Credit Hours  15

<table>
<thead>
<tr>
<th>Course</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>
</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>

Social and Behavioral Sciences Requirements (p. 54)  Credit Hours  3

Third Semester  Credit Hours  15

<table>
<thead>
<tr>
<th>Course</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>
</tbody>
</table>
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](http://www.tri-c.edu/programs/automotive-technology/certificate-automotive-technology.html)

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.
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/automotive-technology/short-term-certificate-automotive-maintenance-general-service.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/automotive-technology) 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>Course</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></td>
<td>Credit Hours</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>12</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/business-management/business-management-program-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/business/business-management) 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. 164)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 165)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 167)
- Bookkeeping, Certificate of Proficiency (p. 115)
- Payroll, Certificate of Proficiency (p. 116)
- Tax Preparation, Certificate of Proficiency (p. 117)

Related Training and Credentials

- Certified Manager of Apartments (p. 334)
- Certificate in Applied Project Management (CAPM) (p. 333)
- Frontline Manager Certificate Program (p. 342)
- Lean Six Sigma Green Belt for Health Care (p. 343)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 344)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 345)

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>Course</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>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)¹</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective</td>
<td>1-3</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>13-15</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2160</td>
<td>Introduction to Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2330</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2501</td>
<td>Business Strategies</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>60-62</td>
</tr>
</tbody>
</table>

¹ MATH-1800-MATH-1819 Special Topics in Math and MATH-2800-2819 Advanced Special Topics in Math and MATH-1820 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.

### Business Management with a Concentration in Human Resources Management, Associate of Applied Business

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.

**Program contact:** Learn more [here](http://www.tri-c.edu/programs/business-management/business-management-human-resource-management.html) about how certificate credits apply to the related degree and about related training programs.

### Related Degrees and Certificates
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 164)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 165)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 167)
- Bookkeeping, Certificate of Proficiency (p. 115)
- Payroll, Certificate of Proficiency (p. 116)
- Tax Preparation, Certificate of Proficiency (p. 117)

### Related Training and Credentials
- Certified Manager of Apartments (p. 334)
- Certificate in Applied Project Management (CAPM) (p. 333)
- Frontline Manager Certificate Program (p. 342)
- Lean Six Sigma Green Belt for Health Care (p. 343)
• Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 344)
• LeanOhio Boot Camp: Transforming the Public Sector (p. 345)

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. **Human Resources.** Gain applied knowledge of the concepts, processes and practices within the human resources function.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher) 1</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

| **Second Semester** |                                             |              |
| ACCT-1310 | Financial Accounting                        | 4            |
| BADM-1121 | Principles of Management and Organizational Behavior |        |
| ECON-2620 | Principles of Microeconomics                | 4            |
| Select one of the following: |                                             | 3            |
| ENG-1020  | College Composition II                     | 3            |
| ENG-102H  | Honors College Composition II              | 3            |
| **Credit Hours** |                                             | **15**       |

| **Third Semester** |                                             |              |
| BADM-1210 | Labor-Management Relations                  | 3            |
| BADM-2330 | Human Resource Management                   | 3            |
| ECON-2610 | Principles of Macroeconomics                | 4            |

### Related Degrees and Certificates
- Business Management, Associate of Applied Business (p. 163)
• Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 164)
• Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 167)
• Bookkeeping, Certificate of Proficiency (p. 115)
• Payroll, Certificate of Proficiency (p. 116)
• Tax Preparation, Certificate of Proficiency (p. 117)

Related Training and Credentials
• Frontline Manager Certificate Program (p. 342)
• Lean Six Sigma Green Belt for Health Care (p. 343)
• Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 344)
• LeanOhio Boot Camp: Transforming the Public Sector (p. 345)

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following 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 solve 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.
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2780</td>
<td>Global Marketing and Distribution</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select Foreign Language elective</td>
<td>3-4</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1340</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2760</td>
<td>Global Trade and Finance</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select Foreign Language elective</td>
<td>3-4</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2790</td>
<td>International Business Strategy and Application</td>
<td>4</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>

Total Credit Hours: 60-62

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 (International Business), Post-Degree Professional Certificate
This program has been deleted effective Fall 2017. Students currently in the program have two years to complete this certificate, until Summer 2019. After Summer 2019, degrees 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.

Gainful Employment Disclosure [http://www.tri-c.edu/about/disclosure/Business_Management-International_Business/Gedt.html]

**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 [http://www.tri-c.edu/programs/business-management/business-management-small-business-management.html]


**Related Degrees and Certificates**
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 164)
- Business Management, Associate of Applied Business (p. 163)
- Business Management with a Concentration in International Business, Associate of Applied Business (p. 165)
- Bookkeeping, Certificate of Proficiency (p. 115)
- Payroll, Certificate of Proficiency (p. 116)
- Tax Preparation, Certificate of Proficiency (p. 117)

**Related Training and Credentials**
- Certified Manager of Apartments (p. 334)
- Frontline Manager Certificate Program (p. 342)
- Lean Six Sigma Green Belt for Health Care (p. 343)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 344)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 345)

**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 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**

<table>
<thead>
<tr>
<th>Course</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>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)¹</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective</td>
<td>1-3</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>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16-18</td>
</tr>
</tbody>
</table>

| **Second Semester** |                                          |              |
| ACCT-1310 | Financial Accounting                      | 4            |
| BADM-1121 | Principles of Management and Organizational Behavior | 4 |
| ECON-2620 | Principles of Microeconomics             | 4            |
| Select one of the following: |                                      |              |
| ENG-1020 | College Composition II                   | 3            |
| ENG-102H | Honors College Composition II            | 3            |
|         | Credit Hours                             | 15           |

| **Third Semester** |                                             |              |
| BADM-1300 | Small Business Management                   | 4            |
| BADM-2010 | Business Communication                      | 3            |
| ECON-2610 | Principles of Macroeconomics               | 4            |
| MARK-2010 | Principles of Marketing                    | 3            |
|         | Credit Hours                              | 14           |
Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2450</td>
<td>New Business Development</td>
<td>5</td>
</tr>
<tr>
<td>BADM-2470</td>
<td>Marketing Techniques for Small Business</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 15

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 Technology, Associate of Applied Business (formerly Administrative Office Systems)

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 (http://www.tri-c.edu/programs/business-management/business-technology/associate-degree-business-technology.html)

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 (http://catalog.tri-c.edu/pathways/business/business-technology) 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 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 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 word processing, spreadsheet, presentation and database applications.
3. Apply administrative 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. Operate web-based meetings utilizing software collaborative resources.
7. Apply the principles of emotional intelligence when interacting with others in the workplace.
8. Describe the traits of effective leadership, and distinguish between appropriate types of feedback.
9. Recognize the value of working in a diverse environment.
10. Utilize time effectively and perform tasks in a timely and efficient manner.
11. Collaborate with colleagues to accomplish common goals.
12. Apply principles of quality and ethics to a wide variety of business scenarios.

Course Title Credit Hours

First Semester

<table>
<thead>
<tr>
<th>Course</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>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1011</td>
<td>Business Math Applications</td>
<td></td>
</tr>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 15

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>BT-2220</td>
<td>Business Spreadsheet Applications (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>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>2-3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 15-17
### Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</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>BT-2410</td>
<td>Administrative Management</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>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
</tbody>
</table>

### Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</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>Social and Behavioral Science/Natural and Physical Science requirements (p. 47)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>BT Elective or Certificate Requirement</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours:** 16-15

### Code Title Credit Hours

**ELECTIVES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1520</td>
<td>QuickBooks Immersion</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>2</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>
<td>3</td>
</tr>
</tbody>
</table>

### Administrative Specialist, Certificate of Proficiency

The Certificate of Proficiency in Administrative Specialist offers coursework in business practices and workplace technology in order to prepare students for a variety of entry-level administrative positions including Administrative Assistant, Clerical Assistant, Receptionist and Office Assistant.

**Program Contact:** Learn more (http://www.tri-c.edu/programs/business-management/business-technology/administrative-specialist.html)

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 (http://catalog.tri-c.edu/pathways/business/business-technology) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure** (http://www.tri-c.edu/about/disclosure/Administrative_Specialist/Gedt.html)

- 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 organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Listen, read and provide verbal, written and electronic instructions, direction and procedures; responding appropriately to coworkers, clients and other professionals.
4. Create, input, edit, organize and print various data/business documents accurately and according to business industry standards using available office technology.
5. Apply knowledge of various types of record classification systems using appropriate materials and equipment.

### Course Title Credit Hours

**Summer Semester**

Select one of the following: 3

<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-1020</td>
<td>Applied Accounting</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>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: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
</tbody>
</table>
Basic Office Skills, Short-Term Certificate

This program has been deleted effective Fall 2017. Students currently in the program have two years to complete this program until Summer 2019. After Summer 2019, certificates will no longer be granted for this program.

Coursework to complete this program has been moved under Business Technology (p. 422). Current students should see a counselor to plan for program completion or transitioning into available certificates under the Business Technology program (http://catalog.tri-c.edu/pathways/business/business-technology).

Program contact: Learn more (http://www.tri-c.edu/programs/business-management/business-technology/associate-degree-business-technology.html)

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Basic_Office_Skills/Gedt.html)

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.

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 (http://www.tri-c.edu/programs/business-management/business-technology/entrepreneurial-technology.html)

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 (http://catalog.tri-c.edu/pathways/business/business-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Entrepreneurial_Technology/Gedt.html)

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 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.
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. Recipients of this certificate can apply all earned credits towards the Business Technology degree program.
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 [here](http://www.tri-c.edu/programs/business-management/business-technology/medical-administrative-specialist-certificate.html)

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 [here](http://www.tri-c.edu/about/disclosure/MedicalAdministrativeSpecialist/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td>9</td>
</tr>
<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>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td>13</td>
</tr>
<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 Communication</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>
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.


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 (http://catalog.tri-c.edu/pathways/business/business-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Microsoft_Office_Specialist/Gedt.html)

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>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ACCT-1011 Business Math Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT-1020 Applied Accounting</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>IT-1010 Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<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><strong>Credit Hours</strong></td>
<td>11</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>BT-2200 Advanced Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BT-2220 Business Spreadsheet Applications (Excel)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>23</td>
</tr>
</tbody>
</table>

Office Operations Management, Certificate of Proficiency

This program has been deleted effective Fall 2017. Students currently in the program have two years to complete this program until Summer 2019. After Summer 2019, certificates will no longer be granted for this program.

Coursework to complete this program has been moved under Business Technology (p. 422). Current students should see a counselor to plan for program completion or transitioning into available certificates under the Business Technology program (http://catalog.tri-c.edu/pathways/business/business-technology).

Program contact: Learn more (http://www.tri-c.edu/programs/business-management/business-technology/associate-degree-business-technology.html)

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.
Virtual Office Assistant, Certificate of Proficiency

This program has been deleted effective Fall 2017. Students currently in the program have two years to complete this program until Summer 2019. After Summer 2019, certificates will no longer be granted for this program.

Coursework to complete this program has been moved under Business Technology (p. 422). Current students should see a counselor to plan for program completion or transitioning into available certificates under the Business Technology program (http://catalog.tri-c.edu/pathways/business/business-technology).

Program contact: Learn more (http://www.tri-c.edu/programs/business-management/business-technology/associate-degree-business-technology.html)

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 (http://www.tri-c.edu/about/disclosure/Virtual_Office_Assistant/Gedt.html)

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 the skills required to meet the challenges and opportunities available to court reporters in the modern workplace.

Program contact: Learn more (http://www.tri-c.edu/programs/captioning-and-court-reporting)

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 (http://catalog.tri-c.edu/pathways/business/captioning-court-reporting) 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. 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.
6. Apply appropriate courtroom procedures to professional work.
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.

Students must select either Option A (Court Reporting - Stenowriting) or Option B (Voicewriting) to complete this degree program.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following options:</td>
<td>5</td>
</tr>
<tr>
<td>Option A</td>
<td>C&amp;CR-1000 Introduction to Court Reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C&amp;CR-1300 Realtime Theory I</td>
<td></td>
</tr>
<tr>
<td>Option B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### C&CR-1100 Introduction to Voice Captioning
### C&CR-1200 Voicewriting I ¹
### C&CR-1210 Voicewriting II ¹
Select one of the following: ³
### ENG-1010 College Composition I
### ENG-101H Honors College Composition I

**Credit Hours** ¹¹

#### Second Semester
C&CR-1521 Realtime Theory Reinforcement ²
C&CR-2200 Medical Terminology for Captioning and Court Reporting ³
C&CR-2350 Editing Legal Documents ²
MATH-1xxx ¹000-level MATH course or higher ³
(p. 44)
Select one of the following options: ⁴
- **Option A**
  - C&CR-1330 Realtime Theory II
  - C&CR-1340 Realtime Theory III
- **Option B**
  - C&CR-1220 Voicewriting III

**Credit Hours** ¹⁴

#### Summer Session
C&CR-1451 Speedbuilding and Transcription at 140 WPM ³
C&CR-1601 Court Reporting Technology ⁴
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
Arts & Humanities requirement (p. 45) ³
Social and Behavioral Sciences requirement (p. 47) ³

**Credit Hours** ¹⁵

#### Fourth Semester
BADM-1300 Small Business Management ⁴
C&CR-2451 Speedbuilding and Transcription at 225 WPM ³
C&CR-2470 Advanced Technology ³
C&CR-2840 Internship ¹
C&CR-xxxx Any C&CR elective course ¹
Communication requirement (p. 43) ³

**Credit Hours** ¹⁵

**Total Credit Hours** ⁶⁴

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>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-1000</td>
<td>Introduction to Court Reporting</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1300</td>
<td>Realtime Theory I</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-1330</td>
<td>Realtime Theory II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1340</td>
<td>Realtime Theory III</td>
<td>2</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** 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>
</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-1220</td>
<td>Voicewriting III</td>
<td>4</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credit Hours** ⁶⁴

### 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 (http://www.tri-c.edu/programs/captioning-and-court-reporting/captioning-and-court-reporting-certified-stenowriting-certificate.html)
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 (http://catalog.tri-c.edu/pathways/business/captioning-court-reporting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/CCR_Certified_Stenowriter/Gedt.html)

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. 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.
6. Apply appropriate courtroom procedures to professional work.
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>Course</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>C&amp;CR-1000</td>
<td>Introduction to Court Reporting</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1300</td>
<td>Realtime Theory I</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>8</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1330</td>
<td>Realtime Theory II</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1340</td>
<td>Realtime Theory III</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-1521</td>
<td>Realtime Theory Reinforcement</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-2350</td>
<td>Editing Legal Documents</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>8</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1451</td>
<td>Speedbuilding and Transcription at 140 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1601</td>
<td>Court Reporting Technology</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-xxxx</td>
<td>Any C&amp;CR elective course</td>
<td>1-3</td>
</tr>
</tbody>
</table>

1 This class is only offered in the summer specific to C&CR 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.

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 (http://catalog.tri-c.edu/pathways/business/captioning-court-reporting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/CCR_Certified_Voicewriter/Gedt.html)

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. 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.
6. Apply appropriate courtroom procedures to professional work.
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.
8. Prepared to sit for the NCRA Registered Professional Reporter (RPR) or NVRA Certified Verbatim Reporter (CVR) Exam.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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></td>
<td>Credit Hours</td>
<td>8</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1220</td>
<td>Voicewriting III</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-1451</td>
<td>Speedbuilding and Transcription at 140 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2350</td>
<td>Editing Legal Documents</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>Summer Session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-2401</td>
<td>Speedbuilding and Transcription at 180 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1601</td>
<td>Court Reporting Technology</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-xxxx</td>
<td>Any C&amp;CR elective course</td>
<td>1-3</td>
</tr>
</tbody>
</table>

CJ-1120 Criminal Court Procedures 2

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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-2300</td>
<td>Court Procedures</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2451</td>
<td>Speedbuilding and Transcription at 225 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2602</td>
<td>Technical Terminology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>12</td>
</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;CR-2470</td>
<td>Advanced Technology</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2840</td>
<td>Internship</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-xxxx</td>
<td>Any C&amp;CR elective course</td>
<td>1-3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>5-7</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>44-48</td>
</tr>
</tbody>
</table>

1 This class is only offered in the summer specific to C&CR students.

Captioning and Cart Providing, Short-Term Certificate

Captioners and CART (computer-assisted realtime 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 (http://www.tri-c.edu/programs/captioning-and-court-reporting/certificate-captioning-and-cart-providing.html)

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 (http://catalog.tri-c.edu/pathways/business/captioning-court-reporting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Captioning_and_CART_Providing/Gedt.html)

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 realtime 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-2401</td>
<td>Speedbuilding and Transcription at 180 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2480</td>
<td>Using Captioning Technology</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2510</td>
<td>CART Production</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2451</td>
<td>Speedbuilding and Transcription at 225 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2520</td>
<td>Captioning Production</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2602</td>
<td>Technical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2550</td>
<td>Writing for Captioning and CART</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-2910</td>
<td>Internship for Captioning and CART</td>
<td>1</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-2550</td>
<td>Writing for Captioning and CART</td>
<td>2</td>
</tr>
<tr>
<td>C&amp;CR-2910</td>
<td>Internship for Captioning and CART</td>
<td>1</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

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 Admission 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1350</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1000</td>
<td>Introduction to Court Reporting</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1100</td>
<td>Introduction to Voice Captioning</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1300</td>
<td>Realtime Theory I</td>
<td>4</td>
</tr>
<tr>
<td>C&amp;CR-1200</td>
<td>Voicewriting I</td>
<td>1</td>
</tr>
<tr>
<td>&amp; C&amp;CR-1210</td>
<td>and Voicewriting II</td>
<td>1</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-2350</td>
<td>Editing Legal Documents</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1330</td>
<td>Realtime Theory II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; C&amp;CR-1340</td>
<td>and Realtime Theory III</td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-1220</td>
<td>Voicewriting III</td>
<td>6</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>
Voicewriting, Short-Term Certificate

Entry-level court reporter in the judicial/official, freelance, 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 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 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. In the following states this certificate prepares you for entry-level CART and captioning work whereas voice writers are currently not allowed to practice in their judicial systems: California, Hawaii, Idaho, Illinois, Iowa, Montana, Nebraska, New Jersey, New York, Ohio, Oklahoma, Rhode Island, Vermont.

Program contact: Learn more (http://www.tri-c.edu/programs/captioning-and-court-reporting/voicewriting-short-term-certificate.html)

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 (http://catalog.tri-c.edu/pathways/business/captioning-court-reporting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Voicewriting_ST_Certificate/Gedt.html)

Program Admissions Requirements

- Eligibility for ENG-1010 College Composition I.

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. 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.
6. 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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-2350</td>
<td>Editing Legal Documents</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>10</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>10</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;CR-2451</td>
<td>Speedbuilding and Transcription at 225 WPM</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-2840</td>
<td>Internship</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>24</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 (http://www.tri-c.edu/programs/conflict-resolution-and-peace-studies-certificate)

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 (http://catalog.tri-c.edu/pathways/humanities-liberal-arts-social-behavioral-sciences/conflict-resolution-peace-studies) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Conflict_Resolution/Gedt.html)

**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>Course</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>POL-1040</td>
<td>Introduction to Peace and Conflict Studies</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>Select 1 or 2 Electives from below list</td>
<td>3-6</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><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL-2040</td>
<td>Conflict Resolution Skills</td>
<td>3</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-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1210</td>
<td>Labor-Management Relations</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>
</tr>
<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>
</tr>
<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>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-2160</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>WST-1510</td>
<td>Introduction to Women’s Studies</td>
<td>3</td>
</tr>
<tr>
<td>WST-200H</td>
<td>Honors Women and Reform</td>
<td>3</td>
</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 (http://www.tri-c.edu/programs/engineering-technology/construction-engineering-technology.html)

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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/construction) 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.
- Completion of 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, and IT-1010 Introduction to Microcomputer 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>
</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>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td>16</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-2130</td>
<td>Construction Methods, Materials, and Equipment</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>
<tr>
<td>Third Semester</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>CNST-2200</td>
<td>Architectural 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>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MET-1601</td>
<td>Technical Statics</td>
<td>3</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>CNST-2330</td>
<td>Construction Scheduling</td>
<td>3</td>
</tr>
<tr>
<td>CNST-xxxx</td>
<td>CNST Elective</td>
<td>3</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/engineering-technology/construction-project-management.html)

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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/construction) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Construction_Project_Management/Gedt.html)

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>Course</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>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>
</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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-2130</td>
<td>Construction Methods, Materials, and Equipment</td>
<td></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>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

1. ACCT-1310 Financial Accounting recommended for university transfer
2. CNST-1510 Green Building & Sustainability I recommended for university transfer
Criminal Justice, Associate of Applied Science

Various aspects of law enforcement and criminal justice are covered, including policing, the judicial system, criminal investigations, industrial/corporate security and juvenile delinquency. The course sequence offers a balanced and broad education to students who plan to enter law enforcement as a career. It helps in-service police officers upgrade themselves for advancement within the ranks. Many students join a municipal force but career opportunities also are available in county, state and federal governments.

Program contact: Learn more (http://www.tri-c.edu/programs/criminal-justice)

Learn more (http://catalog.tri-c.edu/pathways/public-safety/criminal-justice) about related degrees and training programs.

Related Degrees and Certificates
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 184)
- Criminal Justice ( Corrections), Associate of Applied Science (p. 185)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 186)

Related Training and Credentials
- Basic Police Academy (p. 351)
- Private Security Academy (p. 359)

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 law enforcement professions.
2. Apply 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 positions.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></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>
<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>Second Semester</td>
<td></td>
<td></td>
</tr>
<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 (p. 52)</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>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CJ-2300</td>
<td>Juvenile Delinquency</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2390</td>
<td>The Investigative Process</td>
<td>4</td>
</tr>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1xxx</td>
<td>Any 1000 level SPCH elective course or higher</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td></td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td></td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td></td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CJ-1010</td>
<td>Computers in Criminal Justice</td>
<td>2</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>
<tr>
<td>CJ-xxxx</td>
<td>Criminal Justice Elective</td>
<td>3</td>
</tr>
</tbody>
</table>
184  Criminal Justice with a Concentration in Basic Police Academy, Associate of Applied Science

<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>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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1300</td>
<td>Patrol Operations</td>
<td>4</td>
</tr>
<tr>
<td>CJ-1310</td>
<td>Traffic Enforcement and Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1330</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>PE-1000</td>
<td>Personal Fitness</td>
<td>2</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>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>
<tr>
<td>SPCH-1xxx</td>
<td>Any 1000 level SPCH elective course or higher</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1020</td>
<td>Introduction to Homeland Security</td>
<td>2</td>
</tr>
</tbody>
</table>

1. Recognize and practice ethical behavior associated with the law enforcement professions.
2. Apply 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 in the technical areas of firearm and patrol techniques, defensive driving and traffic enforcement and investigation.

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 (http://www.tri-c.edu/programs/criminal-justice/basic-police-academy.html)

Learn more (http://catalog.tri-c.edu/pathways/public-safety/criminal-justice) about related degrees and training programs.

Related Degrees and Certificates
- Criminal Justice, Associate of Applied Science (p. 183)
- Criminal Justice (Corrections), Associate of Applied Science (p. 185)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 186)

Related Training and Credentials
- Basic Police Academy (p. 351)

Program Admission Requirements
- High School Diploma/GED
- Current valid driver’s license
- Must be at least 21 years of age at completion of academy
- No felony convictions (misdemeanor convictions will be reviewed by Academy commander)

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 law enforcement professions.
2. Apply 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 in the technical areas of firearm and patrol techniques, defensive driving and traffic enforcement and investigation.
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 law enforcement professions.
2. Apply 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<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>
<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><strong>Second Semester</strong></td>
<td></td>
</tr>
<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>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>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-2160</td>
<td>Introduction to Criminology</td>
<td></td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Third Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CJ-2300</td>
<td>Juvenile Delinquency</td>
<td>2</td>
</tr>
<tr>
<td>CJ-2510</td>
<td>Community Supervision and Aftercare</td>
<td>4</td>
</tr>
</tbody>
</table>

Related Degrees and Certificates
- Criminal Justice, Associate of Applied Science (p. 183)
- Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 184)
- Criminal Justice (Security Administration), Associate of Applied Science (p. 186)

Program Admissions Requirements
- High school diploma or GED highly recommended.
Criminal Justice Elective 2
SPCH-1xxx 1 Any 1000 level SPCH elective course or higher 3
Select one of the following: 3
IT-1010 Introduction to Microcomputer Applications
IT-101H Honors Introduction to Microcomputer 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

1 SPCH-1010 Fundamentals of Speech Communication highly recommended.

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 (http://www.tri-c.edu/programs/criminal-justice/security-administration.html)

Learn more (http://catalog.tri-c.edu/pathways/public-safety/criminal-justice) about related degrees and training programs.

Related Degrees and Certificates
• Criminal Justice, Associate of Applied Science (p. 183)
• Criminal Justice (Basic Police Academy), Associate of Applied Science (p. 184)
• Criminal Justice (Corrections), Associate of Applied Science (p. 185)

Related Training and Credentials
• Private Security Academy (p. 359)

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 law enforcement professions.
2. Apply 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CJ-1000</td>
<td>Introduction to Criminal Justice 1</td>
<td>3</td>
</tr>
<tr>
<td>CJ-1050</td>
<td>Introduction to Security 1</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1120</td>
<td>Criminal Court Procedures 1</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>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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td>15</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>CJ-1010</td>
<td>Computers in Criminal Justice</td>
<td>2</td>
</tr>
<tr>
<td>CJ-1400</td>
<td>Assets Protection</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td></td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td></td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/deaf-interpretive-services)

Learn more (http://catalog.tri-c.edu/pathways/humanities-liberal-arts-social-behavioral-sciences/deaf-interpretive-services) 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 be 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 I 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 includes, 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>Course</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>ASL-1001</td>
<td>Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>ASL-1100</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>DIS-1300</td>
<td>Interpreting Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EN1-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASL-2412</td>
<td>Advanced American Sign Language I</td>
<td>4</td>
</tr>
<tr>
<td>ASL-xxxx</td>
<td>ASL Elective</td>
<td>2</td>
</tr>
<tr>
<td>DIS-1310</td>
<td>Interpreting I</td>
<td>2</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>THEA-1500</td>
<td>Acting I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASL-2420</td>
<td>Advanced American Sign Language II</td>
<td>4</td>
</tr>
<tr>
<td>DIS-2300</td>
<td>Translating</td>
<td>2</td>
</tr>
<tr>
<td>DIS-2310</td>
<td>Interpreting II</td>
<td>2</td>
</tr>
<tr>
<td>DIS-2320</td>
<td>Educational Interpreting</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIS-1402</td>
<td>American Sign Language Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>DIS-1740</td>
<td>Field Experience Lab I</td>
<td>1</td>
</tr>
<tr>
<td>DIS-1940</td>
<td>Field Experience I</td>
<td>1</td>
</tr>
<tr>
<td>DIS-1971</td>
<td>Field Experience Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>DIS-2410</td>
<td>Voicing</td>
<td>2</td>
</tr>
<tr>
<td>EDUC-1011</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td></td>
</tr>
<tr>
<td>CCR-1350</td>
<td>Legal Terminology</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIS-2420</td>
<td>Advanced Voicing</td>
<td>2</td>
</tr>
<tr>
<td>DIS-2740</td>
<td>Field Experience Lab II</td>
<td>1</td>
</tr>
<tr>
<td>DIS-2940</td>
<td>Field Experience II</td>
<td>1</td>
</tr>
<tr>
<td>DIS-2971</td>
<td>Field Experience Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>EDUC-1411</td>
<td>Individuals with Exceptionalities</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>PE-1430</td>
<td>Physical Relaxation Techniques</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>65</td>
</tr>
</tbody>
</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.
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 (http://www.tri-c.edu/programs/health-careers/dental-hygiene)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/dental-hygiene) about related training programs.

Related Training and Credentials
Continuing Education Courses for the Dental and Health Care Professional (p. 486)

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
- ENG-1010 College Composition I with "C" or higher.
- BIO-1100 Introduction to Biological Chemistry with "C" or higher.
- BIO-2331 Anatomy and Physiology I with "C" or higher.
- PSY-1010 General Psychology with "C" or higher.
- GPA required: 3.0 admission requirements, 2.5 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 2.5 while awaiting matriculation into the Dental Hygiene program.
- Non-native English speaking applicants: The Commission on Dental Accreditation and Cuyahoga Community College Dental Hygiene Program Competencies mandate that students be competent in interpersonal and communication skills to effectively interact with diverse populations. The ability to communicate verbally and in written form is basic to the provision of oral health services in a safe and effective manner. Therefore, applicants whose native language is not English must take the TOEFL. See http://www.toefl.org. Applicants must achieve the following minimum scores: Reading-21, Listening-21, Writing-23 and Speaking-25.

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry¹</td>
<td>3</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I¹</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</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>PSY-1010</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>DENT-1300</td>
<td>Preventive Oral Health Services I</td>
<td>4</td>
</tr>
<tr>
<td>DENT-1311</td>
<td>Dental Anatomy, Histology &amp; Embryology</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1320</td>
<td>Dental Hygiene Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>DENT-1330</td>
<td>Radiology</td>
<td>3</td>
</tr>
<tr>
<td>DENT-1341</td>
<td>Foundational Principles of Dental Hygiene Practice</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics²</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>DENT-1400</td>
<td>Preventive Oral Health Services II</td>
<td>5</td>
</tr>
<tr>
<td>DENT-1410</td>
<td>Current Concepts in Dental Materials</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1420</td>
<td>Periodontics I</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1431</td>
<td>Head and Neck Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>DENT-1440</td>
<td>General and Oral Pathology</td>
<td>2</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>DENT-2200</td>
<td>Local Anesthesia and Pain Management</td>
<td>2</td>
</tr>
<tr>
<td>DENT-2300</td>
<td>Preventive Oral Health Services III</td>
<td>5</td>
</tr>
<tr>
<td>DENT-2321</td>
<td>Periodontics II</td>
<td>1</td>
</tr>
<tr>
<td>DENT-2332</td>
<td>Pharmacology and Therapeutics</td>
<td>2</td>
</tr>
<tr>
<td>DENT-2340</td>
<td>Community Oral Health I</td>
<td>1</td>
</tr>
<tr>
<td>DIET-1220</td>
<td>Nutrition for Dental Hygiene³</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>DENT-2400</td>
<td>Preventive Oral Health Services IV</td>
<td>5</td>
</tr>
<tr>
<td>DENT-2440</td>
<td>Community Oral Health II</td>
<td>1</td>
</tr>
<tr>
<td>DENT-2990</td>
<td>Dental Hygiene Practice⁴</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td></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 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, 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 [here](http://www.tri-c.edu/programs/health-careers/diagnostic-medical-sonography)

Learn more [here](http://catalog.tri-c.edu/pathways/health-careers/diagnostic-medical-sonography) about how certificate credits apply to the related degree.
Related Degrees and Certificates
• Diagnostic Medical Sonography (General Sonography), Associate of Applied Science (p. 192)

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) 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.
• Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher.
• Complete MATH-1410 Elementary Probability and Statistics I with "C" or higher. MATH-1530 College Algebra or higher will also be accepted with a "C" or higher.
• Complete each of the following with "C" grade or higher: BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II (or BIO-2330 and BIO-2340), DMS-1071 Concepts of Physics in Diagnostic Sonography, DMS-1303 Introduction to Sonography, DMS-1320 Introduction to Sonographic Scanning, DMS-1351 Patient Care Skills.
• GPA required: Minimum 3.0 GPA for DMS-1303 Introduction to Sonography, DMS-1320 Introduction to Sonographic Scanning, and DMS-1071 Concepts of Physics in Diagnostic Sonography (total 5 credits). Minimum 3.0 for BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II (total 8 credits). GPA calculated using only the Tri-C specific admission course credit hours listed above.
• 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 inpatients. See the DMS application packet for details and the required form.

Other Information
• 24-40 students accepted per year.
• Criminal background check (http://www.tri-c.edu/programs/healthcareers/background-check-information-bci.html) required. Also see General Application Procedures (p. 108) 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.
• Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org (http://www.ets.org)) will be the responsibility of the student.
• 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></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>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>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics 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>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>Total</strong></td>
<td>20</td>
</tr>
</tbody>
</table>

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-1311</td>
<td>Initial Sonographic Scanning</td>
<td>2</td>
</tr>
<tr>
<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
<td>1</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMS-1602</td>
<td>Echocardiography I (Option A)</td>
<td></td>
</tr>
<tr>
<td>DMS-1701</td>
<td>Vascular Sonography I (Option B)</td>
<td></td>
</tr>
<tr>
<td><strong>Select one of the following:</strong></td>
<td></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>
<tr>
<td><strong>Credit Hours</strong></td>
<td><strong>Total</strong></td>
<td>8</td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-1940</td>
<td>Field Experience I</td>
<td>1</td>
</tr>
</tbody>
</table>
Diagnostic Medical Sonography with a Concentration in General Sonography, Associate of Applied Science

DMS-2301 Intermediate Sonographic Scanning 2
PSY-1060 Cross-Cultural Competency for Health Care Providers 1

Select one of the following:
DMS-2602 Echocardiography II (Option A)
DMS-2702 Vascular Sonography II (Option B)

Select one of the following
ENG-1020 College Composition II
ENG-102H Honors College Composition II 3

Credit Hours 7

Summer Session
DMS-1950 Field Experience II 2

Credit Hours 2

Third Semester
DMS-1381 Cardiac Diagnostic Procedures 3
DMS-235A Sonographic Principles, Performance, and Safety 2
DMS-2940 Field Experience III 3
DMS-2985 Physics Review 1
DMS-2991 Sonography Capstone 1

Credit Hours 10

Fourth Semester
DMS-2950 Field Experience IV 1
DMS-2981 Specialty Registry Review 1
DMS-xxxx DMS Elective 1-2
HTEC-1110 Ethics for Health Care Professionals 4 1

Select one of the following:
DMS-2650 Pediatric Cardiac Sonography (Option A) 2
DMS-2760 Transcranial Doppler Sonography (Option B) 2

Credit Hours 4-5

Total Credit Hours 51-52

(B) Vascular Option
Take the following courses to complete Option B:
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:

Code Title Credit Hours
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

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.
Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/diagnostic-medical-sonography)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/diagnostic-medical-sonography-general) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Diagnostic Medical Sonography, Associate of Applied Science (p. 190)

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.
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher.
- Complete MATH-1410 Elementary Probability and Statistics I with "C" or higher. MATH-1530 College Algebra or higher will also be accepted with a "C" or higher.
- 16-24 students accepted per year.
- Minimum 3.0 for DMS-1303 Introduction to Sonography, DMS-1320 Introduction to Sonographic Scanning and DMS-1071 Concepts of Physics in Diagnostic Sonography (total 5 credits)
- Minimum 3.0 for BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II (total 8 credits)
- 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.
- 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 of Physics in Diagnostic Sonography</td>
<td>2</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) required. Also see General Application Procedures (p. 108) for Health Careers.
- Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org) will be the responsibility of the student.
- 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>Course</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 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>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics 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>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>

**First Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-1311</td>
<td>Initial Sonographic Scanning</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1401</td>
<td>Abdominal Sonography I</td>
<td>4</td>
</tr>
<tr>
<td>DMS-1500</td>
<td>Obstetrical Sonography</td>
<td>4</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</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>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</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>DMS-1940</td>
<td>Field Experience I</td>
<td>1</td>
</tr>
<tr>
<td>DMS-2301</td>
<td>Intermediate Sonographic Scanning</td>
<td>2</td>
</tr>
<tr>
<td>DMS-2401</td>
<td>Abdominal Sonography II</td>
<td>4</td>
</tr>
<tr>
<td>DMS-2500</td>
<td>Obstetrical Sonography</td>
<td>4</td>
</tr>
<tr>
<td>PSY-1060</td>
<td>Cross-Cultural Competency for Health Care Providers</td>
<td>1</td>
</tr>
</tbody>
</table>

**Summer Session**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-1950</td>
<td>Field Experience II</td>
<td>2</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-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>

**Third Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-235A</td>
<td>Sonographic Principles, Performance, and Safety</td>
<td>2</td>
</tr>
<tr>
<td>DMS-235B</td>
<td>Doppler Principles and Instrumentation</td>
<td>1</td>
</tr>
<tr>
<td>DMS-2940</td>
<td>Field Experience III</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2985</td>
<td>Physics Review</td>
<td>1</td>
</tr>
<tr>
<td>DMS-2991</td>
<td>Sonography Capstone</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours 5

**Fourth Semester**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-2950</td>
<td>Field Experience IV</td>
<td>1</td>
</tr>
<tr>
<td>DMS-2981</td>
<td>Specialty Registry Review</td>
<td>1</td>
</tr>
<tr>
<td>DMS-xxxx</td>
<td>DMS Elective</td>
<td>1-2</td>
</tr>
<tr>
<td>HTEC-1110</td>
<td>Ethics for Health Care Professionals</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours 4-5

Total Credit Hours 64-65

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. 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 Speciality Registry Review</td>
<td>1</td>
</tr>
</tbody>
</table>

A graduate of the Dietetic Technology Program or Dietetic Technician is a food and nutrition practitioner, often working in conjunction with a Registered Dietitian. Dietetic Technicians work in a variety of employment settings including health care (assisting Registered Dietitians in providing medical nutrition therapy), in hospitals, HMO’s, clinics, or other health care facilities. Dietetic Technicians 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  
312-899-0040, 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 (http://www.tri-c.edu/programs/health-careers/dietetic-technology)

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 (http://catalog.tri-c.edu/pathways/health-careers/dietetic-technology) 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

- 20 students accepted per year.
- Dietetic Technology students are required to complete 30 hours of volunteer time in order to graduate from the program. 15 hours must be completed prior to program admission. Please contact Program Manager 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) BCI prior to admission into DTP as specified.

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 statues 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

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy and Physiology I</td>
<td>BIO-2331</td>
</tr>
<tr>
<td>Anatomy and Physiology II</td>
<td>BIO-2341</td>
</tr>
<tr>
<td>Basic Nutrition</td>
<td>DIET-1200</td>
</tr>
<tr>
<td>Introduction to Dietetics</td>
<td>DIET-1310</td>
</tr>
<tr>
<td>Nutrition Applications</td>
<td>DIET-1320</td>
</tr>
<tr>
<td>Sanitation and Safety</td>
<td>HOSP-1020</td>
</tr>
<tr>
<td>Contemporary Mathematics (or higher)</td>
<td>MATH-1240</td>
</tr>
<tr>
<td>Medical Terminology I</td>
<td>MA-1020</td>
</tr>
<tr>
<td>Medical Nutrition Therapy I</td>
<td>DIET-2301</td>
</tr>
<tr>
<td>Life Cycle Nutrition - Pregnancy and Lactation</td>
<td>DIET-2410</td>
</tr>
<tr>
<td>Life Cycle Nutrition - Nutrition for Children</td>
<td>DIET-2420</td>
</tr>
<tr>
<td>Life Cycle Nutrition - Nutrition through Adulthood</td>
<td>DIET-2430</td>
</tr>
<tr>
<td>Community Nutrition Practicum</td>
<td>DIET-2863</td>
</tr>
<tr>
<td>General Psychology</td>
<td>PSY-1010</td>
</tr>
<tr>
<td>Honors General Psychology</td>
<td>PSY-101H</td>
</tr>
<tr>
<td>Fundamentals of Speech Communication</td>
<td>SPCH-1010</td>
</tr>
<tr>
<td>Honors Fundamentals of Speech Communication</td>
<td>SPCH-101H</td>
</tr>
<tr>
<td>Medical Nutrition Therapy II</td>
<td>DIET-2311</td>
</tr>
<tr>
<td>Medical Nutrition Therapy III</td>
<td>DIET-2320</td>
</tr>
</tbody>
</table>

Credit Hours

7
15
13
17
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 (http://www.tri-c.edu/programs/health-careers/dietetic-technology/dietary-management-certificate)

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 (http://catalog.tri-c.edu/pathways/health-careers/dietetic-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Dietary_Management/Gedt.html)

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></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>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. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></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>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</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>
<tr>
<td>DIET-1580</td>
<td>Cost Control Procedures</td>
<td>1</td>
</tr>
</tbody>
</table>

1 MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240 Contemporary Mathematics. 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.

2 1st eight week course.

3 2nd eight week course.
DIET-1590 Purchasing Procedures 1
DIET-1600 Introduction to Supervision 3
DIET-1940 Dietary Managers Field Experience 1
DIET-2301 Medical Nutrition Therapy I 3
DIET-xxxx DIET Elective course 2-3

Credit Hours 15-16

Total Credit Hours 30-31

1 MATH-1240 Contemporary Mathematics is required for Dietetic Technology Program.

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 (http://www.tri-c.edu/programs/health-careers/dietetic-technology/general-nutrition-certificate.html)

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 (http://www.tri-c.edu/about/disclosure/General_Nutrition/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</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>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>
<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>

Credit Hours 17

Second 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>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.

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 (http://www.tri-c.edu/programs/early-childhood-education)

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 (http://catalog.tri-c.edu/pathways/humanities-liberal-arts-social-behavioral-sciences/early-childhood-education) about how certificate credits apply to the related degree.

Program Admission Requirements

- Details of program admission will be explained to students enrolled in ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs course offered each semester.
- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENGL-101H Honors College Composition I with "C" or higher
- Complete Mathematics placement test
- Complete ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs with "C" grade or higher

Other Information

- Applicants for Early Childhood Education 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 [of Divisions (A)(8) or (A)(9) of Section 109.572 or division (A)(1) of 5104.09 of the Revised Code] and that no child has been removed from their home

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester ECED-1010</td>
<td>Introduction to Early Childhood Education: Children’s Development and Programs</td>
<td>4</td>
</tr>
</tbody>
</table>
MATH-1xxx  1000-level MATH course or higher  3
SPCH-1000  Fundamentals of Interpersonal Communication  3
Select one of the following:  3
ENG-1010  College Composition I
ENG-101H  Honors College Composition I
Select one of the following:  3
PSY-1010  General Psychology
PSY-101H  Honors General Psychology

Second Semester
BIO-1050  Human Biology  3
BIO-105L  Human Biology Laboratory  1
ECED-1301  Language and Literacy in an Integrated Curriculum  3
ECED-1311  Art and Creative Expression in an Integrated Curriculum  3
EDUC-1011  Introduction to Education  3
Select one of the following:  3
ENG-1020  College Composition II
ENG-102H  Honors College Composition II

Summer Session
ECED-2300  Child Behavior and Guidance  3
EDUC-2050  Human Diversity in Education  3

Third Semester
ECED-1321  Math and Science Inquiry in an Integrated Curriculum  3
ECED-1331  Music and Movement in an Integrated Curriculum  3
EDUC-1411  Individuals with Exceptionalities  3
ECED-1860  Experience with Young Children in Early Childhood Settings  3
ECED-2500  Infant/Toddler Development, Relationships, and Programs  3

Fourth Semester
ECED-2401  Families, Communities, Schools  3
ECED-2870  Early Childhood Education Student Teaching Practicum  2
ECED-2990  Early Childhood Education Student Teaching Seminar  3
PSY-2110  Educational Psychology  3

Program Admission Requirements
- Program Application is required. Contact Program Manager-Teacher Education at 216-987-2513.
- High School Diploma/GED.
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with grade of "C" or higher.
- Complete ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs with grade of "C" or higher.
- 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].
• Applicants must complete BCI background check before enrolling in ECED-1400 Administration and Leadership in Early Childhood.

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. Advise 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 (OCCRA) for the Ohio Administrator Credential.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECED-1010</td>
<td>Introduction to Early Childhood Education: Children's Development and Programs</td>
<td>4</td>
</tr>
<tr>
<td><strong>Select one of the following:</strong></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></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></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></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>ECED-2401</td>
<td>Families, Communities, Schools</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/early-childhood-education/child-development-short-term-certificate.html)

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 (http://catalog.tri-c.edu/pathways/humanities-liberal-arts-social-behavioral-sciences/early-childhood-education) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Child_Development/Gedt.html)

Program Admission Requirements
• High School Diploma/GED
• Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
• Complete ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs with grade “C” or higher

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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECED-1010</td>
<td>Introduction to Early Childhood Education: Children's Development and Programs</td>
<td>4</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></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECED-1301</td>
<td>Language and Literacy in an Integrated Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2300</td>
<td>Child Behavior and Guidance</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECED-1860</td>
<td>Experience with Young Children in Early Childhood Settings</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2401</td>
<td>Families, Communities, Schools</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2600</td>
<td>CDA Professional Portfolio</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>20</td>
</tr>
</tbody>
</table>

ECED-1010 Introduction to Early Childhood Education: Children’s Development and Programs can be taken concurrently.

**Related Degrees and Certificates**

- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 356)
- Electronic Engineering Technician, Certificate of Proficiency (p. 202)

**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.

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 (http://www.tri-c.edu/programs/engineering-technology/electrical-electronic-engineering-technology.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology) about how certificate credits apply to the related degree.

**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
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>Course</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>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>
<td>2</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</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><strong>Credit Hours</strong></td>
<td>14</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<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>
<tr>
<td>One of the following:</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td></td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td></td>
</tr>
<tr>
<td>One of the following:</td>
<td>3</td>
<td></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>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2111</td>
<td>Industrial Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EET-2242</td>
<td>C and ASM Programming with Embedded Applications</td>
<td></td>
</tr>
<tr>
<td>One of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td></td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2220</td>
<td>Electronics II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2290</td>
<td>Electrical Design Project</td>
<td>2</td>
</tr>
<tr>
<td>EET-2500</td>
<td>Instrumentation and Control</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>2-3</td>
<td></td>
</tr>
<tr>
<td>EET-2520</td>
<td>Programmable Logic Controllers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET-xxxx</td>
<td>EET Elective Course</td>
<td>17-18</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>62-63</td>
<td></td>
</tr>
</tbody>
</table>

1. MATH-1580 Precalculus and MATH-1610 Calculus I or higher will be accepted in place of MATH-1530 College Algebra and 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-2530</td>
<td>Unmanned Aerial Vehicles</td>
<td>3</td>
</tr>
</tbody>
</table>

### 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 (http://www.tri-c.edu/programs/engineering-technology/electronic-engineering-technician-certificate.html)

**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 (http://www.tri-c.edu/about/disclosure/Electronic_Engineering_Technology/Gedt.html)
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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<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>
<td>2</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1010 College Composition I
- ENG-101H Honors College Composition I

Credit Hours: 14

Second Semester |                                             |              |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></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>
</tr>
</tbody>
</table>

Select one of the following:

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

Select one of the following:

- PHIL-2020 Ethics
- PHIL-202H Honors Ethics

Select one of the following:

- MATH-1530 College Algebra
- MATH-153H Honors College Algebra

Credit Hours: 16

Total Credit Hours: 30

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 (http://www.tri-c.edu/programs/engineering-technology/bio-medical-engineering-technology.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology) 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. 207)
- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 201)
- Electronic Engineering Technician, Certificate of Proficiency (p. 202)

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>Course</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>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>MET-1100</td>
<td>Technology Orientation</td>
<td>2</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</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><strong>Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>EET-1210</td>
<td>AC Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EET-1241</td>
<td>Digital Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>4</td>
</tr>
<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>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2111</td>
<td>Industrial Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EET-2400</td>
<td>Biomedical Instrumentation I</td>
<td>3</td>
</tr>
<tr>
<td>One of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td></td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2220</td>
<td>Electronics II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2410</td>
<td>Biomedical Instrumentation II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2490</td>
<td>Biomedical Design Project</td>
<td>2</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 (http://www.tri-c.edu/programs/information-technology/networking/computer-networking-hardware.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology-computer-networking-hardware) 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. 237)
- Cisco, Short-Term Certificate (p. 205)
- Computer Maintenance Technology, Certificate of Proficiency (p. 206)

**Related Training and Credentials**
- Cisco Technical Training Institute (p. 335)
- CompTIA Certified Computer Support Specialist (p. 339)

**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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<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>3</td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Course</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>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>ITNT-2300</td>
<td>Networking Fundamentals</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-1050</td>
<td>Professional Success Strategy</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>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</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>

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<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>ENG-2151</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 52)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>Natural and Physical Sciences requirement (lecture) (p. 55)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 62

1 Consecutive eight week course.

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 (http://www.tri-c.edu/programs/information-technology/networking/cisco-short-term-certificate.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology-computer-networking-hardware) and here (http://catalog.tri-c.edu/pathways/information-technology/networking-software) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Cisco/Gedt.html)

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td>IT-1025 Information Technology Concepts for Programmers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITNT-2300 Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITNT-2310 TCP/IP</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>First Semester</td>
<td>EET-1302 Cisco I: Basic Networking Technologies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EET-1312 Cisco II Basic Routing and Switching 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>Second Semester</td>
<td>EET-2302 Cisco III Intermediate Routing and Switching 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EET-2312 Cisco IV Basic Wan Technologies</td>
<td>3</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>21</strong></td>
</tr>
</tbody>
</table>

1 Consecutive eight week courses

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 (http://www.tri-c.edu/programs/information-technology/networking/computer-maintenance-technology)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology-computer-networking-hardware) and here (http://catalog.tri-c.edu/pathways/information-technology/networking-software) about how certificate credits apply to the related degree.
Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Computer_Maintenance_Technology/Gedt.html)

**Program Admission Requirements**
- High School Diploma/GED
- Complete IT-1010 Introduction to Microcomputer Applications or IT-101H Honors Introduction to Microcomputer 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td><strong>Summer Start</strong></td>
<td>EET-1015</td>
<td>Introduction to Computer Maintenance and Repair</td>
</tr>
<tr>
<td></td>
<td>IT-1025</td>
<td>Information Technology Concepts for Programmers</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td>EET-1035</td>
<td>Operating Systems and Software for PC Technicians</td>
</tr>
<tr>
<td></td>
<td>EET-1055</td>
<td>Computer Hardware Support</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

Select one of the following:
- ENG-1010 College Composition I
- ENG-101H Honors College Composition I
- ITNT-2300 Networking Fundamentals

**Second Semester**
- BADM-1050 Professional Success Strategy | 3
- ITNT-2310 TCP/IP | 3
- ITNT-2320 Network Administration I | 3
- MATH-1xxx 1000-level MATH course or higher (p. 52) | 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>35</td>
</tr>
</tbody>
</table>

1 Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.

**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 EET-2180 EET Applied Calculus).

**Program contact:** Learn more (http://www.tri-c.edu/programs/engineering-technology/digital-communications.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/electrical-electronic-engineering-technology) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**
- Electrical/Electronic Engineering Technology, Associate of Applied Science (p. 201)
- Electrical/Electronic Engineering Technology with a Concentration in Bio-Medical Engineering, Associate of Applied Science (p. 203)
- Electronic Engineering Technician, Certificate of Proficiency (p. 202)

**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**

<table>
<thead>
<tr>
<th>Course</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>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>
<td>2</td>
</tr>
<tr>
<td>MET-1100</td>
<td>Technology Orientation</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>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></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><strong>Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2120</td>
<td>Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EET-2131</td>
<td>Digital Communication Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>EET-2170</td>
<td>Signal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EET-2242</td>
<td>C and ASM Programming with Embedded Applications</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-2220</td>
<td>Electronics II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2231</td>
<td>Wired &amp; Wireless Communication</td>
<td>3</td>
</tr>
<tr>
<td>EET-2591</td>
<td>Communications Design Project</td>
<td>2</td>
</tr>
<tr>
<td>ITNT-2310</td>
<td>TCP/IP</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>64</td>
</tr>
</tbody>
</table>

**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 (http://www.tri-c.edu/programs/health-careers/electroneurodiagnostic-technology)
Related Degrees and Certificate Programs

- Polysomnography (Sleep Disorders), Certificate of Proficiency (p. 307)

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I or ENG-1020 College Composition II with "C" or higher.
- Complete the following: BIO-1100 Introduction to Biological Chemistry; or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry; and BIO-2331 Anatomy and Physiology I ("C" grade or higher in each). It is recommended that BIO-2341 Anatomy and Physiology II be completed prior to entering the program.
- Complete MATH-1240 Contemporary Mathematics or higher. MATH-1820 Independent Study/Research in Mathematics/MATH-2820 Independent Advanced Study/Research in Mathematics may not be used to meet this requirement.
- GPA required: 2.0 admissions/core courses requirements, 2.5. overall.
- Other Information
- 16 students accepted per year.
- Applicants who are non-native speakers of English are required to have completed the Test of English as a Foreign Language (TOEFL) with a minimum internet based test (iBT) score of 24 in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program’s professional technical standards for written and verbal communication skills.

Preparation for the test is highly recommended. Cuyahoga Community College offers a preparation course for the TOEFL. Preparation for, scheduling of and costs incurred for the TOEFL are the sole responsibility of the student. Visit www.ets.org (http://www.ets.org) for more information about the test. This test must be taken even if you have become an American citizen. Students should consider taking the following coursework to assist them in attaining the minimal scores: ESL-1331 English as a Second Language: Speaking and Listening III and ESL-1480 TOEFL Preparation. For more information about English as a Second Language offerings at Cuyahoga Community College, visit http://www.tri-c.edu/programs/liberalarts/esl/Pages/default.aspx
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) required.
- Clinical observation visit 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. Contact Mike Cassida at 216-987-5654.
- 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

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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>END-1300</td>
<td>Introduction to Electroneurodiagnostic</td>
<td>2</td>
</tr>
<tr>
<td>END-1350</td>
<td>Introduction to Electroencephalography (EEG)</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>END-1450</td>
<td>Intermediate Electroencephalography (EEG)</td>
<td>3</td>
</tr>
<tr>
<td>END-1500</td>
<td>Basic Evoked Potentials</td>
<td>3</td>
</tr>
<tr>
<td>END-1910</td>
<td>END Directed Practice I</td>
<td>4</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>4</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>END-2400</td>
<td>Intraoperative Monitoring for Electroneurodiagnostic Technologists</td>
<td>2</td>
</tr>
<tr>
<td>END-2450</td>
<td>Neonatal/Pediatric Electroneurodiagnostic</td>
<td>3</td>
</tr>
<tr>
<td>END-2911</td>
<td>END Directed Practice II</td>
<td>2</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>END-2300</td>
<td>Nerve Conduction Studies</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>END-2411</td>
<td>Neurophysiology of Electroencephalography/Sleep Disorders</td>
<td>4</td>
</tr>
<tr>
<td>END-2930</td>
<td>END Directed Practice IV</td>
<td>2</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Science requirement (p. S2)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>END-2920</td>
<td>END Directed Practice III</td>
<td>4</td>
</tr>
<tr>
<td>END-2990</td>
<td>Electroneurodiagnostic Capstone</td>
<td>1</td>
</tr>
<tr>
<td>Communication requirement (p. 49)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following: 3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>END-2320</td>
<td>Intermediate Nerve Conduction Studies</td>
<td></td>
</tr>
<tr>
<td>END-2350</td>
<td>Fundamentals of Polysomnography</td>
<td>5</td>
</tr>
</tbody>
</table>

**Credit Hours**

3-4

**Total Credit Hours**

14

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. **BIO-233A** and **BIO-233B** may be taken in place of **BIO-2331** Anatomy and Physiology I.

3. **BIO-234A** and **BIO-234B** may be taken in place of **BIO-2341** Anatomy and Physiology II.

4. **END-1440** Neurophysiology of Sleep will be accepted in place of **END-2411** Neurophysiology of Electroencephalography/Sleep Disorders.

5. **END-1410** Beginning Polysomnography, **END-1421** Intermediate Polysomnography I, **END-142L** Intermediate Polysomnography I - Lab, & **END-1430** Intermediate Polysomnography II together will be accepted in place of **END-2350** Fundamentals of Polysomnography.

6. **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.

**Related Degrees and Certificates**

- Fire - Emergency Medical Services, Associate of Applied Science (p. 212)
- Emergency Medical Technician-Basic, Short-Term Certificate (p. 214)
- Paramedic, Certificate of Proficiency (p. 215)

**Related Training and Credentials**

- Advanced EMS Training (p. 351)

**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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>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>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>14</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</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>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>Credit Hours</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2330</td>
<td>Paramedic Theory I (^4)</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>Paramedic Theory III (^4)</td>
<td>6</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></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>
<tr>
<td>Credit Hours</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2340</td>
<td>Paramedic Theory II (^4)</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2360</td>
<td>Paramedic Theory IV (^4)</td>
<td>6</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<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></td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2370</td>
<td>Paramedic Theory V</td>
<td>5</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>65</td>
</tr>
</tbody>
</table>

---

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.

Electives

EMT department strongly recommends students take EMT-1330 Defensive Driving - EMT, in addition to required coursework. This course is not required to complete the degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMT-1330</td>
<td>Defensive Driving - EMT</td>
<td>1</td>
</tr>
</tbody>
</table>

---

Additional Recommended Elective

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>
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 provided 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 (http://www.tri-c.edu/programs/health-careers/emergency-medical-technology/fire-emergency-medical-services.html) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Fire Technology, Associate of Applied Science (p. 218)
- Emergency Medical Technology, Associate of Applied Science (p. 210)
- Emergency Medical Technician-Basic, Short-Term Certificate (p. 214)
- Paramedic, Certificate of Proficiency (p. 215)

Related Training and Credentials
- Fire Training Academy (p. 356)
- Advanced Fire Training (p. 476)

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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-2370</td>
<td>Paramedic Theory V</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 or 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

<table>
<thead>
<tr>
<th>Course</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>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</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Safety and Survival</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-1500</td>
<td>Fire Behavior and Combustion</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-2321</td>
<td>Fire Protection Systems</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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>EMT-1401</td>
<td>Anatomy &amp; Physiology for Paramedics</td>
<td>4</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>14</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2330</td>
<td>Paramedic Theory I ²</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>Paramedic Theory III ²</td>
<td>6</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2340</td>
<td>Paramedic Theory II ²</td>
<td>6</td>
</tr>
<tr>
<td>EMT-2360</td>
<td>Paramedic Theory IV ²</td>
<td>6</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>15</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-2370</td>
<td>Paramedic Theory V</td>
<td>5</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></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></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>UST-1010</td>
<td>Introduction to Urban Studies</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>65</strong></td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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 (http://www.tri-c.edu/programs/health-careers/emergency-medical-technology/emt-basic-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/emergency-medical-technology) and here (http://catalog.tri-c.edu/pathways/health-careers/fire-emergency-medical-services) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/gainful-employment.html)

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT-1302</td>
<td>Emergency Medical Technician - Basic ¹</td>
<td>6</td>
</tr>
<tr>
<td>EMT-130L</td>
<td>EMT Basic Practical Lab</td>
<td>1</td>
</tr>
</tbody>
</table>
EMT-1401 Anatomy & Physiology for Paramedics 2 4

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Total Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</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.

### 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) must be completed through a program approved source prior to participation in clinical or field experiences.

**Program contact:** Learn more (http://www.tri-c.edu/programs/health-careers/emergency-medical-technology/paramedic-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/emergency-medical-technology) and here (http://catalog.tri-c.edu/pathways/health-careers/fire-emergency-medical-services) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Paramedic/Gedt.html)

### 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.

- Certain clinical sites require drug screen.
- 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.
- 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-1401 Anatomy &amp; Physiology for Paramedics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-2330 Paramedic Theory I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMT-2350 Paramedic Theory III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-2340 Paramedic Theory II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMT-2360 Paramedic Theory IV</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Summer Completion</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMT-2370 Paramedic Theory V</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**

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.

---

**Environmental, Health and Safety Technology, Associate of Applied Science**

This program prepares students for a variety of careers in the environmental, health and safety technology (EHST) field. Students who enjoy working outdoors can choose the Environmental Field Technology option, which emphasizes skills in air monitoring, water, ground water and soil sampling; chemical emergency response actions; and generally evaluating and cleaning up environmental contamination. The EHST Management option focuses on skills for compliance with Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and Department of Transportation (DOT) regulations, whether in private industry, government or the consulting field. Interested students must complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.

**Program contact:** Learn more (http://www.tri-c.edu/programs/health-careers/environmental-health-and-safety-technology)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/environmental-health-safety-technology) about how certificate credits apply to the related degree.

**Related Training and Credentials**

- Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 341)

**Program Admission Requirements**

- Interested students are required to complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.
- 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.

**Other Information**

- Interview with Program Manager strongly recommended.

**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 interpret environmental, health and safety laws and regulations.
4. Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
5. Evaluate, select, and apply environmental health and safety technologies and software applications.
6. Articulate the value of a safe workplace and environmental stewardship.
7. Effectively and efficiently transfer environmental, health and safety knowledge.
8. Understand and demonstrate ethical behavior in environmental health and safety.

**Note:** Select option (a) or (b) before beginning this program.
**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Course Code</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>EHST-1301</td>
<td>Introduction to Environmental Technology</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p.)</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHST-1310</td>
<td>Introduction to Environmental Law</td>
<td>4</td>
</tr>
<tr>
<td>EHST-1350</td>
<td>Health and Safety in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1050</td>
<td>Human Biology and Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>&amp; BIO-105L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1060</td>
<td>Environment, Ecology, and Evolution Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>&amp; BIO-106L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM-101H</td>
<td>Honors Introduction to Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHST-2341</td>
<td>Hazardous Material Transportation</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2361</td>
<td>Environmental Sampling and Analysis</td>
<td>4</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 52)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHST-2220</td>
<td>EH&amp;S Management Systems (Option A)</td>
<td>2</td>
</tr>
<tr>
<td>EHST-1330</td>
<td>Hazardous Waste Operations and Emergency Response (Option B)</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHST-2351</td>
<td>Emergency Planning and Response (Option A)</td>
<td>2</td>
</tr>
<tr>
<td>&amp; EHST-2380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESCI-1410</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>&amp; ESCI-141L</td>
<td>Lab in Physical Geology (Option B)</td>
<td>1</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
<td>3</td>
</tr>
<tr>
<td>EHST-2940</td>
<td>Field Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

---

**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-2220</td>
<td>EH&amp;S Management Systems</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2351</td>
<td>Emergency Planning and Response</td>
<td>2</td>
</tr>
<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
<tr>
<td>Additional program courses</td>
<td></td>
<td>53-54</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>62-63</td>
</tr>
</tbody>
</table>

(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>EHST-2xxx</td>
<td>EHST Elective course</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 (Option B)</td>
<td>1</td>
</tr>
<tr>
<td>Additional program courses</td>
<td></td>
<td>53-54</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>61-62</td>
</tr>
</tbody>
</table>

---

1. BIO-1050 Human Biology/BIO-105L Human Biology Laboratory recommended for students in Option A.
2. BIO-1060 Environment, Ecology, and Evolution/BIO-106L Environment, Ecology, & Evolution Laboratory recommended for students in Option B.
3. Any higher level CHEM course will be accepted in place of CHEM-1010 Introduction to Inorganic Chemistry requirement except Special Topics courses (1800-1819; 2800-2819) & CHEM-1820 Independent Study/Research in Chemistry/CHEM-2820 Independent Advanced Study/Research in Chemistry.
4. EHST elective course must have written departmental approval before registering for course.
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 EH&S regulatory compliance and EH&S management. It is intended for those currently working in the EH&S field seeking to enhance and broaden their knowledge, or those working in other fields desiring coursework to help change or modify their careers. Students must already possess a college degree (associate or higher), although the degree may be in any subject area. Students entering the program must complete a program application and are encouraged to consult with the Program Manager to develop a course completion plan compatible with the student’s professional goals and program completion timeframe. Degree: Students may apply course credits toward the Environmental, Health and Safety Technology Associate degree.


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 (http://catalog.tri-c.edu/pathways/health-careers/environmental-health-safety-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Environmental_Health_and_Safety/Gedt.html)

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 of a safe workplace and environmental stewardship.

8. Effectively and efficiently transfer environmental, health and safety knowledge.

9. Understand and demonstrate ethical behavior in environmental health and safety.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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-1350</td>
<td>Health and Safety in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course 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>
</tbody>
</table>

**Credit Hours**

16

<table>
<thead>
<tr>
<th><strong>Second Semester</strong></th>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHST-2220</td>
<td>EH&amp;S Management Systems</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>EHST-2341</td>
<td>Hazardous Material Transportation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>EHST-2351</td>
<td>Emergency Planning and Response</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>EHST-2380</td>
<td>Risk Assessment</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>EHST-2390</td>
<td>Solid and Hazardous Waste Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EHST-2991</td>
<td>Professional Practice</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Hours**

14

Total Credit Hours

30

Fire Technology, Associate of Applied Science

This curriculum offers a balanced and broad education to students who plan to enter fire service as a career. It also helps active firefighters
upgrade themselves for advancement within the service. Included are such specialized areas of instruction as fire prevention, investigation, protection systems and municipal public relations.

Students who successfully complete the Tri-C Fire Training Academy will receive credit for the following courses towards this program:

<table>
<thead>
<tr>
<th>Code</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</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-1500</td>
<td>Fire Behavior and Combustion</td>
<td>2</td>
</tr>
<tr>
<td>FIRE-2321</td>
<td>Fire Protection Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

Students who have State Certification in Firefighting can apply for comparable credit.

**Program contact:** Learn more (http://www.tri-c.edu/programs/fire)

Learn more here (http://catalog.tri-c.edu/pathways/health-careers/fire-emergency-medical-services) and here (http://catalog.tri-c.edu/pathways/public-safety/fire-technology/#text) about how Fire Academy credits apply to the related degrees.

**Related Training and Credentials**

- Fire Training Academy (p. 356)

**Program Admissions Requirements**

- Successful completion of Fire Academy and appropriate state certification.

**Other Information**

- MATH-0955 or appropriate Math placement score is required to enroll in CHEM-1010.
- Students who have State Certification in Firefighting can apply for prior learning assessment.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize and apply principles and practices of leadership and management in all aspects of departmental operations.
2. Exhibit professional conduct that follows department, city, state and federal regulations, and promote sound physical, psychological, spiritual health and safety at all times.
3. Communicate/educate verbally and in writing using appropriate technology with diverse colleagues, public administration and the community to provide direction and information about an event that meets the goals/objectives of the organization.
4. Work with coworkers, internal and external agencies, and the community to resolve conflicts that achieve a common goal while respecting diverse beliefs and opinions.
5. Apply knowledge of patient assessment and treatment to manage response personnel and be able to assess and treat medical emergencies within scope of practice.
6. Respond to an event, evaluate the situation, and implement appropriate strategies and tactics to save lives, protect property and the environment, and mitigate the hazards in a safe and efficient manner.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EMT-1320 Heavy Rescue</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMT-1330 Defensive Driving - EMT</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>FIRE-1100 Principles of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>FIRE-1200 Principles of Fire and Emergency Services</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>FIRE-1500 Fire Behavior and Combustion</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>FIRE-2321 Fire Protection Systems</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours: 13

| Second Semester | Fire Prevention | 3            |
|                | Building Construction for Fire Protection | 3            |
|                | Fire Protection Hydraulics and Water Supply | 3            |
| MATH-1xxx (p. 52) | 1000-level MATH course or higher | 3            |
| Select one of the following: | 4            |
| CHEM-1010 | Introduction to Inorganic Chemistry      |              |
| CHEM-101H | Honors Introduction to Inorganic Chemistry |              |
| Select one of the following: | 3            |
| ENG-1010 | College Composition I                     |              |
| ENG-101H | Honors College Composition I               |              |

Credit Hours: 19

| Third Semester | 3            |
| Select one of the following: |            |
| ENG-1020 | College Composition II                    |              |
| ENG-102H | Honors College Composition II             |              |
| FIRE-1300 | Fire Tactics and Strategy                 | 3            |
| FIRE-1400 | Chemistry of Hazardous Materials          | 2            |
| Select one of the following: | 3            |
| IT-1010 | Introduction to Microcomputer Applications |          |
| IT-101H | Honors Introduction to Microcomputer Applications |          |
| Select one of the following: | 3            |
| POL-1010 | American National Government              |              |
| POL-101H | Honors American National Government       |              |

Credit Hours: 14

| Fourth Semester | 3            |
| FIRE-2600 | Fire Investigation Methods                |              |
| FIRE-2720 | Fire Service Training and Public Relations | 2            |
| FIRE-2730 | Managing Fire Services                    | 3            |

Credit Hours: 14
The Health Information Management Technology (HIM) program prepares graduates who can identify and use a variety of health information resources and technologies to accomplish the objectives of diverse practice environments. In general, these individuals may perform tasks related to the use, analysis, validation, presentation, abstracting, coding, storage, security, retrieval, quality measurement and control of health care data. Their task responsibility may also include supervision of personnel. The program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The goal of the Health Information Management Technology Program is to provide an educational experience within the framework of professional standards. Graduates of the program may be eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Upon passing the examination, an individual is permitted to use the credential RHIT behind his/her last name. Earning a credential validates your competence as an HIM professional to employers and the public.

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/health-information-management)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/health-information-management-technology) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Cancer Registrar, Post-Degree Professional Certificate (p. 221)

Related Training and Credentials
• Comprehensive Certified Professional Medical Coder (CPC (p. 337))
• Comprehensive Professional Medical Coding Curriculum – Online (p. 338)
• State-Tested Nurse Aide (p. 349)
• State-Tested Nurse Aide – Accelerated Program (p. 349)
• Community Health Worker (p. 337)
• Patient Access Specialist (p. 346)
• Patient-Care Nursing Assistant (p. 346)

Program Admission Requirements
Students must request an application packet from the health Careers Enrollment Center 216-987-4247 for comprehensive admissions and program information:

• 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-1010 Introduction to Microcomputer 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 must demonstrate competence in verbal, written and oral communication skills.
Applicants whose native language is not English and test into the ESL series must take the TOEFL exam at www.toefl.org (http://www.toefl.org) and score at least a 21 in Reading and Listening, a 23 in Writing, and a 25 in Speaking.

Other Information
• 30 students accepted per year.
• Core courses may only be repeated once to improve a grade.
• 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.
• Coding courses expire after one year.
• 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.
• Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) required.

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>Course</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>
<td></td>
</tr>
<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>HIM-1301</td>
<td>Introduction to Health Information Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HIM-1311</td>
<td>Legal Aspects of Health Care</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HIM-1401</td>
<td>Systems in Healthcare Delivery</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Second Semester</td>
<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>
<td></td>
</tr>
<tr>
<td>HIM-1423</td>
<td>Health Data Documentation, Sources and Classification Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
</tbody>
</table>

**Summer Session**

<table>
<thead>
<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-2430</td>
<td>Medcin Reimbursement Methodologies</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</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>HIM-2410</td>
<td>Management Practices in Health Information</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</td>
</tr>
</tbody>
</table>

**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-2440</td>
<td>Fundamentals of Healthcare Workflow and Process Analysis</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2851</td>
<td>Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>PSY-1010</td>
<td>General Psychology</td>
</tr>
<tr>
<td></td>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Credit Hours</td>
</tr>
</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.

**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 health care 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.

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 (http://www.tri-c.edu/programs/health-careers/health-information-management/cancer-registrar-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/cancer-registrar) and here (http://catalog.tri-c.edu/pathways/health-careers/health-information-management-technology) about how certificate credits apply to the related degree.

Related Degrees and Certificates
• Health Information Management Technology, Associate of Applied Science (p. 220)

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:

<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 (with &quot;B&quot; grade or higher)</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II (with &quot;B&quot; grade or higher)</td>
<td>4</td>
</tr>
<tr>
<td>BIO-2600</td>
<td>Pathophysiology (with &quot;B&quot; grade or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>2-5</td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology (with &quot;B&quot; grade or higher)</td>
<td></td>
</tr>
<tr>
<td>&amp; MA-2010</td>
<td>Medical Terminology I and Medical Terminology II (with &quot;B&quot; grade or higher)</td>
<td></td>
</tr>
</tbody>
</table>

• ENG-1010 College Composition I or higher
• Math-1000 level 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.

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 healthcare 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. Apply knowledge of industry recognized data fields to effectively utilize cancer registry software.
8. Effectively utilize virtual meeting software in a professional manner.
9. Differentiate between the various roles and reporting structures, while prioritizing tasks according to immediate needs.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>8</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<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></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>Summer Completion</td>
<td></td>
<td></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>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>22</td>
</tr>
</tbody>
</table>
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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/health-information-management/health-unit-coordinator-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/health-information-management/technology) 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-1010 Introduction to Microcomputer 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Summer Start</strong></td>
<td></td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>First Semester</strong></td>
<td>11</td>
</tr>
<tr>
<td>HIM-1060</td>
<td>Health Unit Coordinator</td>
<td>3</td>
</tr>
<tr>
<td>MA-2010</td>
<td>Medical Terminology II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</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></td>
<td>Select one of the following:</td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>14</td>
</tr>
</tbody>
</table>

In order to be awarded this certificate, a grade of “C” or higher must be earned in all required courses.
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 (http://www.tri-c.edu/programs/health-careers/health-information-management/medical-billing-specialist-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/health-information-management-technology) about how certificate credits apply to the related degree and about related training programs.

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>Course</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>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. 52)</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td>12</td>
</tr>
<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>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/hospitality-management/culinary-arts)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-culinary-art-management) about how certificate credits apply to the related degree and about other related programs.

Related Degrees and Certificates

- Hospitality Management (Lodging-Tourism Management), Associate of Applied Business (p. 228)
- Hospitality Management (Restaurant/Food Service Management), Associate of Applied Business (p. 231)
- Event Planning, Short-Term Certificate (p. 230)
- Food and Beverage Operations, Certificate of Proficiency (p. 232)
- Lodging Rooms Division, Certificate of Proficiency (p. 230)
- Professional Chef, Certificate of Proficiency (p. 226)
- Professional Baking, Certificate of Proficiency (p. 227)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 228)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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></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>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours 15
Select one of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>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: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>15</th>
</tr>
</thead>
</table>

Summer Session

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 44)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>4</th>
</tr>
</thead>
</table>

Third Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</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-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-2330</td>
<td>Menus and Facilities Planning &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2350</td>
<td>Restaurant Operations</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2560</td>
<td>Garde Manger</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>15</th>
</tr>
</thead>
</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2552</td>
<td>Banquet Management and Production</td>
<td>4</td>
</tr>
<tr>
<td>HOSP-2992</td>
<td>Culinary Evaluation and American Regional Cuisine</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-xxxx</td>
<td>HOSP elective course</td>
<td>2-3</td>
</tr>
<tr>
<td>Arts and Humanities/Social and Behavioral Science requirements (p. 45)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>14-15</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total Credit Hours</th>
<th>63-64</th>
</tr>
</thead>
</table>

**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 (http://www.tri-c.edu/programs/hospitality-management/culinary-arts/certificate-personal-chef.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-culinary-art-management) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Personal_Chef/Gedt.html)

**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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
</tbody>
</table>

**Personal Chef, Certificate of Proficiency**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</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>
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 (http://www.tri-c.edu/programs/hospitality-management/culinary-arts/certificate-professional-baking.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-culinary-art-management), here (http://catalog.tri-c.edu/pathways/hospitality/restaurant-food-service-management), and here (http://catalog.tri-c.edu/pathways/hospitality/lodging-tourism-management) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Professional_Baking/Gedt.html)

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

<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>
<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>15</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>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 44)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Professional_Baking/Gedt.html)
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 (http://www.tri-c.edu/programs/hospitality-management/culinary-arts/certificate-professional-culinarian-cook.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-culinary-art-management), here (http://catalog.tri-c.edu/pathways/higher/food-service-management), and here (http://catalog.tri-c.edu/pathways/hospitality/lodging-tourism-management) about how certificate credits apply to the related degrees.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Professional_Culinarian/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOSP-1031</td>
<td>Fundamentals of Culinary Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HOSP-1552</td>
<td>Introduction to Baking &amp; Pastries</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HOSP-1040</td>
<td>Customer Service</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HOSP-2500</td>
<td>Hospitality Cost Control</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HOSP-2700</td>
<td>Hospitality Purchasing</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Summer Completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HOSP-1940</td>
<td>Culinary Arts/Professional Baking Field Experience</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p. 44)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

Hospitality Management with a Concentration in Lodging-Tourism 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 (http://www.tri-c.edu/programs/hospitality-management/lodging-and-tourism)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-lodging-tourism-management) 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. 231)
- Hospitality Management (Culinary Art), Associate of Applied Business (p. 225)
- Event Planning, Short-Term Certificate (p. 230)
- Food and Beverage Operations, Certificate of Proficiency (p. 232)
- Lodging Rooms Division, Certificate of Proficiency (p. 230)
- Personal Chef, Certificate of Proficiency (p. 226)
- Professional Baking, Certificate of Proficiency (p. 227)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 228)

### Training and Credentials
- Event Planning (p. 340)

### 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>3</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>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Semester</td>
<td>15</td>
<td></td>
</tr>
<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. 45)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></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>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Session</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>HOSP-1960</td>
<td>Lodging/Tourism Field Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Semester</td>
<td>14</td>
<td></td>
</tr>
<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>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</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>Fourth Semester</td>
<td>15</td>
<td></td>
</tr>
<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>

Social and Behavioral Science requirements (p. 47) 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/hospitality-management/lodging-and-tourism/event-planning-certificate.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-lodging-tourism-management) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Event_Planning/Gedt.html)

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.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
<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>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 14-16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSP-2180</td>
<td>Event Planning Workshop</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2380</td>
<td>Hospitality Marketing and Sales</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2400</td>
<td>Hospitality Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>xxxx ¹</td>
<td>Elective Requirements</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours 13

Total Credit Hours 27-29

¹ Must complete two courses to meet elective requirements.

Electives
(Select two courses from the following)

<table>
<thead>
<tr>
<th>Code</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>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>BT-2040</td>
<td>Emerging Workplace Technology</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1020</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-2480</td>
<td>Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2330</td>
<td>Menus and Facilities Planning &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-2580</td>
<td>Convention Management and Meeting Planning</td>
<td>2</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

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 jobs.
software. Upon successfully completing the courses, students will be awarded a Rooms Division Certification of Specialization from the American Hotel and Motel Association. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Program contact: Learn more (http://www.tri-c.edu/programs/hospitality-management/lodging-and-tourism/certificate-lodging-rooms-division.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-lodging-tourism-management) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Lodging_Rooms_Division/Gedt.html)

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. Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
4. Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.
5. 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 based on respect and joy.
6. Read and accurately interpret standard indicators of the organization’s financial health.
7. 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.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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 (p. 44)</td>
<td>1000-level MATH course or higher</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><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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-1580</td>
<td>Front Office Operations</td>
<td>2</td>
</tr>
<tr>
<td>HOSP-1960</td>
<td>Lodging/Tourism Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>HOSP-2380</td>
<td>Hospitality Marketing and Sales</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><strong>Total Credit Hours</strong></td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business

This program is accredited by both the Commission on Accreditation of Hospitality Management Programs and the Accrediting Commission of the American Culinary Federation, insuring an industry-approved quality curriculum. Students are prepared for entry-level front- and back-of-the-house supervisory positions in both restaurant and institutional food service and beverage establishments. Students are also prepared for future positions as kitchen managers, dining room managers, banquet managers, purchasing agents, food and beverage controllers and restaurant/food service managers. Curriculum includes skill training, business and management techniques, critical thinking, decision making, customer service, communication and cultural awareness skills. Practical industry related experiences are included.

Program contact: Learn more (http://www.tri-c.edu/programs/hospitality-management/restaurant-and-food-service-management)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-restaurant-food-service-management) about how certificate credits apply to the related degree.
Related Degrees and Certificates

- Hospitality Management (Lodging-Tourism Management), Associate of Applied Business (p. 228)
- Hospitality Management (Culinary Art), Associate of Applied Business (p. 225)
- Event Planning, Short-Term Certificate (p. 230)
- Food and Beverage Operations, Certificate of Proficiency (p. 232)
- Lodging Rooms Division, Certificate of Proficiency (p. 230)
- Personal Chef, Certificate of Proficiency (p. 226)
- Professional Baking, Certificate of Proficiency (p. 227)
- Professional Culinarian/Cook, Certificate of Proficiency (p. 228)

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 HR principles in regards to recruiting, retaining, and developing staff.
10. Develop team ethics and goal achievement in a relevant work environment.
11. Practice and refine decision-making skills.
12. Manage a day-to-day dining room operation using standard applied business practices such as forecasting, cost control, and marketing and promotions.
13. Demonstrate an understanding of basic culinary competencies.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1020</td>
<td>Applied Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>Contemporary Cuisine</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>62</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/hospitality-management/restaurant-and-food-service-management/food-beverage-operations-certificate.html)

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 (http://catalog.tri-c.edu/pathways/business/hospitality-restaurant-food-service-management) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Food_and_Beverage_Operations/Gedt.html)

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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 (p. 44)</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<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 Management 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>
<tr>
<td>Select one of the following:</td>
<td></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>ENG-1010</td>
<td>College Composition I</td>
<td>15</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 30

Human Services, Associate of Applied Science

Alcohol/Chemical Dependency Option

The Alcohol/Chemical Dependency Option of the Human Services program provides students the 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 to be a Chemical Dependency Counselor Assistant after taking three credit hours in Chemical dependency course work and complete 40 hours of volunteer work under a licensed supervisor. Graduates of the program receive a significant number of board recognized hours toward the Licensed Chemical Dependency Counselor II (LCDCII) requirements established by the Ohio Department of Alcohol and Drug Addiction Services, and are prepared for licensure exams for LCDC II administered by the Chemical Dependency Professionals Board.

Generalist Option

The Generalist Option of the Human Services program provides students with the competencies which enable them to work with a variety of people with 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 Ohio Counselor, Social Worker, Marriage and Family Therapy Board.

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/human-services)

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-1300 Introduction to Human Services and HS-1850 Introduction to Human Services Principles and Practices ("C" grade or higher in each).

Cuyahoga Community College Catalog 2017-2018 233
Other Information

- Human Service students must sign and abide by the Human Service Code of Conduct during the first week of enrollment in the HS-1300 Introduction to Human Services course.
- Complete BCI (background) check at least 3 months 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 may enroll in only the following courses prior to completing a BCI: HS-1101 Foundation of Substance Abuse, Addiction, and Group Work, HS-1110 Crisis Intervention and Child Abuse Issues. Log into http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html
- Student must maintain a 2.00 GPA in all HS courses.
- Requirements listed are the same for both Generalist and Alcohol/Chemical Dependency options.
- PSY-2070 Behavior Modification recommended for the Generalist Option. PSY-2080 Abnormal Psychology recommended for the Chemical Dependency Option
- 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.
- Students re-entering after a one year absence from the Human Services Program will be required to complete another BCI. Log onto BCI site listed above.
- Students must purchase Health Careers Liability Insurance from the Enrollment Center prior to enrolling in HS-1850 Introduction to Human Services Principles and Practices.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Ethics/Professionalism. Conducts oneself in a professional manner and applies sound ethical practices according to the Ohio Counselors and Social Workers and Family Therapy 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 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 communications 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>Course</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>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>
</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>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-1850</td>
<td>Introduction to Human Services Principles and Practices</td>
<td>5</td>
</tr>
<tr>
<td>PHIL-1000</td>
<td>Critical Thinking</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HS-1200</td>
<td>Treatment Modalities and Diversity Issues in Chemical Dependency (Option A)</td>
<td></td>
</tr>
<tr>
<td>HS-1110</td>
<td>Crisis Intervention and Child Abuse Issues (Option B)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HS-1210</td>
<td>Prevention and Chemical Dependency (Option A)</td>
<td></td>
</tr>
<tr>
<td>HS-1220</td>
<td>Diagnostic Tools and Legal Considerations (Option B)</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-2600</td>
<td>Systems Approach to Case Management</td>
<td>4</td>
</tr>
<tr>
<td>HS-2850</td>
<td>Human Services Principles and Practices I</td>
<td>5</td>
</tr>
<tr>
<td>HS-xxxx</td>
<td>Human Services elective</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HS-2200</td>
<td>Ethics in Chemical Dependency (Option A)</td>
<td></td>
</tr>
<tr>
<td>HS-2300</td>
<td>Family Theory and Services (Option B)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>HS-2860</td>
<td>Human Services Principles and Practices II</td>
<td>3</td>
</tr>
<tr>
<td>HS-2990</td>
<td>Human Services Capstone</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1xxx (p. 52)</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>PSY-2020</td>
<td>Life Span Development</td>
<td>4</td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
<td>16</td>
</tr>
</tbody>
</table>

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>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1200</td>
<td>Treatment Modalities and Diversity Issues in Chemical Dependency</td>
<td>4</td>
</tr>
<tr>
<td>HS-1210</td>
<td>Prevention and Chemical Dependency</td>
<td>2</td>
</tr>
<tr>
<td>HS-2200</td>
<td>Ethics in Chemical Dependency</td>
<td>3</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

(B) Generalist Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1110</td>
<td>Crisis Interventionand Child Abuse Issues</td>
<td>3</td>
</tr>
<tr>
<td>HS-1220</td>
<td>Diagnostic Tools and Legal Considerations</td>
<td>4</td>
</tr>
<tr>
<td>HS-2300</td>
<td>Family Theory and Services</td>
<td>4</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

Industrial Automation Certificate of Completion

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.

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 216-987-0272.

Upon completion students receive

WCED certificate

Related Programs/Training

- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Industrial Automation Certificate of Completion

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 contact: Learn more (http://www.tri-c.edu/programs/information-technology/programming-and-development/business-solutions-program-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/information-technology/business-solutions) 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-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

<table>
<thead>
<tr>
<th>Course</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>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-1015</td>
<td>Digital Studio Basics</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><strong>Total Credit Hours</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>IT-1150</td>
<td>Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1430</td>
<td>2D Design</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>16-17</td>
<td></td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2830</td>
<td>Cooperative Field Experience</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>IT-2351</td>
<td>Enterprise Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-2620</td>
<td>Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>12-13</td>
<td></td>
</tr>
</tbody>
</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.

### 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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/post-degree-certificate-in-business-solutions.html)

*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 (http://catalog.tri-c.edu/pathways/information-technology/business-solutions) about how certificate credits apply to the related degree.
Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/IT-Business_Solutions/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></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></td>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<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></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>IT-2620 Visual Basic .NET Programming</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT-2680 Visual C# .NET</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-2600</td>
<td>E-Business Programming Technologies</td>
<td>3</td>
</tr>
<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>23</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 (http://www.tri-c.edu/programs/information-technology/networking/networking-software-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/information-technology/networking-software) 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. 204)
- Cisco, Short-Term Certificate (p. 205)
- Computer Maintenance Technology, Certificate of Proficiency (p. 206)

Related Training and Credentials
- Cisco Technical Training Institute (p. 335)
- CompTIA Certified Computer Support Specialist (p. 339)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td></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>
</tr>
<tr>
<td>ITNT-2300</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>14</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></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>
</tr>
<tr>
<td>Arts and Humanities/Social and Behavioral Sciences requirement (p. 45)</td>
<td>3</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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td>12</td>
</tr>
</tbody>
</table>

| Third Semester|                                      |              |
| BADM-1020     | Introduction to Business             | 3            |
| ENG-2151      | Technical Writing                    | 3            |
| ITNT-2370     | Network Security Fundamentals        | 3            |
| ITNT-2380     | Linux Administration                 | 3            |
| MATH-1xxx     | 1000-level MATH course or higher    | 3            |
|                | Credit Hours                         | 15           |

| Fourth Semester|                                      |              |
| BADM-1050     | Professional Success Strategy        | 3            |
| ITNT-2990     | Networking Capstone                  | 3            |
| ITXX-2xxx     | 2000 level ITNT elective             | 1-3          |
| Natural and Physical Sciences requirement (p. 48) | 3            |
|                | Credit Hours                         | 10-12        |
|                | Total Credit Hours                   | 60-62        |

**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>

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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/net-programming.html)

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 (http://catalog.tri-c.edu/pathways/information-technology/programming-development) and here (http://catalog.tri-
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.

Course Title Credit Hours

First Semester
IT-1025 Information Technology Concepts for Programmers 3
IT-1050 Programming Logic 3
Credit Hours 6

Second Semester
IT-1150 Introduction to Web Programming 3
IT-2351 Enterprise Database Systems 4
IT-2620 Visual Basic .NET Programming 4
Credit Hours 11

Third Semester
IT-2030 ASP.NET Web Programming 4
IT-2320 Interactive Internet Programming 4
Credit Hours 8
Total Credit Hours 25

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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/programming-development-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/information-technology/programming-development) 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. 242)
• Web Application Development, Short-Term Certificate (p. 242)
• .NET Programming, Post-Degree Professional Certificate (p. 238)
• Information Technology, Programming and Development, Post-Degree Professional Certificate (p. 241)

Related Training and Credentials
• Cleveland Codes Tri-C Software Developers Academy (p. 336)

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>Course</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>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>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>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1150</td>
<td>Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT-2650</td>
<td>Java Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-2010</td>
<td>Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Summer Session**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2830</td>
<td>Cooperative Field Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>Social and Behavioral Science/Natural Science (See requirements) (p. )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-2030</td>
<td>ASP.NET Web Programming</td>
<td>4</td>
</tr>
<tr>
<td>ITXX-xxxx</td>
<td>Programming Elective</td>
<td>3-4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-202H</td>
<td>Honors Ethics</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td></td>
</tr>
</tbody>
</table>

**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>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-1100</td>
<td>Fundamentals of iOS Application Development</td>
<td>3</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-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>
<tr>
<td>IT-2813</td>
<td>Special Topics: Introduction to Big Data Analytics</td>
<td>3</td>
</tr>
</tbody>
</table>
**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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/post-degree-certificate-in-programming-and-development.html)

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 (http://catalog.tri-c.edu/pathways/information-technology/programming-development) about how certificate credits apply to the related degree and about related training programs.

**Gainful Employment Disclosure** (http://www.tri-c.edu/about/disclosure/IT-Programming_and_Development/Gedt.html)

**Program Admission Requirements**

- MATH-1240 Contemporary Mathematics or MATH-0965 Intermediate Algebra appropriate score on Math Placement Test.
- Associate degree or higher required

**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.

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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>IT-1150</td>
<td>Introduction to Web Programming</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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-2650</td>
<td>Java Programming</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-2030</td>
<td>ASP.NET Web Programming</td>
<td>4</td>
</tr>
<tr>
<td>IT-2660</td>
<td>Data Structures &amp; Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>IT-2700</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

**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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/certificate-in-mobile-application-development.html)

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 (http://catalog.tri-c.edu/pathways/information-technology/programming-development) about how certificate credits apply to the related degree and about related training programs.
Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Mobile-Application_Development/Gedt.html)

**Web Application Development, Short-Term Certificate**

**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 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**

<table>
<thead>
<tr>
<th>Course</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>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></td>
<td><strong>Credit Hours</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></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></td>
<td><strong>Credit Hours</strong></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>21</td>
</tr>
</tbody>
</table>

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 (http://www.tri-c.edu/programs/information-technology/programming-and-development/certificate-in-web-application-development.html)

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 (http://catalog.tri-c.edu/pathways/information-technology/programming-development) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/IT-Web_Application_Development/Gedt.html)

**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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></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></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>IT-2650</td>
<td>Java Programming</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-2320</td>
<td>Interactive Internet Programming</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>IT-2030</td>
<td>ASP.NET Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>IT-2600</td>
<td>E-Business Programming Technologies</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7-8</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>24-25</td>
</tr>
</tbody>
</table>

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, robotics, and process controls. 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 (http://www.tri-c.edu/programs/engineering-technology/integrated-systems-engineering-technology)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/integrated-systems-engineering-technology) and here (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/integrated-systems-engineering-technology) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Automation Maintenance Technician, Certificate of Proficiency (p. 245)
- Building Maintenance Technician, Certificate of Proficiency (p. 246)
- Mechatronics, Certificate of Proficiency (p. 247)
- Industrial Welding, Certificate of Proficiency (p. 247)
- Introductory Welding, Short-Term Certificate (p. 248)
- Welding Technology, Short-Term Certificate (p. 249)

Related Training and Credentials

- Fast-Track Welding Certificate Program (p. 355)
- Electrical Technician Certificate of Completion (p. 355)
- Facility Technician (p. 355)
- FirstEnergy Power Systems Institute PSI, Associate of Technical Study (p. 356)
- Steelworkers for the Future (p. 360)
- Industrial Automation Certificate of Completion (p. 235)
- 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 workmanlike 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>Course</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>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>
<tr>
<td>Option B:</td>
<td>ISET-1450 Heating Ventilation Air Conditioning/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigeration I (Option B)</td>
<td></td>
</tr>
<tr>
<td>Option C:</td>
<td>ISET-1100 Welding Blue Print Reading (Option C)</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>3</td>
</tr>
<tr>
<td>ENG-101H</td>
<td>Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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 Fundamentals of Fluid Power (Option A)</td>
<td></td>
</tr>
<tr>
<td>Option B:</td>
<td>ISET-1460 Fundamental Boiler Technology (Option B)</td>
<td></td>
</tr>
<tr>
<td>Option C - Select one of the following:</td>
<td></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 C)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2200</td>
<td>Industrial Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</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>PSY-1050</td>
<td>Introduction to Industrial/Organizational</td>
<td>3</td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-2300</td>
<td>Fluid Power (Option A)</td>
<td></td>
</tr>
<tr>
<td>Option B:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2450</td>
<td>Heating Ventilation Air Conditioning/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigeration II (Option B)</td>
<td></td>
</tr>
<tr>
<td>Option C - Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2110</td>
<td>Gas Tungsten Arc Welding (TIG) (Option C)</td>
<td></td>
</tr>
<tr>
<td>ISET-2130</td>
<td>OxyFuel Gas Welding (Option C)</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1050</td>
<td>Professional Success Strategy</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2210</td>
<td>Commercial Wiring</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2220</td>
<td>Fundamentals of Electronics and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2990</td>
<td>Reliability Centered Miantenance</td>
<td>3</td>
</tr>
<tr>
<td>Option A - Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2510</td>
<td>Programmable Logic Controllers Maintenance II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(Option A)</td>
<td>1</td>
</tr>
<tr>
<td>ISET-2520</td>
<td>Programmable Logic Controllers Maintenance III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(Option A)</td>
<td>1</td>
</tr>
<tr>
<td>Option B:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2460</td>
<td>Applied Boiler Technology (Option B)</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>51</td>
<td></td>
</tr>
</tbody>
</table>

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>
<tr>
<td>Additional program courses</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

(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><strong>Total Credit Hours</strong></td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
ISET-2450 Heating Ventilation Air Conditioning/Refrigeration II 2
ISET-2460 Applied Boiler Technology 2
Additional program courses 51
Total Credit Hours 60

(C) Integrated Systems Welding, Option (C)
To complete this option, students must complete ISET-1100 Welding Blue Print Reading & two of the four welding courses listed below.

Code Title Credit Hours
ISET-1100 Welding Blue Print Reading 2
Select two of the following: 8
ISET-2100 Gas Metal Arc Welding (MIG) 2
ISET-2120 Shielded Metal Arc Welding (STICK) 3
ISET-2110 Gas Tungsten Arc Welding (TIG) 2
ISET-2130 OxyFuel Gas Welding 2
Additional program courses 51
Total Credit Hours 61

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 (http://www.tri-c.edu/programs/engineering-technology/integrated-systems-engineering-technology/automation-maintenance.html)

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.

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).

Course Title Credit Hours
First Semester
ISET-1100 Welding Blue Print Reading 2
ISET-1300 Mechanical/Electrical Print Reading 1 2
ISET-1320 Fundamentals of Fluid Power 2
ISET-1410 Applied Electricity I 2 3
ISET-1420 Applied Electricity II 3
ISET-2200 Industrial Motor Controls 3
Credit Hours 15
Second Semester
ISET-2120 Shielded Metal Arc Welding (STICK) 4
ISET-2210 Commercial Wiring 3 3
ISET-2240 Applied National Electric Code 3
ISET-2500 Programmable Logic Controllers Maintenance I 4 3
ISET-2510 Programmable Logic Controllers Maintenance II 2

Learn more (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/integrated-systems-engineering-technology) about how certificate credits apply to the related degree.
ISET-2520 Programmable Logic Controllers Maintenance III 2
Credit Hours 17
Total Credit Hours 32

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.
4 ISET-2500, 2510, and 2520 are scheduled in consecutive five week sessions.

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.

Program contact: Learn more (http://www.tri-c.edu/programs/engineering-technology/integrated-systems-engineering-technology/building-maintenance.html)

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.

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).

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1300</td>
<td>Mechanical/Electrical Print Reading 1</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 2</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/Refrigeration I</td>
<td>2</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>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>ISET-1340</td>
<td>Industrial Piping and Tubing</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2210</td>
<td>Commercial Wiring 3</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2240</td>
<td>Applied National Electric Code</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>
<tr>
<td>ISET-2500</td>
<td>Programmable Logic Controllers Maintenance I 4</td>
<td>3</td>
</tr>
</tbody>
</table>

Program Admission Requirements

- MATH-0910 Basic Arithmetic and Pre-Algebra with "C" or higher.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Building_Maintenance_Technology/Gedt.html)
ISET-2510 Programmable Logic Controllers Maintenance II 2

Credit Hours 17

Total Credit Hours 35

1 ISET-1300 and 1320 are scheduled in consecutive 5 week sessions.
2 ISET-1410, 1420, and 2200 are scheduled in consecutive 5 week sessions.
3 ISET-2240 and 2210 are scheduled in consecutive 5 week sessions.
4 ISET-2500 and 2510 are scheduled in consecutive 5 week sessions.

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 (http://www.tri-c.edu/programs/engineering-technology/mechatronics.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/integrated-systems-engineering-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Mechatronics/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISET-1100</td>
<td>Welding Blue Print Reading</td>
<td>2</td>
</tr>
<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>ISET-1420</td>
<td>Applied Electricity II</td>
<td>3</td>
</tr>
<tr>
<td>EET-1100</td>
<td>Introduction to Robotics</td>
<td>2</td>
</tr>
<tr>
<td>ISET-1320</td>
<td>Fundamentals of Fluid Power</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2200</td>
<td>Industrial Motor Controls</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>

First Semester 12

Second Semester 11

Summer Completion 7

Total Credit Hours 30

1 ISET-1410 Applied Electricity I, 1st 8 week course, must be completed before ISET-1420 Applied Electricity II. Concurrent enrollment in ISET-1300 Mechanical/Electrical Print Reading.
2 ISET-2500 Programmable Logic Controllers Maintenance I, 1st 5 or 8 week course, must be completed before ISET-2510 Programmable Logic Controllers Maintenance II.

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
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 (http://www.tri-c.edu/workforce/industrial-welding/introductory-welding.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/integrated-systems-engineering-technology) and here (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/integrated-systems-engineering-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Introductory_Welding/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>ISET-1100</td>
<td>Welding Blue Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>ISET-2100</td>
<td>Gas Metal Arc Welding (MIG)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2120</td>
<td>Shielded Metal Arc Welding (STICK)</td>
<td>4</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2110</td>
<td>Gas Tungsten Arc Welding (TIG)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2130</td>
<td>OxyFuel Gas Welding</td>
<td>4</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

This program 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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/integrated-systems-engineering-technology) and here (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/integrated-systems-engineering-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Introductory_Welding/Gedt.html)

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**

<table>
<thead>
<tr>
<th>Course</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>ISET-1100</td>
<td>Welding Blue Print Reading ¹</td>
<td>2</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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>10</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2100</td>
<td>Gas Metal Arc Welding (MIG)</td>
<td>4</td>
</tr>
<tr>
<td>ISET-2130</td>
<td>OxyFuel Gas Welding</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>18</td>
</tr>
</tbody>
</table>

¹ Consecutively scheduled courses.

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.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

**Program Admission Requirements**

- High School Diploma/GED
- Completion of Introductory Welding certificate or equivalent industry certifications.
- “C” or better in ISET-1100 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**

<table>
<thead>
<tr>
<th>Course</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>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>ISET-2130</td>
<td>OxyFuel Gas Welding</td>
<td>4</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISET-2140</td>
<td>Non-Destructive Testing</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2150</td>
<td>Robotic Welding</td>
<td>3</td>
</tr>
<tr>
<td>ISET-2160</td>
<td>Structural Fabrication</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>21</td>
</tr>
</tbody>
</table>

**Interior Design, Associate of Applied Business**

The interior designer helps to solve the functional and aesthetic design problems in residential and commercial interiors. The program prepares
students for employment in interior design studios, architectural firms, and industry related fields.

Program contact: Learn more (http://www.tri-c.edu/programs/interior-design)

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 (http://catalog.tri-c.edu/pathways/business/interior-design) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1100</td>
<td>Hand Drafting and Sketching for Interiors</td>
<td>2</td>
</tr>
<tr>
<td>INTD-1111</td>
<td>Introduction to Interior Design</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>3</td>
<td></td>
</tr>
</tbody>
</table>

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2030</td>
<td>Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1120</td>
<td>Architectural Drafting for Interiors I</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2330</td>
<td>Interior Design Materials and Sources</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</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>INTD-1130</td>
<td>Architectural Drafting for Interiors II</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2320</td>
<td>History of Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2380</td>
<td>Fundamentals of Lighting</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2430</td>
<td>Architectural Materials and Methods</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>ART-1050</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART-1081</td>
<td>2D Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2300</td>
<td>Interior Design Studio I</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2471</td>
<td>Professional Practice of Interior Design</td>
<td>2</td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</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>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-2851</td>
<td>Interior Design Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></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>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 65

Interior Decorating, Certificate of Proficiency
The interior decorator assists in providing solutions for aesthetic issues (furniture, color, textiles, and fabrics) in residential interiors and events. The certificate prepares students for employment in interior design sales and decorating.

Program contact: Learn more [here](http://www.tri-c.edu/programs/interior-design/interior-decorating-certificate.html)

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](http://catalog.tri-c.edu/pathways/business/interior-design) about how certificate credits apply to the related degree.

Gainful Employment Disclosure [here](http://www.tri-c.edu/about/disclosure/Interior_Decorator/Gedt.html)

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Communicate verbally with clients, colleagues and industry professionals within the architectural and design community.
2. Identify the needs of the client and analyze what products or solutions are appropriate for their situation. Recommending appropriate selections for an interior space and closing the sale professionally and ethically.
3. Apply knowledge of office business procedures, policies, equipment, software and communication streams.
4. Implement the scope of project through professional practices and design sales protocols.
5. Apply knowledge of design and architecture history, furniture and furniture layouts, product knowledge, color, and lighting to develop creative solutions for the client.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART-2020</td>
<td>Art History Survey: Prehistoric to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1100</td>
<td>Hand Drafting and Sketching for Interiors</td>
<td>2</td>
</tr>
<tr>
<td>INTD-1111</td>
<td>Introduction to Interior Design</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART-2030</td>
<td>Art History Survey: Late Renaissance to Present</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1300</td>
<td>Color and Light in Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2330</td>
<td>Interior Design Materials and Sources</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTD-1330</td>
<td>Coordinating Spaces</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1350</td>
<td>Business of Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTD-1400</td>
<td>Interior Decorating Field Experience</td>
<td>1</td>
</tr>
<tr>
<td>INTD-2320</td>
<td>History of Interiors</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

**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 [here](http://www.tri-c.edu/programs/engineering-technology/manufacturing-engineering/manufacturing-industrial-engineering-technology.html)

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](http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**

- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 253)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 257)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 257)
- Machine Tools Operation, Certificate of Proficiency (p. 258)
- Quality Control, Certificate of Proficiency (p. 259)
• Digital Design & Product Innovation, Short-Term Certificate (p. 254)
• Digital Manufacturing and Product Launch, Short-Term Certificate (p. 255)
• CNC Machining and Composites Manufacturing, Short-Term Certificate (p. 144)

**Related Training and Credentials**

• CNC Technology Certificate Program (p. 354)
• Computer Aided Design (CAD) (p. 354)
• Right Skills Now CNC Operations Program (p. 359)
• Precision Machining Technology 3 (PMT 3) (p. 359)
• Manufacturing Technical Readiness Program (p. 357)
• Nondestructive Testing (NDT) and Quality Assurance (QA) (p. 357)
• Plexus AS9100C Understanding and Internal Auditing (Aerospace) (p. 347)
• Plexus: ISO 13485 – Medical Devices Understand and Internal Auditing (p. 348)
• Exemplar Global Certified ISO 9001 Internal Auditor Training with ISO/TS 16949 Automotive Emphasis (p. 340)
• Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (p. 341)
• Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditing Training (p. 341)

**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>Course</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>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-1230</td>
<td>Drawing &amp; AutoCAD ²</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>2-3</td>
</tr>
<tr>
<td>MET-1120</td>
<td>Computer Applications and Programming</td>
<td></td>
</tr>
<tr>
<td>MET-1261</td>
<td>Product Ideation &amp; Design I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td></td>
</tr>
<tr>
<td>MET-1250</td>
<td>Introduction to Additive Manufacturing</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong>:</td>
<td></td>
<td>17-18</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></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>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2000</td>
<td>CAD/CAM Processes</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
<td></td>
</tr>
<tr>
<td>MET-2060</td>
<td>Product Ideation &amp; Design II</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong>:</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I ⁴</td>
<td>4</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>
Select one of the following: 3
MET-2041 CAD II & GD&T
MET-2601 3D Solid Modeling

Select one of the following: 3
MET-2400 Statistical Quality Control
MET-xxxx Elective

Select one of the following: 3
MET-2730 Lean Manufacturing
MET-xxxx Elective
CNST-1410 Architectural CAD I

Credit Hours 16

Fourth Semester
HLTH-1230 Standard First Aid and Personal Safety 1
MET-2500 Fundamentals of Products Development and Manufacture 3

Select one of the following: 3
MET-2740 Quality Manufacturing
MET-xxxx Elective
PHYS-1220 College Physics II 4
Arts & Humanities/Social and Behavioral Sciences (see AAS Degree requirements) (p. 52) 3

Credit Hours 14
Total Credit Hours 62-63

1 MATH-1580 Precalculus & MATH-1610 Calculus I will be accepted 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>
</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>

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 (http://www.tri-c.edu/programs/engineering-technology/manufacturing-engineering/3d-digital-design-and-manufacturing-technology)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree.
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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>MET-1250</td>
<td>Introduction to Additive Manufacturing</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>MET-1261</td>
<td>Product Ideation &amp; Design I</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-2060</td>
<td>Product Ideation &amp; Design II</td>
<td>3</td>
</tr>
<tr>
<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</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>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>

Total Credit Hours: 32-35

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.


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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Digital_Design_and_Product_Innovation/Gedt.html)

Program Admissions Requirements

• 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></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>MET-1250</td>
<td>Introduction to Additive Manufacturing</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>Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-2060</td>
<td>Product Ideation &amp; Design II</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>17</td>
</tr>
</tbody>
</table>

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.


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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/ manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Digital_Manufacturing_and_Product_Launch/Gedt.html)

Program Admissions Requirements

• 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

<table>
<thead>
<tr>
<th>Course</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>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><strong>Credit Hours</strong></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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><strong>Credit Hours</strong></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

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 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

**Gainful Employment Disclosure**

**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.

**Suggested Semester Sequence**

<table>
<thead>
<tr>
<th>Course</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>Select one of the following:</td>
<td>3</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>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<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-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><strong>Total Credit Hours</strong></td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

1 MET-1200 & MET-1220 together will be accepted in place of MET-1230 Drawing & AutoCAD.

**Computer-Integrated Manufacturing (CIM), Certificate of Proficiency**

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. Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

**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; 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

**Gainful Employment Disclosure**

For more information, visit [Cuyahoga Community College](http://www.tri-c.edu/about/disclosure/Computer_Integrated_Manufacturing/Gedt.html).

Learn more [here](http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree.
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 (http://www.tri-c.edu/programs/engineering-technology/manufacturing-engineering/machine-tools-certificate.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Machine_Tools/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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-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-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>14</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
<td>3</td>
</tr>
<tr>
<td>MET-2000</td>
<td>CAD/CAM Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-2140</td>
<td>Manufacturing Automation and Control</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MET-xxxx</td>
<td>Elective</td>
<td>1-3</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></td>
<td>Credit Hours</td>
<td>15-18</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>30-32</td>
</tr>
</tbody>
</table>
MET-1400  CNC Programming and Operation  3
MET-2000  CAD/CAM Processes  3
MET-2422  Fundamentals of Engineering Economics  3
MET-xxxx  Elective  1-3
Select one of the following:  3
  ENG-1010  College Composition I
  ENG-101H  Honors College Composition I

Total Credit Hours  16-18

1 MET-1200 & MET-1220 together will be accepted in place of MET-1230 Drawing & AutoCAD.

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1530</td>
<td>College Algebra (or higher)</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>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>MET-1400</td>
<td>CNC Programming and Operation</td>
<td>3</td>
</tr>
<tr>
<td>MET-2400</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>MET-2422</td>
<td>Fundamentals of Engineering Economics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>MET-2730</td>
<td>Lean Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>31</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 (http://www.tri-c.edu/programs/engineering-technology/manufacturing-engineering/quality-control-certificate.html)

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology) and here (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/mechanical-engineering-technology) about how certificate credits apply to the related degree and about related training programs.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Quality_Control/Gedt.html)

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
The program addresses the broad scope of activities performed in the buying and selling of goods and services to the consuming sectors of the economy. Students are prepared for a variety of marketing positions via a broad working knowledge of the theories and practices of marketing. General marketing, international marketing and professional selling are options.

Program contact: Learn more (http://www.tri-c.edu/programs/business-management/marketing-program-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/business/marketing) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Business Management, Associate of Applied Business (p. 163)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 164)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 167)

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 & 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. Marketing. Gain applied knowledge of the concepts, processes and practices of the marketing function.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</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</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>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2160</td>
<td>Introduction to Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>MARK-2020</td>
<td>Principles of Salesmanship</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2270</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td></td>
</tr>
<tr>
<td>PHIL-2060</td>
<td>Business Ethics</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1121</td>
<td>Principles of Management and Organizational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2501</td>
<td>Business Strategies</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2260</td>
<td>Sales Promotion and Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2500</td>
<td>Business-to-Business/Organizational Marketing</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>62</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/health-careers/massage-therapy)

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 (http://catalog.tri-c.edu/pathways/health-careers/massage-therapy) 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.
- Completion of ENG-0990 Language Fundamentals II, with a "C" or higher, or appropriate score on English Placement Test.
- Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310 English as a Second Language: Grammar for Communication III, and ESL-1321 English as a Second Language: Reading and Writing III, and ESL-1331 English as a Second Language: Speaking and Listening III before acceptance to the Massage Therapy Program.
- Completion of MATH-0910 Basic Arithmetic and Pre-Algebra with a "C" or higher, or appropriate score on Math Placement Test.
- 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."

Other Information

- 25 in the day program and 25 in the evening/weekend program (a combined total of 50 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. 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.
- 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</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>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<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>
<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>Credit Hours</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

| **Second Semester**                                                                                  |
| EMT-1310 | Cardiopulmonary Resuscitation               | 1            |
| MT-1272  | Somatic Studies II                         | 3            |
| MT-1321  | Functional Assessment in Massage Therapy    | 2            |
| MT-1331  | Massage Therapy II                         | 3            |
| MT-2350  | Massage Therapy Clinic I                   | 3            |
| SPCH-1000| Fundamentals of Interpersonal Communication | 3            |
| Select one of the following:                                                                        |
| PSY-1010 | General Psychology                         | 3            |
| PSY-101H | Honors General Psychology                  | 3            |
| Credit Hours                                     | 18           |

| **Summer Session**                                                                                  |
| MATH-1100| Mathematical Explorations                  | 3            |
| MT-1280  | Somatic Studies III                        | 2            |
| MT-2200  | Medical Massage                            | 2            |
| MT-2360  | Massage Therapy Clinic II                  | 3            |
| MT-2701  | Comprehensive Somatic Studies for Massage Therapists | 1            |
| MT-2991  | Comprehensive Massage Therapy              | 1            |
| Credit Hours                                     | 12           |

| **Third Semester**                                                                                  |
| BADM-1300| Small Business Management                   | 4            |
| MT-2311 | Advanced Massage Therapy                   | 3            |
| MT-2380 | Advanced Massage Therapy Clinic            | 3            |
| Select one of the following:                                                                        |
| PHIL-2050| Bioethics                                  | 3            |
| PHIL-205H| Honors Bioethics                           | 3            |
| Select one of the following:                                                                        |
| PSY-2020 | Life Span Development                      | 4            |
| PSY-202H | Honors Life Span Development               | 4            |
| Credit Hours                                     | 17           |

| Total Credit Hours                               | 63           |

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.

Financial Assistance funds cannot be applied towards this program.

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/massage-therapy/advanced-massage-therapy-short-term-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/massage-therapy) 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
<td>2</td>
</tr>
<tr>
<td>MT-2200</td>
<td>Medical Massage</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Credit Hours</strong></td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT-2311</td>
<td>Advanced Massage Therapy</td>
<td>3</td>
</tr>
<tr>
<td>MT-2380</td>
<td>Advanced Massage Therapy Clinic</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Credit Hours</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Credit Hours</strong></td>
</tr>
</tbody>
</table>

Massage Therapy, Certificate of Proficiency

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 (http://www.tri-c.edu/programs/health-careers/massage-therapy/massage-therapy-certificate-of-proficiency.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/massage-therapy) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Gainful_Employment.html) and 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.

- **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.
  - Completion of ENG-0990 Language Fundamentals II, with a "C" or higher, or appropriate score on English Placement Test.
  - Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310 English as a Second Language: Grammar for Communication I, and ESL-1321 English as a Second Language: Reading and Writing II, and ESL-1331 English as a Second Language: Speaking and Listening III before acceptance to the Massage Therapy Program.
  - Completion of MATH-0910 Basic Arithmetic and Pre-Algebra with a "C" or higher, or appropriate score on Math Placement Test.
  - 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."

- **Other Information**

  - 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 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. 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.

- **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>Course</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>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>
<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>
</tr>
<tr>
<td></td>
<td>ENG-101H Honors College Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>11</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT-1280</td>
<td>Somatic Studies III</td>
<td>2</td>
</tr>
<tr>
<td>MT-2200</td>
<td>Medical Massage</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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></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 (http://www.tri-c.edu/programs/health-careers/massage-therapy/massage-therapy-post-degree-professional-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/massage-therapy) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Massage_Therapy-Post_Degree/Gedt.html)

**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**

- 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 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 with foreign country college degree: Completion of ESL-1310 English as a Second Language: Grammar for Communication III, and ESL-1321 English as a Second Language: Reading and Writing III, and ESL-1331 English as a Second Language: Speaking and Listening III before acceptance to the Massage Therapy Program.
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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
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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>MT-1242 Somatic Studies I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT-1302 Massage Therapy I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MT-1312 Applied Musculo-Skeletal Anatomy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT-2301 Pathology for Massage Therapists</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>11</strong></td>
</tr>
<tr>
<td>Second Semester</td>
<td>MT-1272 Somatic Studies II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT-1321 Functional Assessment in Massage Therapy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MT-1331 Massage Therapy II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT-2350 Massage Therapy Clinic I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>11</strong></td>
</tr>
<tr>
<td>Summer Completion</td>
<td>MT-1280 Somatic Studies III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MT-2200 Medical Massage</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MT-2360 Massage Therapy Clinic II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT-2701 Comprehensive Somatic Studies for Massage Therapists</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT-2991 Comprehensive Massage Therapy</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/mechanical-engineering-technology.html)

Learn more (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/mechanical-engineering-technology) 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 the following: 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 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.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>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></td>
<td>Credit Hours</td>
<td>14</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></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-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>
<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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-1300</td>
<td>Engineering Materials and Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET-1621</td>
<td>Technical Dynamics ⁴</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>MET-2200</td>
<td>Strength of Materials ⁵</td>
<td>3</td>
</tr>
<tr>
<td>MET-2240</td>
<td>Mechanical Engineering Lab</td>
<td>1</td>
</tr>
<tr>
<td>MET-2300</td>
<td>Fluid Power ⁶</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td></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>
</tr>
<tr>
<td>PHYS-1220</td>
<td>College Physics II</td>
<td>4</td>
</tr>
<tr>
<td>Arts &amp; Humanities/Social &amp; Behavioral Sciences requirement (p. 52)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>61</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.
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.

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 (http://catalog.tri-c.edu/programs/media-arts-filmmaking-aab/%20http://www.tri-c.edu/programs/media-arts-and-studies/media-arts-studies-program.html)

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 (http://catalog.tri-c.edu/pathways/creative-arts/media-arts-filmmaking) 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

<table>
<thead>
<tr>
<th>Course</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>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><strong>Second Semester</strong></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<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>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 44)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td>16</td>
</tr>
<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>
</tbody>
</table>
Select one of the following: 3
- ENG-1020 College Composition II
- ENG-102H Honors College Composition II

Select one of the following: 3
- MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production
- MARS-2xxx Media Arts and Studies Elective

Select one of the following: 3
- MARS-2xxx Media Arts and Studies Elective
- ART-1081 2D Design and Color
- THEA-1430 Introduction to Scenery and Stagecrafts

Credit Hours
15

Fourth Semester

BADM-1300 Small Business Management 4
MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media 3
MARS-2990 Media Arts and Filmmaking Professional Prep and Portfolio Review 2
MARS-2xxx Media Arts and Studies Elective 3

Social and Behavioral Sciences requirement (p. 47) 3

Credit Hours
15

Summer Completion

MARS-2940 MARS Field Experience 1

Credit Hours
1

Total Credit Hours
65

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.

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 (http://www.tri-c.edu/programs/media-arts-and-studies/motion-graphics.html)

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 (http://catalog.tri-c.edu/pathways/creative-arts/media-arts-filmmaking) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Motion_Graphics/Gedt.html)

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.

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>

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS-1180</td>
<td>Introduction to Media Arts and Filmmaking</td>
<td>3</td>
</tr>
<tr>
<td>ART-1081</td>
<td>2D Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours
9
Second Semester
MARS-2380 Visual Effects 3
MARS-2480 Motion Graphics 3
Credit Hours 6

Third Semester
MARS-2780 Motion Graphics II 3
Credit Hours 3
Total Credit Hours 18

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
(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 (http://www.tri-c.edu/programs/media-arts-and-studies/digital-video-editing-certificate.html)

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 (http://catalog.tri-c.edu/pathways/creative-arts/media-arts-filmmaking) about how certificate credits apply to the related degree.

Gainful Employment Disclosures (http://www.tri-c.edu/about/disclosure/Digital-Video_Editing/Gedt.html)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>Credit Hours</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

| Second Semester |                                               |              |
| MARS-2110      | Editing                                        | 3            |
| MARS-2480      | Motion Graphics                                | 3            |
| Credit Hours   |                                                 | 6            |

| Summer Completion |                                      |              |
| MARS-2120       | Advanced Editing                             | 3            |
| Select one of the following: |                  |              |
| MARS-2380      | Visual Effects                               | 3            |
| MARS-2720      | Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media 1 | 3            |
| MARS-2780      | Motion Graphics II                           | 3            |
| Credit Hours   |                                                 | 6            |
| Total Credit Hours |                                              | 18           |

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.

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 (http://www.tri-c.edu/programs/health-careers/medical-assisting)

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 (http://catalog.tri-c.edu/pathways/health-careers/medical-assisting) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Medical Assisting, Certificate of Proficiency (p. 272)
- Medical Administrative Specialist, Certificate of Proficiency (p. 172)
- Laboratory Phlebotomy, Short-Term Certificate (p. 275)
- Medical Billing Specialist, Short-Term Certificate (p. 224)

Related Training and Credentials
- State-Tested Nurse Aide (p. 349)
- State-Tested Nurse Aide – Accelerated Program (p. 349)
- Community Health Worker (p. 337)
- Patient Access Specialist (p. 346)
- Patient-Care Nursing Assistant (p. 346)

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
- Completion of ENG-1010 College Composition I or ENG-101H Honors College Composition I with a grade of "C" or higher.
- Completion of MATH-1100 Mathematical Explorations or higher, with a grade of "C" or higher.
- GPA required: 2.00 overall

Other Information
- 15 students per semester per campus accepted per year
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) required.
- Non-native English applicants: TOEFL minimum iBT score of 25 required in speaking component, and minimum iBT score of 21 required in listening component, minimum iBT score of 23 in writing component, and minimum iBT score of 21 in reading component.

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.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>MATH-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></td>
</tr>
<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>MA-1321</td>
<td>Medical Office Laboratory Procedures</td>
<td>2</td>
</tr>
<tr>
<td>MA-132L</td>
<td>Medical Office Laboratory Procedures</td>
<td>1</td>
</tr>
<tr>
<td>MA-1402</td>
<td>Basic Clinical Medical Assisting</td>
<td>2</td>
</tr>
<tr>
<td>MA-140L</td>
<td>Basic Clinical Medical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-1503</td>
<td>Administrative Procedures for the Medical Office</td>
<td>2</td>
</tr>
<tr>
<td>MA-150L</td>
<td>Administrative Procedures Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MA-1400</td>
<td>Reimbursement for Physician Services</td>
<td>1</td>
</tr>
<tr>
<td>MA-2413</td>
<td>Advanced Clinical Medical Assisting</td>
<td>3</td>
</tr>
<tr>
<td>MA-241L</td>
<td>Advanced Clinical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-2680</td>
<td>Medical Assisting Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MA-2980</td>
<td>Medical Assisting Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

1. Only offered once per year.

Program Learning Outcomes
This program is designed to prepare students to demonstrate the following learning outcomes:
### Third Semester

Select one of the following:

- **ENG-1020**  
  College Composition II  
  **3**

- **ENG-102H**  
  Honors College Composition II

- **HIM-1112**  
  Physician Office Coding  
  **4**

- **HTEC-1120**  
  Critical Thinking in Healthcare  
  **1**

Select one of the following:

- **IT-1010**  
  Introduction to Microcomputer Applications  
  **3**

- **IT-101H**  
  Honors Introduction to Microcomputer Applications

Select one of the following:

- **PSY-1010**  
  General Psychology

- **PSY-101H**  
  Honors General Psychology

**Credit Hours**  
**14**

### Fourth Semester

- **BADM-1300**  
  Small Business Management  
  **4**

- **MLT-1300**  
  Introduction to Blood Collection  
  **3**

- **MLT-1850**  
  Medical Laboratory Practicum I  
  **3**

- **MLT-2970**  
  Advanced Phlebotomy  
  **1**

- **SPCH-1000**  
  Fundamentals of Interpersonal Communication  
  **3**

**Credit Hours**  
**14**

**Total Credit Hours**  
**62**

---

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**.

---

### 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).

Commission on Accreditation of Allied Health Education Programs  
25400 U.S. Highway 19 North, Suite 158  
Clearwater, FL 33763  
727-210-2350  
www.caahep.org

**Program contact:** Learn more (http://www.tri-c.edu/programs/health-careers/medical-assisting/medical-assisting-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/medical-assisting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Medical_Assisting/Gedt.html)

### 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-1100 Mathematical Explorations or higher with a "C" grade or higher.
- GPA required: 2.00 overall

### 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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.
- Non-native English applicants TOEFL minimum IBT score of 25 required in speaking component, and minimum IBT score of 21 required in listening component, minimum IBT score of 23 in writing component, and minimum IBT score of 21 in reading component.

### 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA-1010</td>
<td>Introduction to Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations (or higher)</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><strong>First Semester</strong></td>
<td></td>
<td>8</td>
</tr>
<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>MA-1321</td>
<td>Medical Office Laboratory Procedures</td>
<td>2</td>
</tr>
<tr>
<td>MA-132L</td>
<td>Medical Office Laboratory Procedures</td>
<td>1</td>
</tr>
<tr>
<td>MA-1402</td>
<td>Basic Clinical Medical Assisting</td>
<td>2</td>
</tr>
<tr>
<td>MA-140L</td>
<td>Basic Clinical Medical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-1503</td>
<td>Administrative Procedures for the Medical Office</td>
<td>2</td>
</tr>
<tr>
<td>MA-150L</td>
<td>Administrative Procedures Laboratory</td>
<td>1</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>DIET-1200</td>
<td>Basic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>MA-2110</td>
<td>Reimbursement for Physician Services</td>
<td>2</td>
</tr>
<tr>
<td>MA-2413</td>
<td>Advanced Clinical Medical Assisting</td>
<td>3</td>
</tr>
<tr>
<td>MA-241L</td>
<td>Advanced Clinical Assisting Lab</td>
<td>1</td>
</tr>
<tr>
<td>MA-2860</td>
<td>Medical Assisting Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MA-2980</td>
<td>Medical Assisting Seminar</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>

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.

Patient Navigator, Short Term Certificate

Develop advanced skills in patient care built around the patient. Develop skills to support individual patients through the continuum of the health care environment. Patient Navigators work in a variety of settings, including but not limited to: community, hospitals, PCMH (patient-centered medical home), primary care facilities and other third-party entities. There is a need for trained patient navigators to assist a growing population to navigate the ever-changing health care environment.

Program contact: [Learn more](http://www.tri-c.edu/programs/health-careers/medical-assisting/patient-navigator)

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](http://catalog.tri-c.edu/pathways/health-careers/patient-navigator) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Medical Assisting, Associate of Applied Science degree (p. 270)

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.
- If a student is placed in ESL courses through the College’s ESL assessment procedure, (at the College Assessment Center), the student will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum score in Reading 21, Listening 22, Writing 23, and Speaking 24.
- MATH-0955 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.

5. **Preparation.** Review patients electronic medical record and identify patient needs requiring navigation of care.

<table>
<thead>
<tr>
<th>Course</th>
<th>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 Coordination</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>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher.
- Complete MATH-1410 Elementary Probability and Statistics I or higher with "C" or higher.
- Completion of CHEM-1020 Introduction to Organic Chemistry and Biochemistry, MLT-1000 Introduction to Medical Laboratory Technology & MA-1020 Medical Terminology I
- 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 "C" or higher.
- GPA required: 2.50 admissions requirements. 2.50 overall

**Other Information**

- 15 students accepted per year
- For students with minimal computer experience, highly recommend also taking IT-1010 Introduction to Microcomputer 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 (http://www.tri-c.edu/programs/healthcareers/background-check-information-bci.html) required.
- Non-native English applicants required to take and pass TOEFL with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24.

**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 trouble shoot 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.

**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 (http://www.tri-c.edu/programs/healthcareers/medicallab/Pages/Default.aspx)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/medical-laboratory-technology) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**

- Laboratory Phlebotomy, Short-Term Certificate (p. 275)
### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1410</td>
<td>Elementary Probability and Statistics I ²</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1000</td>
<td>Introduction to Medical Laboratory Technology</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>Credit Hours</td>
<td>16</td>
</tr>
</tbody>
</table>

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I ³</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>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course</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>MLT-2471</td>
<td>Immunohematology &amp; Serology</td>
<td>5</td>
</tr>
<tr>
<td>MLT-2501</td>
<td>Clinical Chemistry</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>14</td>
</tr>
</tbody>
</table>

### Third 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>MLT-2482</td>
<td>Clinical Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>MLT-2990</td>
<td>Advanced MLT Applications</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<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>
<tr>
<td></td>
<td>Credit Hours</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>64</td>
</tr>
</tbody>
</table>

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. BIO-233A and BIO-233B may be taken in place of BIO-2331.

### 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 an eight-week period of clinical hands-on experience in a hospital or medical clinic.

The skill of phlebotomy is part of the Medical Laboratory Technology (Clinical Laboratory Science) profession. Students can apply their technical credits in phlebotomy to the Associate of Applied Science degree in Medical Laboratory Technology.

**Program contact:** Learn more [here](http://www.tri-c.edu/programs/health-careers/laboratory-phlebotomy).

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 [here](http://catalog.tri-c.edu/pathways/health-careers/laboratory-phlebotomy) and [here](http://catalog.tri-c.edu/pathways/health-careers/medical-assisting) about how certificate credits apply to the related degree.

Gainful Employment Disclosure [here](http://www.tri-c.edu/about/disclosure/Phlebotomy/Gedt.html)

### Related Degrees and Certificates

- Medical Laboratory Technology, Associate of Applied Science (p. 274)
- Medical Assisting, Associate of Applied Science (p. 270)

### Program Admission Requirements

- Rolling admissions. Program starts spring (classroom based daytime lecture/labs) and fall semesters (distance learning lecture/evening labs) of each year. Refer to program website for specific/additional scheduling: [here](http://www.tri-c.edu/programs/health-careers/phlebotomy/Pages/default.aspx). 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.
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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html)
- English as a Second Language students will be required to take and pass the Test of English as a Foreign Language (TOEFL) with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24. Submit scores with Health Careers Application to the Health Careers Enrollment Center.
- 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.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate an understanding of the basic concepts of communications, 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 patient, co-workers and community.
3. Apply knowledge of the anatomy and physiology of body systems and anatomic terminology in order to relate major area of the clinical laboratory to general pathologic conditions associated with the body systems.
4. Demonstrate proper techniques using appropriate equipment to perform venipuncture and capillary puncture while maintaining quality assurance during and after specimen acquisition.
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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1050</td>
<td>Human Biology</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>MLT-1300</td>
<td>Introduction to Blood Collection</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1850</td>
<td>Medical Laboratory Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-2970</td>
<td>Advanced Phlebotomy</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credit Hours 19

1. BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, BIO-2341 Anatomy and Physiology II, or BIO-234A will be accepted in place of BIO-1050 Human Biology.
2. Consecutive eight week course.
3. Completed second eight weeks with MLT-1850 Medical Laboratory Practicum I.

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 maybe 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 (http://www.tri-c.edu/programs/health-careers/nuclear-medicine)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/nuclear-medicine) about how certificate credits apply to the related degree.
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
- Completion of ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher
- Completion of MATH-1530 College Algebra with "C" or higher
- MA-1020 Medical Terminology I with "C" or higher
- CHEM-1300 General Chemistry I/CHEM-130L General Chemistry Laboratory I (Note: 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).
- PHYS-1050 Everyday Physics (will only be offered in the Fall Semester)***or PHYS-1210 College Physics I may be used in place of PHYS-1050 and for those students intending to transfer to a four year institution.
- 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.

Other Information

- A 2.50 prerequisite GPA must be maintained while waiting for entry into the first program major course.
- Prior to formal admission into the program, an applicant must show evidence of completion of 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 completed, a copy of the observation form should be emailed to the Nuclear Medicine Program Manager, (http://www.tri-c.edu/programs/health-careers/nuclear-medicine)
- 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.
- 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.
- Completion of Test of English as a Foreign Language (TOEFL) is required of all international students or if English is spoken as a second language. A minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, and a minimum iBT score of 21 in the reading component, and a minimum score of 23 in the writing component. More information about this test is at http://www.ets.org/
- 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, immunizations and physical exams.
- BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging with "C" or higher or BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II with "C" or higher may be used in place of BIO-1221.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Use effective verbal, non-verbal and written communication skills to provide comprehensive patient care in a healthcare team environment.
2. Prepare, record, administer and dispose of radioactive materials according to regulatory guidelines to ensure safety of patients, co-workers and the general public.
3. Demonstrate comprehensive patient care skills to provide safe, efficient and high quality nuclear medicine services.
4. 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. Sit for Nuclear Medicine Technology Certification Board (NMTCB) and American Registry of Radiologic Technology [nuclear] (ARRT) and apply for state licensure.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1221</td>
<td>Anatomy and Physiology for Diagnostic Medical Imaging</td>
<td>4</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1050</td>
<td>Everyday Physics</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM-130L</td>
<td>and General Chemistry Laboratory I</td>
<td></td>
</tr>
<tr>
<td>CHEM-130H</td>
<td>Honors General Chemistry I</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>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>MATH-1530</td>
<td>College Algebra 1</td>
<td>2</td>
</tr>
<tr>
<td>MATH-153H</td>
<td>Honors College Algebra</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 21

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMED-1010</td>
<td>Nuclear Medicine Math and Statistics</td>
<td>1</td>
</tr>
<tr>
<td>NMED-1200</td>
<td>Radiation Safety &amp; Biology</td>
<td>2</td>
</tr>
<tr>
<td>NMED-1301</td>
<td>Nuclear Medicine Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>NMED-130L</td>
<td>Nuclear Medicine Laboratory I</td>
<td>1</td>
</tr>
</tbody>
</table>
### Nursing, Associate of Applied Science

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMED-1100</td>
<td>Computers in Nuclear Medicine</td>
<td>1</td>
</tr>
<tr>
<td>NMED-1401</td>
<td>Patient Care for Nuclear Medicine</td>
<td>1</td>
</tr>
<tr>
<td>NMED-1770</td>
<td>Immunology and Pathophysiology for Sectional Imaging</td>
<td>2</td>
</tr>
<tr>
<td>NMED-1780</td>
<td>Sectional Anatomy for Advanced Molecular Imaging</td>
<td>2</td>
</tr>
<tr>
<td>NMED-2301</td>
<td>Nuclear Medicine Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>NMED-230L</td>
<td>Nuclear Medicine Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>NMED-2600</td>
<td>Molecular and Fusion Imaging</td>
<td>2</td>
</tr>
<tr>
<td>NMED-2660</td>
<td>Nuclear Medicine Therapy</td>
<td>1</td>
</tr>
</tbody>
</table>

Select one of the following:

- ENG-1020 College Composition II
- ENG-102H Honors College Composition II
- SPCH-1000 Fundamentals of Interpersonal Communication

**Credit Hours**: 16

#### Summer Session

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMED-2700</td>
<td>Nuclear Medicine Research Methods</td>
<td>1</td>
</tr>
<tr>
<td>NMED-2940</td>
<td>Nuclear Medicine Field Experience I</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- PHIL-2050 Bioethics
- PHIL-205H Honors Bioethics

**Credit Hours**: 7

#### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMED-2950</td>
<td>Nuclear Medicine Field Experience II</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following:

- PSY-1010 General Psychology
- PSY-101H Honors General Psychology

**Credit Hours**: 7

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMED-2960</td>
<td>Nuclear Medicine Field Experience III</td>
<td>4</td>
</tr>
<tr>
<td>Arts &amp; Hum/Soc &amp; Beh Sci (See AAS degree requirements)</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Hours**: 6

**Total Credit Hours**: 73

---

1. BIO-2331 Anatomy and Physiology I & BIO-2341 Anatomy and Physiology II together will be accepted in place of BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging.

2. MATH-1800 Special Topics in Mathematics-MATH-1820 Independent Study/Research in Mathematics may not be used to meet this requirement.

3. PHYS-1210 College Physics I will be accepted in place of PHYS-1050 Everyday Physics.

4. Students must earn a "C" or higher in all Nuclear Medicine courses to be awarded the AAS degree in Nuclear Medicine Technology.

---

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.

Curriculum changes go into effect for students entering Nursing program Fall 2016. Students admitted prior to Fall 2016 will continue to follow catalog under which they were admitted.

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](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 [http://www.tri-c.edu/programs/nursing](http://www.tri-c.edu/programs/nursing) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- Nursing (Accelerated Track), Associate of Applied Science (p. 280)
- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 282)
- Practical Nursing, Certificate of Proficiency (p. 284)

### Related Training and Credentials

- State-Tested Nurse Aide (p. 349)
- State-Tested Nurse Aide – Accelerated Program (p. 349)
- Community Health Worker (p. 337)
- Patient Access Specialist (p. 346)
- Patient-Care Nursing Assistant (p. 346)

### Program Admission Requirements

Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- Please see application procedures (p. 109) for more information.
- 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 courses in English, Math, or the Sciences that are at the 1000 level or above.

• 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 courses in English, Math or the Sciences that are at the 1000 level or above (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 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, or Westshore Campus).

• Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher. 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.

• Complete MATH-1240 Contemporary Mathematics or higher with "C" or higher**.

• Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements. These courses must be repeated.

• 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-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>Introduction to Organic Chemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3-8

Select one of the following: 3

| PSY-1010  | General Psychology                          |              |
| PSY-101H  | Honors General Psychology                   |              |

**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 per calendar year. 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 (http://www.tri-c.edu/nursing) for further information.

• Day and evening classes admitted Fall and Spring. Space available basis.

**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 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 healthcare 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<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>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3

| ENG-1010   | College Composition I                      |              |
| ENG-101H   | Honors College Composition I               |              |
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>

**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>NURS-1300</td>
<td>Health Assessment</td>
<td>2</td>
</tr>
<tr>
<td>NURS-1451</td>
<td>Self-Care Needs: Adult Life Span</td>
<td>7</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-2020</td>
<td>Life Span Development</td>
<td>4</td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
<td></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>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>5</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>NURS-1601</td>
<td>Health Deviations I</td>
<td>7</td>
</tr>
<tr>
<td>NURS-1701</td>
<td>Community/Home Nursing</td>
<td>1</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>NURS-2301</td>
<td>Specialized Health Care Needs</td>
<td>8</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-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>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS-2501</td>
<td>Health Deviations II</td>
<td>8</td>
</tr>
</tbody>
</table>

**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 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. Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331 Anatomy and Physiology I.

5. Modular courses BIO-234A & BIO-234B may be taken in place of BIO-2341 Anatomy and Physiology II.

Curriculum changes go into effect with students admitted to the program Fall 2016. Students admitted to the program prior to Fall 2016 will continue to follow the catalog from the year they were admitted.

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).

Transfer credits may be used to meet program admission requirements as appropriate. Curriculum changes go into effect with students admitted to the program Fall 2016. Students admitted to the program prior to Fall 2016 will continue to follow the catalog from the year they were admitted.

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](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 ([http://www.tri-c.edu/programs/nursing](http://www.tri-c.edu/programs/nursing))

Learn more ([http://catalog.tri-c.edu/pathways/health-careers/nursing-access-lpn-to-rn-track](http://catalog.tri-c.edu/pathways/health-careers/nursing-access-lpn-to-rn-track)) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- Nursing, Associate of Applied Science (p. 278)
- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 282)

### 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](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. 109) 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 course from another accredited institution¹ may use that institution's cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and a GPA of 3.0 or greater.

• 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.

• An official transcript must be submitted to Tri-C’s Enrollment Office (Metropolitan, Eastern, or Westshore Campus).

• Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher. 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 must be earned.

• Complete MATH-1240 Contemporary Mathematics or higher with "C" or higher.

• Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements.

• 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 courses in English, Math, or the Sciences that are at the 1000 level or above.

• 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-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3-8</td>
</tr>
<tr>
<td>CHEM-1010 &amp; CHEM-1020</td>
<td>Introduction to Inorganic Chemistry and Introduction to Organic Chemistry and Biochemistry</td>
<td></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>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>

• Successful completion of Entrance Examination.

¹ Schools accepted by Cuyahoga Community College.

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 per calendar year. 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) that includes fingerprinting and a court search. Log onto www.tri-c.edu/nursing (http://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 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>Course</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 (or higher)**</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3-8

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>Introduction to Inorganic Chemistry and</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM-1020</td>
<td>Introduction to Organic Chemistry and Biochemistry</td>
<td>1</td>
</tr>
</tbody>
</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>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>

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
</tbody>
</table>

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS-1300</td>
<td>Health Assessment</td>
<td>2</td>
</tr>
<tr>
<td>NURS-1451</td>
<td>Self-Care Needs: Adult Life Span</td>
<td>7</td>
</tr>
</tbody>
</table>

Select one of the following: 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY-2020</td>
<td>Life Span Development</td>
<td></td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</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>NURS-1601</td>
<td>Health Deviations I</td>
<td>7</td>
</tr>
<tr>
<td>NURS-1701</td>
<td>Community/Home Nursing</td>
<td>1</td>
</tr>
</tbody>
</table>

### Summer Session

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS-2301</td>
<td>Specialized Health Care Needs</td>
<td>8</td>
</tr>
</tbody>
</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>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>

### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS-2501</td>
<td>Health Deviations II</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>64-69</td>
</tr>
</tbody>
</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. Recommended for students planning to transfer to a BSN program.

2. BIO-233A and BIO-233B may be taken in place of BIO-2331 Anatomy and Physiology I.

3. BIO-234A and BIO-234B may be taken in place of BIO-2341 Anatomy and Physiology II.

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 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.

Curriculum changes go into effect for students entering Nursing program Fall 2016. Students admitted prior to Fall 2016 will continue to follow catalog under which they were admitted.

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 (http://www.tri-c.edu/programs/nursing) Learn more (http://catalog.tri-c.edu/pathways/health-careers/nursing-accelerated-track) about how certificate credits apply to the related degree.

### Related Degrees and Certificates

- Practical Nursing, Certificate of Proficiency (p. 284)

### Program Admission Requirements

Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- Please see application procedures (p. 109) for more information.
- Students who seek admission to the LPN to RN track must meet all Nursing Program admission requirements and must have 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. Credentialed to administer medication by the Ohio Board of Nursing (OBN)

e. Official LPN transcript

f. One year – minimum of clinical nursing experience as an L.P.N.

- Complete the program admissions courses (listed below) with "C" or higher.

- High School Diploma/GED. High school transcript must be sent to:
  
  Tri-C
  
  Office of the Registrar
  
  P.O. Box 5966
  
  Cleveland, OH 44101

- GPA: A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above.

- 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\(^1\) may use that institution's cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and have a GPA of 3.0 or greater. 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, or Westshore Campus).

\(^1\) Schools accepted by Cuyahoga Community College.

### Other Information

- 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 must be earned.

- Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements.

- Number accepted per year: Space available basis. Modified evening classes admitted Spring.

- Work experience/volunteer: one year minimum of clinical nursing experience as an L.P.N.

- 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 per calendar year. 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 (http://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.
### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry 1</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher) 3</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>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Credit Hours</strong></td>
<td>12</td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I 4</td>
<td>4</td>
</tr>
<tr>
<td>NURS-160A</td>
<td>Access to Registered Nursing 5,6</td>
<td>3</td>
</tr>
<tr>
<td>NURS-160D</td>
<td>Health Deviations I for LPNs 7,8</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PSY-2020</td>
<td>Life Span Development</td>
<td></td>
</tr>
<tr>
<td>PSY-202H</td>
<td>Honors Life Span Development</td>
<td></td>
</tr>
<tr>
<td><strong>Summer</strong></td>
<td><strong>Credit Hours</strong></td>
<td>14</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><strong>Second Semester</strong></td>
<td><strong>Credit Hours</strong></td>
<td>8</td>
</tr>
<tr>
<td>NURS-1701</td>
<td>Community/Home Nursing</td>
<td>1</td>
</tr>
<tr>
<td>NURS-2301</td>
<td>Specialized Health Care Needs</td>
<td>8</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>
<tr>
<td><strong>Third Semester</strong></td>
<td><strong>Credit Hours</strong></td>
<td>8</td>
</tr>
<tr>
<td>NURS-2501</td>
<td>Health Deviations II</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>54</td>
</tr>
</tbody>
</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. 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 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. Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331 Anatomy and Physiology 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. LPNs accepted into the Cuyahoga Community College Nursing Program are required to take NURS-160D Health Deviations I for LPNs.

8. 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.

### Practical Nursing, Certificate of Proficiency

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 41 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 (http://www.tri-c.edu/programs/nursing/practical-nursing-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/nursing-accelerated-track) and here (http://catalog.tri-c.edu/pathways/health-careers/nursing-
careers/practical-nursing) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Practical_Nursing/Gedt.html)

Related Degrees and Certificates
- Nursing (Access LPN to RN Track), Associate of Applied Science (p. 282)

Related Training and Credentials
- State-Tested Nurse Aide (p. 349)
- State-Tested Nurse Aide – Accelerated Program (p. 349)
- Community Health Worker (p. 337)
- Patient Access Specialist (p. 346)
- Patient-Care Nursing Assistant (p. 346)

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. 109) for more information.
- High School Diploma/GED, or a higher degree transcript must be on file in the Office of the Registrar.
- ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- 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 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 courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and a GPA of 2.5 or greater.
- 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).

Schoool accepted by Cuyahoga Community College.

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 per calendar year. 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.

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**

<table>
<thead>
<tr>
<th>Course</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>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>
</tbody>
</table>

| Credit Hours | 12 |

| **Second Semester**                                      |               |
| PNUR-1330   | Nursing Management of Adults II             | 8            |
| Select one of the following:                            |               |
| ENG-1010    | College Composition I                      | 3            |
| ENG-101H    | Honors College Composition I               | 3            |
| Select one of the following:                            |               |
| PSY-1010    | General Psychology                         | 3            |
| PSY-101H    | Honors General Psychology                  | 3            |

| Credit Hours | 14 |

| **Summer Completion**                                     |               |
| PNUR-1341    | Lifespan Nursing for the Practical Nurse    | 4            |
| Select one of the following:                              |               |
| PSY-2020     | Life Span Development                       | 4            |
| PSY-202H     | Honors Life Span Development                | 4            |

| 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.

**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](http://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, 20824-3439
Telephone: 301-652-2682
Website: [http://www.aota.org](http://www.aota.org/Education-Careers/Accreditation.aspx)

**Program contact:** Learn more about the OTAT program at [http://www.tri-c.edu/programs/health-careers/occupational-therapy](http://www.tri-c.edu/programs/health-careers/occupational-therapy)

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with “C” or higher.
- Complete the following:
  - BIO-2331 Anatomy and Physiology I (or BIO-2330 Anatomy and Physiology I or BIO-233A & BIO-234A )
  - MA-1020 Medical Terminology I
  - Sufficient score on Biology placement test or grade of “C” or higher in BIO-1100 Introduction to Biological Chemistry.
- 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.
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.
- Applicants whose native language is not English must take the TOEFL (Test of English as a Foreign Language) Exam. Arrangements and costs incurred for the TOEFL will be the responsibility of the student. Minimum scores must reflect 21 in Reading, 21 in Listening, 23 in Writing and 25 in Speaking.
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I ^1</td>
<td>4</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>OTAT-1300</td>
<td>Occupational Therapy Principles</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTAT-1310</td>
<td>Task Analysis</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></td>
<td><strong>Credit Hours</strong></td>
<td>14</td>
</tr>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>OTAT-1320</td>
<td>Fundamentals of Developmental Disabilities</td>
<td>2</td>
</tr>
<tr>
<td>OTAT-1330</td>
<td>Techniques in Developmental Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>OTAT-1850</td>
<td>Practicum I</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-1300</td>
<td>Functional Anatomy</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>17</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>OTAT-1420</td>
<td>Fundamentals of Psychosocial Dysfunction</td>
<td>2</td>
</tr>
<tr>
<td>OTAT-1430</td>
<td>Techniques in Psychosocial Dysfunction</td>
<td>3</td>
</tr>
<tr>
<td>OTAT-1860</td>
<td>Practicum II</td>
<td>2</td>
</tr>
<tr>
<td>OTAT-1980</td>
<td>Therapeutic Use of Self</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>13</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTAT-2320</td>
<td>Fundamentals of Physical Dysfunction</td>
<td>4</td>
</tr>
<tr>
<td>OTAT-2330</td>
<td>Techniques in Physical Disabilities</td>
<td>4</td>
</tr>
<tr>
<td>OTAT-2340</td>
<td>Occupational Therapy Issues</td>
<td>3</td>
</tr>
<tr>
<td>OTAT-2860</td>
<td>Practicum III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>13</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTAT-2940</td>
<td>Field Experience</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>63</td>
</tr>
</tbody>
</table>

^1 BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 Anatomy and Physiology I and BIO-2341 Anatomy and Physiology II.
Operations Engineering Technology, Associate of Applied Science

The Associate of Applied Science degree in Operations Engineering Technology is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/production setting. Production, logistics, basic design principles, and basic business practices are covered within the program. The program is designed to tie the fundamentals of engineering technology with the fundamentals of production management. This program ties into 4-year bachelor degree programs aimed at production management.

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.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<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>Select one of the following:</td>
<td>3</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>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>17</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1630</td>
<td>Industrial Supply Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MET-1240</td>
<td>Machine Tools and Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MET-2400</td>
<td>Statistical Quality Control 2</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1210</td>
<td>College Physics I 3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>13</td>
</tr>
</tbody>
</table>
Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MET-2750</td>
<td>Technical Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>CHEM-1300</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 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>
</tbody>
</table>

Total Credit Hours: 60

1. 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.
2. MET-2430 Engineering Probability and Statistics may be used to meet this requirement.
3. PHYS-2310 General Physics I may be used to meet this requirement.
4. SPCH-1010 Fundamentals of Speech Communication or ENG-1020 College Composition II may be used to meet this requirement.

Related Degrees and Certificates

- Operations Engineering Technology (Engineering Management), Associate of Applied Science (p. 290)
- Operations Engineering Technology, Associate of Applied Science (p. 288)
- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 253)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 257)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 257)
- Machine Tools Operation, Certificate of Proficiency (p. 258)
- Quality Control, Certificate of Proficiency (p. 259)
- Digital Design & Product Innovation, Short-Term Certificate (p. 254)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 255)

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; 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 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<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 2</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
</tbody>
</table>

Learn more (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/operations-engineering-technology-automated-manufacturing) about how certificate credits apply to the related degree.
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. The program is designed to tie 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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/operations-engineering-technology-engineering-management) 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. 289)
- Operations Engineering Technology, Associate of Applied Science (p. 288)
- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (p. 253)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (p. 257)
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (p. 257)
- Machine Tools Operation, Certificate of Proficiency (p. 258)
- Quality Control, Certificate of Proficiency (p. 259)
- Digital Design & Product Innovation, Short-Term Certificate (p. 254)
- Digital Manufacturing and Product Launch, Short-Term Certificate (p. 255)

### 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

### Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>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 2</td>
<td>2</td>
</tr>
<tr>
<td>MET-1230</td>
<td>Drawing &amp; AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MET-2500</td>
<td>Fundamentals of Products Development and Manufacture</td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</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><strong>Total Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>
**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MET-1630</td>
<td>Industrial Supply Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 15

**Summer Session**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1610</td>
<td>Calculus I</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Credit Hours: 5

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-2151</td>
<td>Technical Writing</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>MET-2430</td>
<td>Engineering Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 12

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNST-2510</td>
<td>Introduction to Asset Management</td>
<td>3</td>
</tr>
<tr>
<td>MET-2610</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-2310</td>
<td>General Physics I</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Credit Hours: 11

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 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.

---

1. MATH-1620 Calculus II or MATH-1580 Precalculus 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.
2. 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.

---

**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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></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>Select one of the following:</td>
<td>3</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>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<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>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>16</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNST-1740</td>
<td>Fundamentals of Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>MET-1630</td>
<td>Industrial Supply Logistics</td>
<td>3</td>
</tr>
<tr>
<td>MET-2041</td>
<td>CAD II &amp; GD&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>MET-2601</td>
<td>3D Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH-1540</td>
<td>Trigonometry</td>
<td></td>
</tr>
<tr>
<td>MATH-154H</td>
<td>Honors Trigonometry</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>15</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>31</td>
<td></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 (http://www.tri-c.edu/programs/health-careers/optical-technology)

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 (http://catalog.tri-c.edu/pathways/health-careers/optical-technology) 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 appropriate score on Math Placement Test.
- GPA required: 2.00 overall

**Other Information**

- 14 students accepted per year
- Criminal background check (http://www.tri-c.edu/search-results.html?cx=01328190540444151491%3A4djhmeoq1wu&ie=UTF-8&q=background+check&searchButton=/#gsctab=0&gscq=background%20check&gscpage=1) required.
- Acceptance into a Tri-C Healthcare program with a BCI record does not guarantee a clinical site place, acceptance by the profession’s licensure/registration board, or employment upon graduation.
- A student placed in ESL courses through the College’s ESL Assessment procedure (at the college Assessment Center) will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum score in Reading 21, Listening 21, Writing 23 and Speaking 25.

**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>Course</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>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 52)</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1310</td>
<td>Theoretical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1410</td>
<td>Mechanical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1510</td>
<td>Optical Dispensing I</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1610</td>
<td>Contact Lens I</td>
<td>2</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPT-1320</td>
<td>Theoretical Optics II</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1420</td>
<td>Mechanical Optics II</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1520</td>
<td>Optical Dispensing II</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1620</td>
<td>Contact Lens II</td>
<td>2</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td></td>
</tr>
<tr>
<td>PHIL-205H</td>
<td>Honors Bioethics</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPT-1710</td>
<td>Introduction to Patient Care</td>
<td>3</td>
</tr>
<tr>
<td>OPT-2501</td>
<td>Optical Business</td>
<td>3</td>
</tr>
<tr>
<td>OPT-2550</td>
<td>Advanced Optical Dispensing Lab</td>
<td>1</td>
</tr>
<tr>
<td>OPT-2650</td>
<td>License Review Spectacle</td>
<td>1</td>
</tr>
<tr>
<td>OPT-2940</td>
<td>Optical Field Experience I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-2971</td>
<td>Optical Field Experience Seminar I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPT-2660</td>
<td>License Review Contact Lens</td>
<td>1</td>
</tr>
<tr>
<td>OPT-2701</td>
<td>Refractometry</td>
<td>3</td>
</tr>
<tr>
<td>OPT-2950</td>
<td>Optical Field Experience II</td>
<td>2</td>
</tr>
<tr>
<td>OPT-2981</td>
<td>Optical Field Experience Seminar II</td>
<td>3</td>
</tr>
<tr>
<td>Communications requirement (p. 49)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>64</td>
</tr>
</tbody>
</table>

1 Highly recommend ENG-1020 College Composition II or ENG-2151 Technical Writing.

### Optical Technology, Certificate of Proficiency

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 to be eligible to take the State Board Exam for licensure, you must finish the Optical Technology degree program.

**Program contact:** Learn more [here](http://www.tri-c.edu/programs/health-careers/optical-technology/optical-technology-certificate.html)

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](http://catalog.tri-c.edu/pathways/health-careers/optical-technology) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure** [here](http://www.tri-c.edu/about/disclosure/Optical_Technology/Gedt.html)

### Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED

### Other Information

- 25 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>Course</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>OPT-1310</td>
<td>Theoretical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1410</td>
<td>Mechanical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1510</td>
<td>Optical Dispensing I</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1610</td>
<td>Contact Lens I</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>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSY-101H</td>
<td>Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 44)</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1320</td>
<td>Theoretical Optics II</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1420</td>
<td>Mechanical Optics II</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1520</td>
<td>Optical Dispensing II</td>
<td>3</td>
</tr>
<tr>
<td>OPT-1620</td>
<td>Contact Lens II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS-1300</td>
<td>Physics of Optical Materials</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

**Ophthalmic Medical Assisting, Short-Term Certificate**

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 (http://www.tri-c.edu/programs/health-careers/optical-technology/ophthalmic-medical-assisting-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/optical-technology) 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.
- GPA required: 2.00

**Other Information**

- 14 students accepted per year
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</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>BIO-1230</td>
<td>Anatomy and Physiology of the Eye</td>
<td>4</td>
</tr>
<tr>
<td>OPT-1710</td>
<td>Introduction to Patient Care</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPT-1721</td>
<td>Advanced Patient Care</td>
<td>2</td>
</tr>
<tr>
<td>OPT-1911</td>
<td>Ophthalmic Assisting Directed Practice</td>
<td>4</td>
</tr>
<tr>
<td>OPT-2701</td>
<td>Refractometry</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>
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 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 (http://www.tri-c.edu/programs/paralegal)

Learn more (http://catalog.tri-c.edu/pathways/business/paralegal-studies) about how certificate credits apply to the related degree.

Related Degrees and Certificates
- Legal Administrative Specialist, Certificate of Proficiency (p. 171)
- Paralegal Studies, Post-Degree Professional Certificate (p. 296)

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 Paralegal Profession with "B" or higher.
  - Program application form (distributed during PL-1001).
  - Personal narrative.

Other Information
- PL grades below a "C" will not be accepted and those courses will have to be retaken.
- GPA required: 2.50 overall and 2.75 in Paralegal courses to graduate
- Submit all college/university transcripts to:
  Office of the Registrar
  P O Box 5966

Cleveland, OH 44101

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>Course</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>ACCT-1020</td>
<td>Applied Accounting (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>PL-1001</td>
<td>Introduction to Paralegal Profession</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>POL-1010</td>
<td>American National Government</td>
<td></td>
</tr>
<tr>
<td>POL-101H</td>
<td>Honors American National Government</td>
<td></td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-1020</td>
<td>Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PL-1300</td>
<td>Civil Procedures</td>
<td>3</td>
</tr>
<tr>
<td>PL-1400</td>
<td>Basic Legal Research and Writing</td>
<td>3</td>
</tr>
<tr>
<td>PL-1502</td>
<td>Law Office Technology</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>
<tr>
<td>Credit Hours</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>
Paralegal Studies, Post-Degree Professional Certificate

Third Semester
PL-2301 Torts and Evidence 4
PL-2400 Computer Assisted Legal Research 3
PL-2440 Business Transactions 3
PL-xxxx Any PL elective course 2-3
Select one of the following: 3-4
ACCT-1310 Financial Accounting
EHST-1310 Introduction to Environmental Law
MA-1020 Medical Terminology I
Credit Hours 15-17

Fourth Semester
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
Credit Hours 13-14
Total Credit Hours 61-64

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.

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 (http://www.tri-c.edu/programs/paralegal/paralegal-studies-certificate.html)

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 (http://catalog.tri-c.edu/pathways/business/paralegal-studies) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Paralegal_Studies/Gedt.html)

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 Paralegal Profession with “B” or higher
  • Program application form (distributed during PL-1001)
  • Personal narrative

Other Information

• Fall, Spring and Summer admission
• Paralegal course grades below a "C" will not be accepted and those courses will have to be re-taken
• Required GPA of 2.75 to graduate

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>Course</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>PL-1001</td>
<td>Introduction to Paralegal Profession</td>
<td>3</td>
</tr>
<tr>
<td>PL-1300</td>
<td>Civil Procedures</td>
<td>3</td>
</tr>
<tr>
<td>PL-1400</td>
<td>Basic Legal Research and Writing</td>
<td>3</td>
</tr>
<tr>
<td>PL-1502</td>
<td>Law Office Technology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-2301</td>
<td>Torts and Evidence</td>
<td>4</td>
</tr>
<tr>
<td>PL-2400</td>
<td>Computer Assisted Legal Research</td>
<td>3</td>
</tr>
<tr>
<td>PL-2440</td>
<td>Business Transactions</td>
<td>3</td>
</tr>
<tr>
<td>PL-xxxx</td>
<td>Any PL elective course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-2851</td>
<td>Paralegal Practicum</td>
<td>1</td>
</tr>
<tr>
<td>PL-2991</td>
<td>Paralegal Capstone</td>
<td>1</td>
</tr>
<tr>
<td>PL-xxxx</td>
<td>Any PL elective course</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>4-5</strong></td>
</tr>
<tr>
<td></td>
<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.

---

### Pharmacy Technology, Associate of Applied Science

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 many employers, and will hold a college degree that will contribute to professional advancement.

---

**Program contact:** Learn more [here](http://www.tri-c.edu/programs/health-careers/pharmacy-technology).

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](http://catalog.tri-c.edu/pathways/health-careers/pharmacy-technology) 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
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher
- Completion of MATH-0955 Beginning Algebra with "C" or higher, or appropriate score on Math placement test to be eligible for enrollment into MATH-1240 Contemporary Mathematics.
- 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.
- GPA required: 2.00 admissions requirements; 2.00 overall.

---

### 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 [here](http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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.
Pharmacy Technician, Certificate of Proficiency

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry (^1)</td>
<td>3</td>
</tr>
<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>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1050</td>
<td>Human Biology 2</td>
<td>3</td>
</tr>
<tr>
<td>BIO-105L</td>
<td>Human Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>3</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></td>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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-1860</td>
<td>Pharmacy Technology Practicum I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communications requirement (p. 49)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT-1010 Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IT-101H Honors Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>PHM-2701</td>
<td>Current Topics in Pharmacy Practice</td>
<td>4</td>
</tr>
<tr>
<td>PHM-2860</td>
<td>Pharmacy Technology Practicum II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
<td>3</td>
</tr>
<tr>
<td>PHM-2080</td>
<td>Pharmacy Technician Examination Review</td>
<td>1</td>
</tr>
<tr>
<td>PHM-2870</td>
<td>Pharmacy Technology Practicum III</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHIL-2050 Bioethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHIL-205H Honors Bioethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

\(^{1}\) 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 or BIO-2330 will be accepted in place of BIO-1050/105L.

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 be prepared to take the national Pharmacy Technician Certification Examination, recognized by many employers.

**Program contact:** Learn more (http://www.tri-c.edu/programs/health-careers/pharmacy-technology/pharmacy-technician-certificate.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/pharmacy-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Pharmacy_Technician/Gedt.html)

**Program Admission Requirements**

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with "C" or higher or have earned credit in a higher level English course (minimum grade of C).
- Completion of MATH-0955 Beginning Algebra or sufficient score on Math Placement Test to enroll in MATH-1240 Contemporary Mathematics.
- Complete BIO-1100 Introduction to Biological Chemistry with "C" or higher. May substitute CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry or CHEM-101H Honors Introduction to Inorganic Chemistry and CHEM-102H Honors Introduction to Organic Chemistry and Biochemistry.
• GPA required: 2.00 admission requirements; 2.00 overall.

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<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></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><strong>First Semester</strong></td>
<td></td>
<td>6</td>
</tr>
<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>MATH-1240</td>
<td>Contemporary Mathematics (or higher)</td>
<td>3</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><strong>Second Semester</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>BIO-2500</td>
<td>Microbiology</td>
<td>4</td>
</tr>
<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-1860</td>
<td>Pharmacy Technology Practicum I</td>
<td>3</td>
</tr>
</tbody>
</table>

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 or BIO-2330 will be accepted in place of BIO-1050 Human Biology/BIO-105L Human Biology Laboratory.

Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

• 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.
• Complete the following with "C" grade or higher: BIO-2331 Anatomy and Physiology I (or BIO-2330), HTEC-1000 Introduction to Patient Care, MA-1020 Medical Terminology I

Other Information

• 24 students accepted per year
• All science courses must have been completed within the past 10 years.
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. Recognize and 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 the 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.

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.

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.

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.

Completion of 40 hours of work, volunteering and/or observation in a Physical Therapy Department under the supervision of a Physical Therapist or Physical Therapist Assistant. These hours must be documented on our Experience Verification Form.

Any student placed in ESL courses through the college’s ESL Assessment procedure will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum scoring in Reading 21, Listening 18, Writing 24 and Speaking 26.

Criminal background check (http://www.tri-c.edu/programs/healthcareers/background-check-information-bci.html) required.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-2331</td>
<td>Anatomy and Physiology I</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><strong>Select one of the following:</strong></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><strong>Total Credit Hours</strong></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>
<td>2</td>
</tr>
<tr>
<td>PTAT-1300</td>
<td>Functional Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>PTAT-1311</td>
<td>Fundamentals of Physical Therapy</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-1320</td>
<td>Introduction to Therapeutic Exercise</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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><strong>Select one of the following:</strong></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>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTAT-2940</td>
<td>Field Experience I</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTEC-1120</td>
<td>Critical Thinking in Healthcare</td>
<td>1</td>
</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>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTAT-2840</td>
<td>Clinical Practicum I (^1)</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2850</td>
<td>Clinical Practicum II (^1)</td>
<td>2</td>
</tr>
<tr>
<td>PTAT-2970</td>
<td>Practicum Seminar</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>63</td>
</tr>
</tbody>
</table>

\(^1\) Consecutive eight week courses.
Physician Assistant, Post-Degree Professional Certificate

The physician assistant works with the supervision of a licensed doctor of medicine or osteopathy and carries out many of the tasks previously performed only by physicians. These tasks include performing physical examinations, requesting and carrying out various laboratory and diagnostic tests, performing certain therapeutic procedures and providing patient education/ counseling. The physician assistant, as part of the physician’s team, will be able to provide patient care services in any health care setting, hospital, nursing home, office or clinic in which the physician functions professionally.

This certificate program is a dual admission program with Cleveland State University (CSU) which requires that students have completed a bachelor’s degree program prior to program entry. Eligible students will be required to also apply for admission to the Master’s of Science in Health Sciences program at CSU. The program will require that students be enrolled and take coursework simultaneously in the MSHS program at CSU. To be admitted to the program, the students must have taken courses in the following areas as part of the bachelor’s program: General Chemistry + Lab, Organic Chemistry + Lab, Microbiology (one semester), Anatomy and Physiology I, Anatomy and Physiology II, Elementary Probability/Statistics I, General Psychology (one semester) English Composition (one semester). Students who have not completed coursework in these areas as part of their bachelor’s program, may complete these courses at Tri-C prior to applying for admission to the program.

Cuyahoga Community College is no longer accepting applications for the Physician Assistant Program.

Program contact: Learn more (http://www.tri-c.edu/programs/physician-assistant)

Learn more (http://catalog.tri-c.edu/pathways/health-careers/physician-assistant) 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. Apply medical knowledge about established and evolving biomedical, clinical and cognate sciences to perform patient care by the physician assistant.

2. Provide care that is compassionate, appropriate and effective for treating health problems and promoting health by the development of a diagnostic and therapeutic plan, accurate documentation of medical records and the performance of appropriate medical and surgical skills.

3. Utilize interpersonal and communication skills that facilitate effective, empathetic and caring interactions with patients, their families and other health professionals.

4. Demonstrate a commitment of professional service, adherence to ethical principles (patient privacy and confidentiality), sensitivity to the cultural diversity of patients and maintenance of personal health and well-being.

5. Investigate and evaluate patient care practices, appraisal and assimilate scientific evidence and improve their practice of medicine by practice-based learning, self-evaluation and the development of strategies for self-improvement.

6. Demonstrate an awareness of and responsiveness to the larger context and systems of health care and the ability to call on system resources such as administrative and management skills to provide care that is of optimal value.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</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>PA-1200</td>
<td>History and Physical Exam Techniques I</td>
<td>3</td>
</tr>
<tr>
<td>PA-1240</td>
<td>Clinical Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>PA-1550</td>
<td>Physician Assistant Profession</td>
<td>1</td>
</tr>
<tr>
<td>PA-1590</td>
<td>Introduction to Clinical Medicine</td>
<td>2</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA-1210</td>
<td>History and Physical Exam Techniques II</td>
<td>3</td>
</tr>
<tr>
<td>PA-1250</td>
<td>Clinical Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>PA-1360</td>
<td>Adjuncts to Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>PA-1600</td>
<td>Clinical Medicine I</td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA-1222</td>
<td>Basic Technical and Surgical Skills II</td>
<td>2</td>
</tr>
<tr>
<td>PA-1350</td>
<td>Electrocardiography</td>
<td>1</td>
</tr>
<tr>
<td>PA-1620</td>
<td>Clinical Medicine III</td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA-1232</td>
<td>Advanced Technical &amp; Surgical Skills</td>
<td>2</td>
</tr>
<tr>
<td>PA-1370</td>
<td>Behavioral Medicine</td>
<td>2</td>
</tr>
<tr>
<td>PA-1610</td>
<td>Clinical Medicine II</td>
<td>4</td>
</tr>
<tr>
<td>PA-2302</td>
<td>Patient Management</td>
<td>2</td>
</tr>
<tr>
<td>PA-2501</td>
<td>Emergency Medicine</td>
<td>4</td>
</tr>
<tr>
<td>Graduate MSHS coursework</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA-2611</td>
<td>Preparation for Practice</td>
<td>2</td>
</tr>
<tr>
<td>PA-2942</td>
<td>Field Experience I</td>
<td>4</td>
</tr>
<tr>
<td>PA-2972</td>
<td>Field Experience Seminar I</td>
<td>1</td>
</tr>
</tbody>
</table>
Graduate MSHS coursework 3
Graduate MSHS coursework 3

Credit Hours 13

Summer Semester
PA-2952 Field Experience II 4
PA-2982 Field Experience Seminar II 1
Graduate MSHS coursework 3

Credit Hours 8

Fifth Semester
PA-2960 Field Experience III 2
Graduate MSHS coursework 3

Credit Hours 5

Total Credit Hours 95

1 See Cleveland State University Graduate Catalog for specific graduate course requirements.

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 Professional Landcare Network, 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 (http://www.tri-c.edu/programs/plant-science-and-landscape-technology)

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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/plant-science-landscape) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester (p. 52)</td>
<td></td>
<td></td>
</tr>
<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>
</tbody>
</table>
PST-xxxx  Plant Science Elective (select from below list)  2  

Select one of the following:  3  
  ENG-1010  College Composition I  
  ENG-101H  Honors College Composition I  

Credit Hours  16  

Second Semester  
PSCI-1020  Chemistry  3  
PSCI-102L  Chemistry Laboratory  1  
PST-1321  Evergreens, Groundcovers, and Herbaceous Landscape Plants  3  
PST-1420  Landscape Practices  3  
PST-xxxx  Plant Science Elective (select from below list)  3  

Select one of the following:  3  
  IT-1010  Introduction to Microcomputer Applications  
  IT-101H  Honors Introduction to Microcomputer Applications  

Credit Hours  16  

Summer Session  
PST-2950  Field Experience  3  

Third Semester  
HLTH-1230  Standard First Aid and Personal Safety  1  
PHIL-1000  Critical Thinking  3  
PST-2321  Plant Pest Diagnostics  3  
PST-2370  Introduction to Turfgrass  2  
PST-xxxx  Plant Science Elective (select from below list)  3  

Credit Hours  12  

Fourth Semester  
PST-1600  Irrigation and Drainage  2  
PST-2310  Soil Technology  3  
PST-2380  Arboriculture  2  
PST-xxxx  Plant Science Elective (select from below list)  3  
SPCH-1000  Fundamentals of Interpersonal Communication  3  

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-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>PST-1330</td>
<td>Plant Propagation</td>
<td>2</td>
</tr>
<tr>
<td>PST-1351</td>
<td>Plant Production</td>
<td>3</td>
</tr>
<tr>
<td>PST-1400</td>
<td>Garden Center and Nursery Management</td>
<td>3</td>
</tr>
</tbody>
</table>

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.  

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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/plant-science-landscape) about how certificate credits apply to the related degree.  

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Garden_Center_and_Greenhouse_Management/Gedt.html)  

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

<table>
<thead>
<tr>
<th>Course</th>
<th>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-1330</td>
<td>Plant Propagation</td>
<td>2</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applications</td>
<td></td>
</tr>
</tbody>
</table>

First Semester: 9 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>

Second Semester: 10 Credit Hours

Total Credit Hours: 21

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>Course</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-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>

First Semester: 9 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>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-1411</td>
<td>Equipment Operations and Safety</td>
<td>2</td>
</tr>
<tr>
<td>PST-1510</td>
<td>Landscape Contracting</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Semester: 9 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST-1321</td>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/plant-science-and-landscape-technology/landscape-design-short-term-certificate.html)

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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/plant-science-landscape) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Landscape_Design/Gedt.html)

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.
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>Course</th>
<th>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-1441</td>
<td>Introduction to Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>PST-1510</td>
<td>Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours 12

Second Semester

<table>
<thead>
<tr>
<th>Course</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-1321</td>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1450</td>
<td>Landscape Design - CAD</td>
<td>3</td>
</tr>
<tr>
<td>PST-2431</td>
<td>Planting Design</td>
<td>3</td>
</tr>
</tbody>
</table>

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 contact: Learn more (http://www.tri-c.edu/programs/plant-science-and-landscape-technology/landscape-horticulture-short-term-certificate.html)
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 (http://catalog.tri-c.edu/pathways/science-technology-engineering-mathematics/plant-science-landscape) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Plant_Science_and_Landscape/Gedt.html)

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<tr>
<td>PST-1311</td>
<td>Deciduous Woody Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1330</td>
<td>Plant Propagation</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CHEM-1000</td>
<td>Everyday Chemistry</td>
<td></td>
</tr>
<tr>
<td>PSCI-1020</td>
<td>Chemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>PST-1321</td>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-2310</td>
<td>Soil Technology</td>
<td>3</td>
</tr>
<tr>
<td>PST-2370</td>
<td>Introduction to Turfgrass</td>
<td>2</td>
</tr>
<tr>
<td>PST-2380</td>
<td>Arboriculture</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>19</td>
</tr>
</tbody>
</table>

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>1</td>
</tr>
<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>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>15</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-1300</td>
<td>Small Business Management</td>
<td>4</td>
</tr>
<tr>
<td>PST-1321</td>
<td>Evergreens, Groundcovers, and Herbaceous Landscape Plants</td>
<td>3</td>
</tr>
<tr>
<td>PST-1420</td>
<td>Landscape Practices</td>
<td>3</td>
</tr>
<tr>
<td>PST-1510</td>
<td>Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>PST-1600</td>
<td>Irrigation and Drainage</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

**Polysomnography (Sleep Disorders), Certificate of Proficiency**

A polysomnographic technologist is a multi-skilled professional who works under the general supervision of a physician or designee to provide comprehensive evaluation and treatment of sleep disorders. The polysomnographic technologist records and analyzes the related data, reporting their technical findings to the physician to aid in rendering a medical decision. The learning concentration of the program is geared toward the specialties of sleep, medicine, respiratory, neurology, and behavioral sciences. This program consists of on-campus didactic instruction and lab, as well as off-campus “hands-on” clinical application at our affiliated health care institutions. Degree: Students may apply credits toward the Respiratory Care or Electroneurodiagnostic program, or meet with an academic counselor to determine if credits apply toward an Associate of Technical Studies degree.

**Program contact:** Learn more (http://www.tri-c.edu/programs/health-careers/polysomnography)

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 (http://catalog.tri-c.edu/pathways/health-careers/electroneurodiagnostic-technology) and here (http://catalog.tri-c.edu/pathways/health-careers/polysomnography-sleep-disorders) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Polysomnography/Gedt.html)

**Related Degrees and Certificates**

- Electroneurodiagnostic Technology, Associate of Applied Science (p. 208)

**Program Admission Requirements**

- Applications may be submitted after meeting all requirements listed below.
- High School Diploma/GED.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- BIO-1100 Introduction to Biological Chemistry with “C” or higher or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry with “C” or higher.
- BIO-2331 Anatomy and Physiology I (or BIO-2330) with “C” or higher.
- GPA required: 2.00 admission requirements; 2.00 overall.
- Two observation visits required (see details in application packet).

**Other Information**

- 15 students accepted per year.
- Admissions requirements may be repeated only once to improve a grade below “C”.
- Accepted applicants must attend a group information session prior to Summer Session.
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) required.

**Program Learning Outcomes**

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Educate the patient on sleep and sleep disorders and explain the procedures and equipment that will be used during testing within scope of practice.
2. Apply knowledge of anatomy and physiology, neurophysiology, cardiopulmonary, sleep and basic math in order to observe, gather, analyze, and document physiological parameters before, during, and after a sleep procedure.
3. Set-up, calibrate, monitor, and trouble shoot hardware. Run sleep software to acquire accurate and artifact free data while maintaining safety.
4. Observe patients, data, and equipment to react appropriately and safely.
5. Explain general lab management procedures.
6. Meet the educational requirements for registry eligibility for the RPSGT exam.
7. Communicate verbally with members of the healthcare team and patient’s family members (or care takers when appropriate) according to established guidelines.
8. To be able to work independently as well as a member of a healthcare team; to ensure proper test and patient safety.
9. Act professionally, according to the Board Registered Polysomnographic Technical Code of Conduct and established institutional guidelines.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Start</strong></td>
<td></td>
<td></td>
</tr>
<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</td>
<td>4</td>
</tr>
<tr>
<td>END-1310</td>
<td>Cardiopulmonary Physiology of Sleep</td>
<td>3</td>
</tr>
<tr>
<td>END-1410</td>
<td>Beginning Polysomnography</td>
<td>2</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics (or higher) ²</td>
<td>3</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>BIO-2341</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>END-1421</td>
<td>Intermediate Polysomnography I</td>
<td>2</td>
</tr>
<tr>
<td>END-142L</td>
<td>Intermediate Polysomnography I - Lab</td>
<td>1</td>
</tr>
<tr>
<td>END-1934</td>
<td>Polysomnography Directed Practice I</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><strong>Second Semester</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>END-1430</td>
<td>Intermediate Polysomnography II</td>
<td>3</td>
</tr>
<tr>
<td>END-1440</td>
<td>Neurophysiology of Sleep</td>
<td>2</td>
</tr>
<tr>
<td>END-2934</td>
<td>Polysomnography Directed Practice II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</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 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 to meet the College’s math requirement for graduation through Summer 2021.

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 (http://www.tri-c.edu/programs/business-management/purchasing-supply-management-at-tri-c.html)

Learn more (http://catalog.tri-c.edu/pathways/business/purchasing-supply-management) about how certificate credits apply to the related degree.

Related Degrees and Certificates

- Business Management, Associate of Applied Business (p. 163)
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business (p. 164)
- Business Management with a Concentration in Small Business Management, Associate of Applied Business (p. 167)
- Bookkeeping, Certificate of Proficiency (p. 115)
- Payroll, Certificate of Proficiency (p. 116)
- Tax Preparation, Certificate of Proficiency (p. 117)

Related Training and Credentials

- Certificate in Applied Project Management (CAPM) (p. 333)
- Lean Six Sigma Green Belt for Health Care (p. 343)
- Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (p. 344)
- LeanOhio Boot Camp: Transforming the Public Sector (p. 345)

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>Course Code</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>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2160</td>
<td>Introduction to Purchasing</td>
<td>3</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-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td>IT-101H</td>
<td>Honors Introduction to Microcomputer Applications</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>Business Communication</td>
<td></td>
</tr>
<tr>
<td>BADM-201H</td>
<td>Honors Business Communications</td>
<td></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>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT-1340</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2610</td>
<td>Principles of Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>DEGR-xxxx</td>
<td>General Elective</td>
<td>1-3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>15-17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</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>
</tbody>
</table>

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 [here](http://www.tri-c.edu/programs/business-management/purchasing-supply-management-certificate.html)

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](http://catalog.tri-c.edu/pathways/business/purchasing-supply-management) about how certificate credits apply to the related degree.

**Gainful Employment Disclosure** [here](http://www.tri-c.edu/about/disclosure/Purchasing-Supply_Management/Gedt.html)

**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>Course</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>ACCT-1310</td>
<td>Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-1020</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2120</td>
<td>Logistics Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2160</td>
<td>Introduction to Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>ECON-2620</td>
<td>Principles of Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BADM-2110</td>
<td>Production/Operation 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-2601</td>
<td>Global Commerce and Communication</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2010</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td><strong>Select one of the following:</strong></td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>ACCT-xxxx</td>
<td>ACCT Program Elective</td>
<td></td>
</tr>
<tr>
<td>BADM-xxxx</td>
<td>BADM Program Elective</td>
<td></td>
</tr>
<tr>
<td>MARK-xxxx</td>
<td>MARK Program Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>18-19</td>
</tr>
<tr>
<td><strong>Electives (Total Credit Hours)</strong></td>
<td></td>
<td>35-36</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>ACCT-1340</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BADM-2150</td>
<td>Business Law</td>
<td>4</td>
</tr>
<tr>
<td>MARK-2020</td>
<td>Principles of Salesmanship</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>
</tbody>
</table>

### Program Admission Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following admission requirements:

- **High School Diploma/GED**
- **Complete ENG-1010 College Composition I with a “C” or higher.**
• Complete MATH-1240 Contemporary Mathematics or higher with "C" or higher. MATH-1240 or higher is a program admission requirement effective fall 2016 semester. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed their math prerequisite prior to the fall 2016 semester.

• Complete all Program Admission Requirement courses (listed in semester sequence) with "C" or higher.

• 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.

• GPA required: 2.5 admissions requirements, 2.0 overall. These GPA's reflect minimum admission requirements; students are strongly advised to strive for higher GPA's. Students achieving better grades in admission requirement courses are better prepared academically for the rigors of the program.

• Admission requirements courses may be repeated only once to improve a grade below "C."

**Other Information**

• 45-55 students accepted per year.

• There is no time limit on program 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.

• 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 (http://www.tri-c.edu/radiography) for detailed information about the program and for daytime and evening/weekend track schedules.

• Non-native speakers of English are required to have completed the TOEFL (www.ets.org) with a minimum internet-based test score (iBT) of 24 required in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program’s professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. The college offers a preparation course for the TOEFL. Preparation for, scheduling of and costs incurred for the TOEFL are the sole responsibility of the student.

• 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 (http://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, as well as all radiography 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.

• Students who are **accepted into the program as evidenced by a formal acceptance notification from the program** in the fall 2016 semester and later will NOT be required to complete PHIL-2050 Bioethics but WILL need to complete ENG-1020 College Composition II.

• Students accepted into the program prior to fall 2016 must complete PHIL-2050 and must select a 3 credit communications course to meet the AAS degree requirement. Students must select a course from the following areas: ENG, ASL, SPCH or foreign language. These students should meet with a counselor to confirm that their choice of course will meet the communications requirement.

• 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.

• 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)).

• 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 prerequisites, core and specialty courses.

• 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.

• Non-native speakers of English are required to have completed the TOEFL (www.ets.org) with a minimum internet-based test score (iBT) of 24 required in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program’s professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. The college offers a preparation course for the TOEFL. Preparation for, scheduling of, and costs incurred for the TOEFL are the sole responsibility of the student.

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**
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 for a diverse population of patients.
4. Demonstrates the ability to make decisions and use independent judgement.
5. Performs computer skills essential to the function of a radiology department.
6. Displays effective verbal/written communication skills while providing patient care.
8. Demonstrates professional ethical behavior as a radiographer.
9. Prepares to enter the profession as a Registered Radiographer committed to professional development.

Suggested Semester Sequence

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
</tr>
<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></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>PSY-1010 General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-101H Honors General Psychology</td>
<td></td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>BIO-2200 Radiobiology</td>
<td>2</td>
</tr>
<tr>
<td>RADT-1300 Fundamentals of Radiography</td>
<td>4</td>
</tr>
<tr>
<td>RADT-1400 Radiographic Positioning</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>RADT-1911 Clinical Radiography I (Option A)</td>
<td>3</td>
</tr>
<tr>
<td>RADT-191S Clinical Radiography I (Option B)</td>
<td>4</td>
</tr>
<tr>
<td>RADT-191A Clinical Radiography I-A &amp; RADT-191B and Clinical Radiography I-B (Option C)</td>
<td></td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
</tr>
<tr>
<td>RADT-1351 Image Acquisition and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>RADT-1410 Intermediate Radiographic Positioning</td>
<td>3</td>
</tr>
<tr>
<td>RADT-2401 Imaging Systems</td>
<td>2</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></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><strong>Fourth Semester</strong></td>
<td></td>
</tr>
<tr>
<td>PHYS-2250 Radiographic Physics and Quality Control</td>
<td>4</td>
</tr>
<tr>
<td>RADT-2350 Radiographic Pathology</td>
<td>3</td>
</tr>
<tr>
<td>RADT-2362 Interventional/Pharmacology</td>
<td>1</td>
</tr>
<tr>
<td><strong>Summer Completion</strong></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>RADT-2921 Clinical Radiography III (Option A)</td>
<td>3</td>
</tr>
<tr>
<td>RADT-292S Clinical Radiography III (Option B)</td>
<td>4</td>
</tr>
<tr>
<td>RADT-2921 Clinical Radiography III (Option C)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>45</td>
</tr>
</tbody>
</table>

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-1240 Contemporary Mathematics or higher is a program admission requirement effective fall 2016. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed the math requirement prior to the fall 2016 semester.
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.
Students formally accepted into the program in fall 2016 or later must take ENG-1020 College Composition II or ENG-102H Honors College Composition II. Students accepted into the program prior to fall 2016 may fulfill this requirement through a 3 credit course in one of the following areas: ENG, ASL, SPCH or foreign language. These students should meet with a counselor to confirm that their choice of course will meet the communications requirement.

**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>
<tr>
<td></td>
<td>Additional program courses</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>64</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>
<tr>
<td></td>
<td>Additional program courses</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>64</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>
<tr>
<td></td>
<td>Additional program courses</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Total Credit Hours</td>
<td>64</td>
</tr>
</tbody>
</table>

**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 modules 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.

Financial Assistance funds cannot be applied towards this program.

**Program contact:** Learn more [here](http://www.tri-c.edu/programs/health-careers/radiography/mammography-short-term-certificate-program.html)

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](http://catalog.tri-c.edu/pathways/health-careers/mammography) and [here](http://catalog.tri-c.edu/pathways/health-careers/radiography) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**

- Radiography, Associate of Applied Science (p. 310)

**Program Admission Requirements**
Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applicant must be a registered radiographer in good standing, certified by the American Registry of Radiologic Technologies (ARRT) and possess a current radiographic license through the state of Ohio.
- 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
- 10-12 students accepted per year.
- Criminal background check required (see page 73).
- 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

<table>
<thead>
<tr>
<th>Course</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>RADT-251A</td>
<td>Introduction to Mammography</td>
<td>1</td>
</tr>
<tr>
<td>RADT-251B</td>
<td>Anatomy and Pathology of the Breast</td>
<td>1</td>
</tr>
<tr>
<td>RADT-251C</td>
<td>Positioning Techniques for Breast Imaging</td>
<td>1</td>
</tr>
<tr>
<td>RADT-251D</td>
<td>Physics of Mammography</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RADT-252A</td>
<td>Sterile Technique and Interventional Procedures</td>
<td>1</td>
</tr>
<tr>
<td>RADT-252B</td>
<td>Ultrasound Breast Imaging and Registry Review</td>
<td>1</td>
</tr>
<tr>
<td>RADT-252C</td>
<td>Legal Issues and MQSA Guidelines</td>
<td>1</td>
</tr>
<tr>
<td>RADT-252D</td>
<td>Accreditation Process for Mammography</td>
<td>1</td>
</tr>
<tr>
<td>RADT-2930</td>
<td>Mammography Applications</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

1 RADT-2510 Fundamentals of Mammography would be accepted in place of RADT-251A, RADT-251B, RADT-251C, and RADT-251D.
2 RADT-2520 Advanced Procedures in Mammography will be accepted in place of RADT-252A, 252B, 252C, and 252D.

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 (http://www.tri-c.edu/programs/recording-arts-and-technology)

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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH-1.xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences requirement (p. 54)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EN1-1010</td>
<td>College Composition I</td>
<td></td>
</tr>
<tr>
<td>EN1-101H</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>MUS-1010</td>
<td>Survey of European Classical Music</td>
<td></td>
</tr>
<tr>
<td>MUS-1020</td>
<td>Survey of Jazz</td>
<td></td>
</tr>
<tr>
<td>MUS-1030</td>
<td>Survey of Rock and Roll</td>
<td></td>
</tr>
<tr>
<td>MUS-1040</td>
<td>Survey of African-American Music</td>
<td></td>
</tr>
<tr>
<td>MUS-1050</td>
<td>Survey of World Music</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EET-1130</td>
<td>Basic Audio Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1110</td>
<td>Music Business I</td>
<td>3</td>
</tr>
<tr>
<td>MUS-1130</td>
<td>MIDI Technology I</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1300</td>
<td>Introduction to Recording</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1311</td>
<td>Studio Operations</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS-2140</td>
<td>Studio Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>RAT-1320</td>
<td>Audio Transducers</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1500</td>
<td>Recording Theory I</td>
<td>3</td>
</tr>
<tr>
<td>RAT-1511</td>
<td>Recording Lab I</td>
<td>2</td>
</tr>
<tr>
<td>RAT-1530</td>
<td>Digital Audio Theory</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAT-1520</td>
<td>Audio Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2300</td>
<td>Recording Theory II</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2311</td>
<td>Recording Lab II</td>
<td>2</td>
</tr>
<tr>
<td>RAT-2330</td>
<td>Digital Audio Mixing</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2341</td>
<td>Location Recording</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Hours</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAT-2540</td>
<td>Live Sound Reinforcement</td>
<td>3</td>
</tr>
<tr>
<td>RAT-2940</td>
<td>Audio Recording Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>RAT-2990</td>
<td>Recording Arts &amp; Tech Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Communications requirement (p. 49)</td>
<td></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>64</td>
</tr>
</tbody>
</table>

**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:

Commission on Accreditation for Respiratory Care
1248 Harwood Road
Bedford, Texas 76021-4244
817-283-2835
www.coarc.com (http://www.coarc.com)
Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/respiratory-care)

Program Admission Requirements
Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I with “C” or higher.
- Complete MATH-1240 Contemporary Mathematics or higher with “C” or higher.
- 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>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 Introduction to Organic Chemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

- GPA required: 2.8 admissions requirements/core courses; 2.8 overall.
- Observation visit required (see details in application packet).

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</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.
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 (http://www.tri-c.edu/programs/health-careers/sport-and-exercise-studies)
Learn more (http://catalog.tri-c.edu/pathways/health-careers/sport-exercise-studies) 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 PSEOP 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)
- 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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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-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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<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>Select one of the following:</td>
<td>4</td>
<td></td>
</tr>
<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>
<tr>
<td>BIO-1500</td>
<td>Principles of Biology I</td>
<td></td>
</tr>
<tr>
<td>HLTH-1100</td>
<td>Personal Health Education</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</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>
<tr>
<td>Select one of the following:</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/health-careers/sport-and-exercise-studies/fitness-specialist.html)

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 (http://catalog.tri-c.edu/pathways/health-careers/sport-and-exercise-studies) 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.
- MATH-0955 Beginning Algebra or appropriate score on Math 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.

Course Title Credit

<table>
<thead>
<tr>
<th>Course</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>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></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>EMT-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>HLTH-1230</td>
<td>Standard First Aid and Personal Safety</td>
<td>3</td>
</tr>
<tr>
<td>HLTH-1310</td>
<td>Cardiopulmonary Resuscitation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>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 Preperation</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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Total Credit Hours 30

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 (http://www.tri-c.edu/programs/health-careers/sterile-processing-and-distribution)

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 (http://catalog.tri-c.edu/pathways/health-careers/surgical-technology) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Sterile_Processing_and_Distribution_Technology/Gedt.html)

Related Degrees and Certificates
• Surgical Technology, Associate of Applied Science (p. 320)

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 (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></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></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><strong>First Semester</strong></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>MATH-1100</td>
<td>Mathematical Explorations (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>SURT-1700</td>
<td>Sterile Processing Tech I</td>
<td>4</td>
</tr>
<tr>
<td>SURT-1720</td>
<td>Introduction to Hospital Administration</td>
<td>1</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIO-1050</td>
<td>Human Biology</td>
<td>1</td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT-1010</td>
<td>Introduction to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>SURT-1710</td>
<td>Sterile Processing Tech II</td>
<td>4</td>
</tr>
<tr>
<td>SURT-1861</td>
<td>Clinical Experience: Sterile Processing</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td>HTEC-1110</td>
<td>Ethics for Health Care Professionals</td>
<td></td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>30-32</td>
</tr>
</tbody>
</table>

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 (http://www.caahep.org)

Program contact: Learn more (http://www.tri-c.edu/programs/health-careers/surgical-technology)
Learn more (http://catalog.tri-c.edu/pathways/health-careers/surgical-technology) about how certificate credits apply to the related degree.

**Related Degrees and Certificates**

- Sterile Processing and Distribution Technology, Certificate of Proficiency (p. 319)

**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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-1020</td>
<td>Medical Terminology I</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>SURT-1000</td>
<td>Survey of Surgical Technology</td>
<td>1</td>
</tr>
</tbody>
</table>

- Time limit on admissions requirements prior to application is seven years (see below).
- GPA required: 2.5 admissions requirements; 2.5 overall.

To be eligible to enroll in BIO-2331 Anatomy and Physiology I students must either achieve the appropriate placement score on Biology placement test or complete BIO-1100 Introduction to Biological Chemistry with "C" or higher or complete BIO-1500 Principles of Biology I 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.

**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 are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing 23, and Speaking 24.
- Criminal background check (http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html) 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>Course</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>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>SURT-1000</td>
<td>Survey of Surgical Technology</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>
</tbody>
</table>

**Program Admissions Requirements Semester**

<table>
<thead>
<tr>
<th>Course</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>MA-1020</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>SURT-1000</td>
<td>Survey of Surgical Technology</td>
<td>1</td>
</tr>
</tbody>
</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>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>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</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>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>
</tbody>
</table>

**Summer Session**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURT-1921</td>
<td>Clinical Experience II</td>
<td>2</td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</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>
</tbody>
</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL-2050</td>
<td>Bioethics</td>
<td>3</td>
</tr>
<tr>
<td>SURT-2862</td>
<td>Clinical Experience IV</td>
<td>4</td>
</tr>
</tbody>
</table>
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 (http://www.tri-c.edu/programs/health-careers/veterinary-technology)

Program Admissions Requirements

Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I or higher with a "C" or higher.
- Complete MATH-1240 Contemporary Mathematics or higher with a "C" or higher.
- Complete BIO-1100 Introduction to Biological Chemistry or CHEM-1010 Introduction to Inorganic Chemistry or higher with a "C" or higher.
- Complete VT-1120 Introduction to Veterinary Technology with a "C" or higher.
- GPA required: 2.75 in core courses (prerequisites), 2.5 overall.
- Written verification of 10 hours of recent (within one calendar year prior to Program application) observation/shadowing or employment in a veterinary facility.
- Core 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.

Other Information

- 25 students per year are accepted into the program.

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
</tr>
</tbody>
</table>

Credit Hours: 10
Total Credit Hours: 61

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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Admissions Requirements Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-1100</td>
<td>Introduction to Biological Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1240</td>
<td>Contemporary Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>VT-1120</td>
<td>Introduction to Veterinary Technology</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>
</tr>
</tbody>
</table>

Credit Hours: 11

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1410</td>
<td>Anatomy &amp; Physiology of Domestic Animals I</td>
<td>4</td>
</tr>
<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>
</tr>
<tr>
<td>VT-1521</td>
<td>Veterinary Pathology I</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours: 12

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1420</td>
<td>Anatomy &amp; Physiology of Domestic Animals II</td>
<td>3</td>
</tr>
<tr>
<td>VT-1410</td>
<td>Veterinary Science II</td>
<td>3</td>
</tr>
<tr>
<td>VT-1530</td>
<td>Veterinary Pathology II</td>
<td>2</td>
</tr>
<tr>
<td>VT-1600</td>
<td>Veterinary Surgical Nursing and Assisting</td>
<td>3</td>
</tr>
<tr>
<td>VT-1700</td>
<td>Veterinary Diagnostic Imaging</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours: 14
Summer Session
VT-2200 Dentistry for Veterinary Technicians 1
VT-2300 Pharmacology for Veterinary Technicians 2
VT-2402 Veterinary Pathology III 2
VT-2851 Veterinary Practicum and Seminar I 1
Credit Hours 6
Third Semester
VT-2412 Veterinary Pathology IV 2
VT-2520 Animal Health and Disease 3
VT-2610 Veterinary Anesthesia, Anesthesia, & Dental Techniques 3
VT-2860 Veterinary Practicum and Seminar II 2
Select one of the following: 3
SPCH-1000 Fundamentals of Interpersonal Communication
SPCH-1010 Fundamentals of Speech Communication
SPCH-101H Honors Fundamentals of Speech Communication
Credit Hours 13
Fourth Semester
VT-2650 Veterinary Emergency and Critical Care 1
VT-2700 Avian and Exotic Animal Medicine 2
VT-2940 Veterinary Field Experience 2
Arts and Humanities/Social and Behavioral Science requirement (p. 52) 3
Credit Hours 8
Total Credit Hours 64

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 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 (http://www.tri-c.edu/programs/visual-communications/graphic-design)

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 (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-graphic-design) 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

<table>
<thead>
<tr>
<th>Course</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>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</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-1200</td>
<td>Typography and Layout</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Humanities (p. 45)</td>
<td></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><strong>Credit Hours</strong></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

| **Second Semester** |                                             |              |
| ART-1050 | Drawing I                                  | 3            |
| MATH-1xxx | 1000-level MATH course or higher (p. 44) | 3            |
| VC&D-1430 | 2D Design                                 | 3            |
| VCGD-1500 | Advertising and Design                     | 3            |
| Communications requirement (p. 43) |                                             | 3            |
| **Credit Hours** |                                             | 15           |

| **Third Semester** |                                             |              |
| VC&D-2301 | Graphic Design and Illustration             | 3            |
| VCGD-2231 | Publication Design                          | 3            |
| VCGD-2331 | Brand Identity Design                       | 3            |
| VCXX-xxxx | Visual Communication & Design elective      | 3            |
| Social and Behavioral Sciences requirement (p. 47) |                                             | 3            |
| **Credit Hours** |                                             | 15           |

| **Fourth Semester** |                                             |              |
| VC&D-2701 | Media Design                               | 3            |
| VC&D-2991 | Portfolio Preparation                       | 3            |
| VCGD-2431 | Package Design                             | 3            |
| Select one of the following: |                                             |              |
| VCAD-2621 | Advertising Studio I                        | 3            |
| VCGD-2631 | Graphic Design Studio                      | 3            |
| **Credit Hours** |                                             | 12           |
| **Total Credit Hours** |                                             | 60           |
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>Course</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>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</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-1200</td>
<td>Typography and Layout</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1430</td>
<td>2D Design</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></td>
<td><strong>Credit Hours</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
<td></td>
</tr>
<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>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>VC&amp;D-2701</td>
<td>Media Design</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>VCGD-2231</td>
<td>Publication Design</td>
<td></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></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

### 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 (http://www.tri-c.edu/programs/visual-communications/illustration) 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 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

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-1050</td>
<td>Drawing I</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></td>
</tr>
<tr>
<td>ART-1081</td>
<td>2D Design and Color</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1141</td>
<td>Rendering Techniques</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher (p. 44)</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1430</td>
<td>2D Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ART-xxxx</td>
<td>Art Elective</td>
<td>3</td>
</tr>
<tr>
<td>VCXX-xxxx</td>
<td>Visual Communications elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication Requirements (p. 43)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</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>VC&amp;D-2301</td>
<td>Graphic Design and Illustration</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2040</td>
<td>3D Motion</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2141</td>
<td>Illustration Techniques</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>VCIM-2270</td>
<td>Animation for the Web and Media</td>
<td></td>
</tr>
<tr>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts and Humanities Requirements (p. 45)</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>VCIL-2341</td>
<td>Illustration for Story</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2440</td>
<td>3D Simulation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>VCIL-2540</td>
<td>3D Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2641</td>
<td>Illustration Studio</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ART-xxxx</td>
<td>Art Elective</td>
<td>3</td>
</tr>
<tr>
<td>MARS-xxxx</td>
<td>MARS elective</td>
<td>3</td>
</tr>
<tr>
<td>VCXX-xxxx</td>
<td>Visual Communications elective</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Science/Natural Science Requirement (p. 47)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### 3D Animation, Short-Term Certificate

Students who participate in the certificate sequence will develop knowledge, skills and abilities in 3D Animation techniques to prepare for professional and academic opportunities in Visual Communication and Design or related fields with emphasis in 3D Modeling, Animation, Illustration and Visualization.

This certificate is intended for students with no previous design experience or students interested in an immersive exploration of 3D Animation. Credits can apply to associate degrees in Visual Communication and Design.

**Program contact:** Learn more (http://www.tri-c.edu/programs/visual-communications/illustration/3d-animation-illustration)

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 (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-illustration) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/3D_Animation/Gedt.html)

### 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. Compose/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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</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>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-2701</td>
<td>Media Design</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-2540</td>
<td>3D Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2270</td>
<td>Animation for the Web and Media</td>
<td>3</td>
</tr>
<tr>
<td>VCXX-xxxx</td>
<td>Visual Communication &amp; Design Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

### 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 (http://www.tri-c.edu/programs/creative-arts/visual-communications/illustration/3d-design-illustration)

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 (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-illustration) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/3D_Design/Gedt.html)

### 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.

### 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 (http://www.tri-c.edu/programs/visual-communications/photography)

Learn more (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-photography) 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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1150</td>
<td>History of Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1261</td>
<td>Photography 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>Second Semester</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>MATH-1xx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-1450</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2260</td>
<td>Photography II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2050</td>
<td>Commercial Studio Techniques I</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC-1010</td>
<td>Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>SOC-101H</td>
<td>Honors Introductory Sociology</td>
<td></td>
</tr>
<tr>
<td>Third Semester</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1200</td>
<td>Typography and Layout</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2160</td>
<td>Digital Video for Photographers ¹</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2450</td>
<td>Digital Imaging II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2550</td>
<td>Commercial Studio Techniques II</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2660</td>
<td>Photography III</td>
<td>3</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPCH-1000</td>
<td>Fundamentals of Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-1010</td>
<td>Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>SPCH-101H</td>
<td>Honors Fundamentals of Speech Communication</td>
<td></td>
</tr>
<tr>
<td>JMC-1310</td>
<td>Film Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2530</td>
<td>Professional Practices in Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2541</td>
<td>Individual Projects - Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2760</td>
<td>Editorial Photography</td>
<td>3</td>
</tr>
<tr>
<td>VCPH-2990</td>
<td>Photographic Portfolio Preparation</td>
<td>2</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>62</td>
<td></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 (http://www.tri-c.edu/programs/visual-communications/web-and-interactive-media)

Learn more (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-web-and-interactive-media) 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
• Complete VC&D-1015 Digital Studio Basics

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.

<table>
<thead>
<tr>
<th>Suggested Semester Sequence</th>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>ENG-1010</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH-1xxx</td>
<td>1000-level MATH course or higher</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VCIM-1200</td>
<td>Game Design I: Introduction to Game Design (Option B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCIM-1570</td>
<td>Web Publishing I: HTML (Option A)</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>VC&amp;D-1200</td>
<td>Typography and Layout</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VC&amp;D-1430</td>
<td>2D Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communications requirement (p. 43)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCIM-1970</td>
<td>Midpoint Portfolio Review</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>VCIM-1400</td>
<td>Game Design II: Game Engines (Option B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCIM-1770</td>
<td>Web Publishing II: Site Theory &amp; Construction (Option A)</td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td>VC&amp;D-2530</td>
<td>Professional Practice in Visual Communication and Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VCIM-2270</td>
<td>Animation for the Web and Media</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>VCIM-2371</td>
<td>Interactive Media I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Arts &amp; Humanities (p. 45)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VCIM-2200</td>
<td>Game Design III: Game Design Studio (Option B)</td>
<td></td>
</tr>
</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>
<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-2280</td>
<td>Web Publishing III: Media Rich Websites</td>
<td>3</td>
</tr>
<tr>
<td>Additional program courses</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>61</td>
<td></td>
</tr>
</tbody>
</table>

**B** Technical Electives for Game Designer

Game Designer: Helps students learn 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>
</tr>
</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>
<tr>
<td>Additional program courses</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>61</td>
<td></td>
</tr>
</tbody>
</table>

### Electives

**Web Design & Construction**

The following courses are recommended electives for students pursing Web Design & Construction:

<table>
<thead>
<tr>
<th>Code</th>
<th>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>
</tbody>
</table>

### 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 (http://www.tri-c.edu/programs/visual-communications/game-design-certificate)

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 (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-web-and-interactive-media) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Game_Design/Gedt.html)
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>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1640</td>
<td>3D Design</td>
<td>3</td>
</tr>
<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-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>
</tbody>
</table>

Total Credit Hours 12

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCIL-2040</td>
<td>3D Motion</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-2270</td>
<td>Animation for the Web and Media</td>
<td>3</td>
</tr>
<tr>
<td>VCIM-2401</td>
<td>Game Design IV-Game Publishing</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1000</td>
<td>Visual Communication Foundation</td>
<td>3</td>
</tr>
<tr>
<td>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>

Select one of the following: 3

Web Design & Development, Certificate of Proficiency

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 (http://www.tri-c.edu/programs/creative-arts/visual-communications/web-and-interactive-media/web-design-and-development-certificate.html)

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 (http://catalog.tri-c.edu/pathways/creative-arts/visual-communication-design-web-and-interactive-media) about how certificate credits apply to the related degree.

Gainful Employment Disclosure (http://www.tri-c.edu/about/disclosure/Web_Design_and_Development/Gedt.html)

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
• Complete VC&D-1015 Digital Studio Basics

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

<table>
<thead>
<tr>
<th>Course</th>
<th>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>VC&amp;D-1015</td>
<td>Digital Studio Basics</td>
<td>3</td>
</tr>
<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>
</tbody>
</table>

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-2270</td>
<td>Animation for the Web and Media</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-1430</td>
<td>2D Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</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>VC&amp;D-1200</td>
<td>Typography and Layout</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>VC&amp;D-2701</td>
<td>Media Design</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>VCIM-2280</td>
<td>Web Publishing III: Media Rich Websites</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>VCIM-2290</td>
<td>Web Publishing IV: Data Driven Sites</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Select one of the following:</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>VCIM-2071</td>
<td>Service-Learning Web and Interactive Studio</td>
<td></td>
</tr>
<tr>
<td>VC&amp;D-2991</td>
<td>Portfolio Preparation</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Total Credit Hours**

| Credit Hours | **30** |
PROFESSIONAL DEVELOPMENT

- Event Planning (Professional Development Programs)
- ISO Standards and Certified Training (Professional Development Programs)
- Lean Six Sigma (Professional Development Programs)
- Online Training
- Organizational Effectiveness (Professional Development Programs)
- Professions (Professional Development Programs)

Budgeting Certificate

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
Take the following two courses to complete the certificate:

<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</td>
<td></td>
</tr>
<tr>
<td>ZFIN-1048</td>
<td>Budgeting and Forecasting</td>
<td></td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/accounting-finance-and-tax) 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 216-987-0272.

Upon completion students receive
Certificate of Completion for each course as well as a Program Certificate

Related Programs/Training
- Accounting
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Organizational Effectiveness (Professional Development Programs) (http://catalog.tri-c.edu/pathways/professional-development/organizational-effectiveness)

To Register for and Learn more about Budgeting Certificate (http://www.tri-c.edu/corporatecollege/professional-development/accounting-finance-and-tax).

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 (http://www.tri-c.edu/corporatecollege/courses/course-5511.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Information Technology (Workforce Training Institute) (http://catalog.tri-c.edu/pathways/workforce-training/information-technology)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Business (p. 107)

To Register for and Learn more about the Certificate in Applied Project Management (CAPM) (http://www.tri-c.edu/programs/information-technology/professional-development/project-management)

Certified Manager of Apartments

Program description
Northeast Ohio Apartment Association (NOAA) is committed to providing quality properties and services of the highest professional standards. To further this mission, Corporate College®, a division of Cuyahoga Community College, and NOAA have partnered on a certification program to enhance the knowledge and skills of apartment managers in Northeast Ohio.

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
- 8-12 week paid internship or employment 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

Visit the Corporate College website here (http://www.tri-c.edu/workforce/cisco/network-support-technician.html) 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 216-987-0272.

Upon completion students receive

- Cisco Certified Network Associate (CCNA)
- Cisco Certified Network Associate (CCNA Wireless)

Related Programs/Training

- Certified Network Associate (CCNA) (http://www.tri-c.edu/workforce/cisco/certified-network-associate.html)

To Register for and Learn more about Network Support Technician (http://www.tri-c.edu/workforce/cisco/network-support-technician.html)

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 (SPNGN1)
- 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 (DICT)

Cisco Certified Network Associate Industrial

- Managing Industrial Networks for Manufacturing with Cisco Technologies (200-601 IMINS2)
- 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 (SENSS)
- 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 216-987-0272.

Learn more here (http://catalog.tri-c.edu/pathways/information-technology/cisco-technical-institute-workforce-training) about how certificate credits apply to the related degree.

To Register for and Learn more about CISCO Technical Training Institute (http://www.tri-c.edu/workforce/cisco)

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

Upcoming dates:

- June 12, 2017 – September 29, 2017

Program cost

Grant funded

Visit the Corporate College website here (http://www.tri-c.edu/programs/information-technology/cleveland-codes) 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 216-987-0272.
Upon completion students receive
Certificate of Completion

Related Programs/Training

- Information Technology (Programming and Development) (http://catalog.tri-c.edu/pathways/business/information-technology-programming-development)
- Advanced Web Design with JavaScript (http://www.tri-c.edu/corporatecollege/courses/course-3280.html)
- Digital Marketing Bootcamp (http://www.tri-c.edu/corporatecollege/courses/course-8060.html)

To Register for and Learn more about Cleveland Codes Tri-C Software Developers Academy (http://www.tri-c.edu/programs/information-technology/cleveland-codes)

Community Health Worker

Program description
The Community Health Worker (CHW) serves as a bridge between the community and the health care, government and social service systems.

Job scope includes:
- Provide clients with the psychosocial support needed to cope with chronic, acute, or terminal illnesses.
- Advocate for clients or patients to resolve crises.
- Collaborate with other professionals to evaluate patients’ medical or physical condition and to assess client needs.
- Refer patient, client, or family to community resources to assist in recovery from illness and to provide access to services such as financial assistance, legal aid, housing, job placement or education.

Other important information
The CHW student must complete 100 hours of classroom training and 130 hours of field service. A successful background check is required. A completed application along with a $35 fee will be forwarded to The Ohio Board of Nursing for certification.

The classroom training is offered in the evening and the vast majority of the field service opportunities are during the day hours. Please contact the office for further details at 216-987-2925.

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/workforce/courses/course-7751.html) 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 216-987-0272.

Upon completion students receive
- Tri-C Certificate of Completion
- Ohio Board of Nursing Certificate as Community Health Worker
- American Heart Association BLS CPR for Health Care Providers

Related Programs/Training

- Nursing (http://catalog.tri-c.edu/pathways/health-careers/nursing)
- Practical Nursing (http://catalog.tri-c.edu/pathways/health-careers/practical-nursing)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)

To Register for and Learn more about Community Health Worker (http://www.tri-c.edu/workforce/health-care-training/community-health-worker.html)

Comprehensive Certified Professional Medical Coder (CPC)

Program description
Professional Medical Coders are an important component of the medical billing process, and the healthcare team. Every time a patient receives care in a physician practice, hospital outpatient facility, or ambulatory surgical center the provider must document what services were performed.

The Professional Medical Coder reviews the documentation in the medical record to determine the work that was done and assigns codes (CPT codes, ICD-10 codes, and HCPCS codes) so that the medical claims can be submitted for reimbursement. This comprehensive program utilizes the American Academy of Professional Coders Curriculum (AAPC), and is designed to prepare individuals to take the Certified Professional Coder examination. Job shadowing experience placement is contingent upon local employer needs.

Other important information
Students are given access to the AAPC online Practicode tool which provides authentic coding case studies and exercises to develop coding skills.
Classroom based courses are offered both day and evening.

An online course is also available for experienced healthcare professionals.

**Program cost**

Visit the Corporate College website here (http://www.tri-c.edu/workforce/health-care-training/medical-coding.html) for pricing.

Cost includes all text materials, CPC exam fees and Student AAPC Membership.

Background check is not included in price.

**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 216-987-0272.

**Upon completion students receive**

- Tri-C Certificate of Completion
- Eligibility to sit for the AAPC CPC (Certified Professional Coder) exam

**Related Programs/Training**

- Health Information Management Technology (http://catalog.tri-c.edu/pathways/health-careers/health-information-management-technology)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)
- Patient-Access Specialist Program (p. 346)
- Comprehensive Certified Professional Medical Coder - Online (p. 338)

To Register for and Learn more about Comprehensive Certified Professional Medical Coder (CPC) (http://www.tri-c.edu/workforce/health-care-training/medical-coding.html)

The Professional Medical Coder reviews the documentation in the medical record to determine the work that was done and assigns codes (CPT codes, ICD-10 codes, and HCPCS codes) so that the medical claims can be submitted for reimbursement. This comprehensive online program utilizes the American Academy of Professional Coders Curriculum (AAPC), and is designed to prepare individuals to take the Certified Professional Coder examination. Job shadowing experience placement is contingent upon local employer needs.

**Other important information**

This is an online course with AAPC Distance Learning program. This course is recommended for those that have previous medical billing and coding experience.

Students are given access to the AAPC online Practicode tool which provides authentic coding case studies and exercises to develop coding skills. 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 (http://www.tri-c.edu/workforce/courses/course-7293.html) for pricing.

Cost includes all text materials, CPC exam fees and Student AAPC Membership.

Background check is not included in price.

**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 216-987-0272.

**Upon completion students receive**

- Tri-C Certificate of Completion
- Eligibility to sit for the AAPC CPC (Certified Professional Coder) exam

**Related Programs/Training**

- Health Information Management Technology (http://catalog.tri-c.edu/pathways/health-careers/health-information-management-technology)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)
- Patient-Access Specialist Program (p. 346)
- Comprehensive Certified Professional Medical Coder Program - Classroom (p. 337)

To Register for and Learn more about Comprehensive Certified Professional Medical Coding – Online (http://www.tri-c.edu/workforce/health-care-training/medical-coding.html)

**Program description**

Professional Medical Coders are an important component of the medical billing process, and the healthcare team. Every time a patient receives care in a physician practice, hospital outpatient facility, or ambulatory surgical center the provider must document what services were performed.
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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZACM-1010</td>
<td>CompTIA™ IT Fundamentals</td>
<td></td>
</tr>
<tr>
<td>ZACM-1011</td>
<td>CompTIA™ A+ Course Part 1</td>
<td></td>
</tr>
<tr>
<td>ZACM-1012</td>
<td>CompTIA™ A+ Course Part 2</td>
<td></td>
</tr>
<tr>
<td>ZACM-1009</td>
<td>CompTIA™ A+ Certification Exam Prep</td>
<td></td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/comptia-a-certification.html) for pricing.

Financial aid eligibility
This program is not Pell Eligible.

Upon completion students receive
Certificate of Completion

Related Programs/Training
- Information Technology (p. 111)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Business (p. 107)

To Register for and Learn more about CompTIA Certified Computer Support Specialist (http://www.tri-c.edu/programs/information-technology/professional-development/comptia-a-certification.html)

Enrolled Agent

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).
- EA’s require 72 hours of continuing education every two years.
- Exam fees are ~$115 per part. You must register and schedule your exam with Prometrics directly.

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/accounting-finance-and-tax) 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 216-987-0272.

Upon completion students receive  
Certificate of Completion

Related Programs/Training

- Accounting

To Register for and Learn more about Enrolled Agent

Event Planning

Program description

The Event and Meeting Planning industry is expected to grow 38.4% in Northeast Ohio, according to the Ohio Department of Job and Family Services, from now until 2020 and it is in the top 10 fastest growing industries in Northeast Ohio. With the recent launch of casinos, new hotels, new restaurants and venues, event planning is the education to have in Northeast Ohio.

The program is designed to:

- Educate participants in the fundamentals and practical knowledge of event and meeting planning
- Provide you with the skills necessary for developing, planning, marketing and executing a successful event
- Explain how to advance your event planning career

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 event planners and resources in the area.

Program Cost

Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/courses/course-7045.html) 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 216-987-0272.

Upon completion students receive  
Certificate of Completion

Related Programs/Training


To Register for and Learn more about Event Planning (http://www.tri-c.edu/corporatecollege/professional-development/event-planning)


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 (http://www.tri-c.edu/corporatecollege/courses/course-6505.html) 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 216-987-0272.

Upon completion students receive  
Certificate of Completion
Related Programs/Training

- Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Exemplar Global Certified/Plexus ISO 9001:2015 Internal Auditor Training with IATF 16949:2016 Automotive Emphasis (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/courses/course-4536.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training

- Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Exemplar Global Certified/Plexus ISO 9001: 2015 Lead Auditor Training (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)

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.

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®.
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 (http://www.tri-c.edu/corporatecollege/courses/course-6504.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training
• ISO Standards and Certified Training (Professional Development Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/iso-standards-certified-training)
• Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
• Business Management (Human Resources Management) (http://catalog.tri-c.edu/pathways/business/business-management-human-resources)
• Business Management (International Business) (http://catalog.tri-c.edu/pathways/business/business-management-international)
• Business Management (Small Business Management) (http://catalog.tri-c.edu/pathways/business/business-management-small-business)
• Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Exemplar Global Certified/Plexus: ISO 9001 Understanding and Internal Auditor Training (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)
Home Inspector Training

Program description
This one of a kind course is designed to provide a six day training boot camp that teaches the proper process of a Home Inspection and small business practices. 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 present on how to gain referrals and market to broker and real estate offices. Hands on field training, along with learning to get clients and make more money are the building blocks that differentiate this training boot camps from other courses.

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/all-american-training-institute.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training:
• Certified Manager of Apartment (p. 334)

To Register for and Learn more about Home Inspector Training (http://www.tri-c.edu/corporatecollege/professional-development/all-american-training-institute.html)

Lean Six Sigma for Health Care: Yellow Belt and Green Belt

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.
• We have two course options for LSS:
  • Blended-learning: These have a portion online and a portion where you have to attend in-person/classroom at one of our campus locations.
  • Virtual Online: These are entirely online with mandatory 1.5 or 2.5 hour “virtual online” sessions where you have to log into the computer on specific dates and times.
• Participants are required to complete all assigned course modules with an 80% or better and utilize project coaching hours (when applicable) within 30 days after the last classroom section. Exam completion and course projects must be accomplished within 60 days of the last classroom section.
• Participants will need to have a laptop for in-class Green Belt sessions.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLSS-1073</td>
<td>Lean Six Sigma Yellow Belt for Healthcare</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1027</td>
<td>Lean Six Sigma GREEN BELT for HealthCare Comprehensive</td>
<td></td>
</tr>
</tbody>
</table>

Virtual Online Sessions (completely online with mandatory virtual sessions on specific dates and times):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLSS-1082</td>
<td>Lean Six Sigma YELLOW BELT for Healthcare (Virtual Online)</td>
</tr>
<tr>
<td>ZLSS-1083</td>
<td>Lean Six Sigma GREEN BELT for Healthcare (Virtual Online)</td>
</tr>
</tbody>
</table>
Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/quality/lean-six-sigma) 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 216-987-0272.

Upon completion students receive
Certificate of Completion/Lean Six Sigma Belt Certification

Related Programs/Training
• Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/professional-development/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
• Business Management (Human Resources Management) (http://catalog.tri-c.edu/pathways/business/business-management-human-resources)
• Business Management (International Business) (http://catalog.tri-c.edu/pathways/business/business-management-international)
• Business Management (Small Business Management) (http://catalog.tri-c.edu/pathways/business/business-management-small-business)
• Nursing (http://catalog.tri-c.edu/pathways/health-careers/nursing)
• Practical Nursing (http://catalog.tri-c.edu/pathways/health-careers/practical-nursing)
• Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)
• Health Careers (p. 108)

To Register for and Learn more about Lean Six Sigma for Health Care (http://www.tri-c.edu/corporatecollege/professional-development/quality/lean-six-sigma)

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
• Participants will need to have a laptop for in-class green and black belt sessions.
• LSS belts are progressive. Participants must complete a yellow belt before moving to green belt, and a green belt before moving to black belt.
• We have two course options for LSS:
  • Blended-learning: These have a portion online and a portion where you have to attend in-person/classroom at one of our campus locations.
  • Virtual Online: These are entirely online with mandatory 1.5 or 2.5 hour “virtual online” sessions where you have to log into the computer on specific dates and times.
• Participants are required to complete all assigned course modules with an 80% or better and utilize project coaching hours (when applicable) within 30 days after the last classroom section. Exam completion and course projects must be accomplished within 60 days of the last classroom section.
• Participants will need to have a laptop for in-class Green Belt and Black Belt sessions.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLSS-1032</td>
<td>Lean Six Sigma: YELLOW BELT</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1033</td>
<td>Lean Six Sigma: Yellow Belt to GREEN BELT</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1003</td>
<td>Lean Six Sigma: Green Belt to BLACK BELT</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1074</td>
<td>YELLOW BELT (Virtual Online)</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1049</td>
<td>Lean Six Sigma - GREEN BELT (Virtual Online)</td>
<td></td>
</tr>
<tr>
<td>ZLSS-1067</td>
<td>Lean Six Sigma Green Belt to BLACK BELT (Virtual Online)</td>
<td></td>
</tr>
</tbody>
</table>

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/corporatecollege/professional-development/quality/lean-six-sigma) 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 216-987-0272.

Upon completion students receive
Certificate of Completion/Lean Six Sigma Belt Certification

Related Programs/Training
• Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/professional-development/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
• Business Management (Human Resources Management) (http://catalog.tri-c.edu/pathways/business/business-management-human-resources)
• Business Management (International Business) (http://catalog.tri-c.edu/pathways/business/business-management-international)
• Business Management (Small Business Management) (http://catalog.tri-c.edu/pathways/business/business-management-small-business)
• Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Lean Six Sigma: Yellow Belt, Green Belt, Black Belt (http://www.tri-c.edu/corporatecollege/professional-development/quality/lean-six-sigma)

LeanOhio Boot Camp: Transforming the Public Sector

Program description
LeanOhio Boot Camp is an intensive, 4-day long training that gets people learning and using Lean methods and tools. 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 (http://www.tri-c.edu/corporatecollege/courses/course-8090.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training
• Lean Six Sigma (http://catalog.tri-c.edu/pathways/professional-development/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)

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 description

The Comprehensive Patient Access Specialist Program is a fast-track program designed to prepare individuals for multiple entry-level opportunities available in the inpatient healthcare setting. The Patient Access Specialist role includes providing medical office support for a physicians practice, hospital clinic or outpatient department. Tasks and responsibilities may involve patient registration, admission/discharge procedures, insurance verification, patient billing, scheduling, financial counseling and customer service to patients and family members.

Program cost

Visit the Corporate College website here (http://www.tri-c.edu/workforce/courses/course-8063.html) 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 216-987-0272.

Upon completion students receive

- Tri-C Certificate of Completion
- Eligibility to sit for the Certified Healthcare Access Associate (CHAA) exam through the National Association of Healthcare Access Management (NAHAM)

Related Programs/Training

- Information Technology (Workforce Training Institute) (http://catalog.tri-c.edu/pathways/workforce-training/information-technology)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management/#text)
- CompTIA IT Fundamentals (p. 339)
- Keyboarding and Communication Intensive (http://www.tri-c.edu/workforce/courses/course-8225.html)

To Register for and Learn more about the Microsoft Administrative Professional (MAP) Academy (http://www.tri-c.edu/programs/information-technology/professional-development/microsoft-training/microsoft-administrative-professional-map-academy.html)
Upon completion students receive

- Tri-C Certificate of Completion
- American Heart Association BLS CPR for Health Care Providers

Related Programs/Training

- Nursing (http://catalog.tri-c.edu/pathways/health-careers/nursing)
- Practical Nursing (http://catalog.tri-c.edu/pathways/health-careers/practical-nursing)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)
- State-Tested Nursing Assistant

To Register for and Learn more about Patient-Care Nursing Assistant (http://www.tri-c.edu/workforce/health-care-training/patient-access.html)

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 (http://www.tri-c.edu/corporatecollege/courses/course-6506.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training

- Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
- Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Plexus AS9100D Understanding and Internal Auditing (Aerospace) (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)

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 (http://www.tri-c.edu/corporatecollege/courses/course-2987.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training
• ISO Standards and Certified Training (Professional Development Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/iso-standards-certified-training)
• Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
• Business Management (Human Resources Management) (http://catalog.tri-c.edu/pathways/business/business-management-human-resources)
• Business Management (International Business) (http://catalog.tri-c.edu/pathways/business/business-management-international)
• Business Management (Small Business Management) (http://catalog.tri-c.edu/pathways/business/business-management-small-business)
• Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Plexus Understanding and Internal Auditing for ISO 14001 (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)

Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditor

Program description
ISO 13485 specifies requirements for a quality management system where an organization needs to demonstrate its ability to provide medical devices and related services that consistently meet customer requirements 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 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 (http://www.tri-c.edu/corporatecollege/courses/course-7048.html) 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 216-987-0272.

Upon completion students receive
Certificate of Completion

Related Programs/Training
• ISO Standards and Certified Training (Professional Development Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/iso-standards-certified-training)
• Lean/Lean Six Sigma (http://catalog.tri-c.edu/pathways/business/lean-six-sigma)
• Business Management (http://catalog.tri-c.edu/pathways/business/business-management)
• Business Management (Human Resources Management) (http://catalog.tri-c.edu/pathways/business/business-management-human-resources)
• Business Management (International Business) (http://catalog.tri-c.edu/pathways/business/business-management-international)
• Business Management (Small Business Management) (http://catalog.tri-c.edu/pathways/business/business-management-small-business)
• Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)

To Register for and Learn more about Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditing (http://www.tri-c.edu/corporatecollege/professional-development/quality/iso-standards)
State-Tested Nurse Aide

Program description
If you are a caring individual who enjoys helping people, the STNA position is for you. STNA’s work in a variety of health care settings to improve their patients’ well-being by assisting them with personal care and monitoring progress with their recovery goals. STNAs work as Care Partners, Patient Care Assistants, Caregivers, Clinical Assistants, Home Health Aides, Resident Assistants and more.

Other important information
Class registration may close 7 days prior to start of classes.
Prior to entering the program, all students must show proof of the following:

- Background Check
- BCI Fingerprinting
- Two step TB test
- Flu vaccine during flu season

Contact the office at 216-987-2925 for further details and to arrange a STNA packet pick up.

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/workforce/courses/course-232.html) for pricing.

All text materials included. State competency exam cost is included. Background check is not included in cost.

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 216-987-0272.

Upon completion students receive
- Job Readiness/Professionalism
- American Heart Association BLS CPR for Health Care Providers
- Clinical experience (16 hours)
- Skills Test Review Sessions/ State Exam Preparation
- Graduation Ceremony
- Tri-C Certification of Completion
- Certificate from the State of Ohio
- Eligibility to take the Ohio Department of Health Nurse Aide Competency Exam for certification

Related Programs/Training
- Nursing (http://catalog.tri-c.edu/pathways/health-careers/nursing)
- Practical Nursing (http://catalog.tri-c.edu/pathways/health-careers/practical-nursing)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)

To Register for and Learn more about State-Tested Nurses Aide (http://www.tri-c.edu/workforce/health-care-training/stna.html)

State-Tested Nurse Aide – Accelerated Program

Program description
If you are a caring individual who enjoys helping people, the STNA position is for you. STNA’s work in a variety of health care settings to improve their patients’ well-being by assisting them with personal care and monitoring progress with their recovery goals. STNAs work as Care Partners, Patient Care Assistants, Caregivers, Clinical Assistants, Home Health Aides, Resident Assistants and more.

Other important information
This is an Accelerated (Fast-Paced) Program.
Class registration may close 7 days prior to start of classes.
Prior to entering the program, all students must show proof of the following:

- Background Check
- BCI Fingerprinting
- Two step TB test
- Flu vaccine during flu season

Contact the office at 216-987-2925 for further details and to arrange a STNA packet pick up.

Program cost
Visit the Corporate College website here (http://www.tri-c.edu/workforce/courses/course-6929.html) 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 216-987-0272.

Upon completion students receive
- Job Readiness/Professionalism
- American Heart Association BLS CPR for Health Care Providers
- Clinical experience (16 hours)
- Skills Test Review Sessions/ State Exam Preparation
- Graduation Ceremony
- Tri-C Certification of Completion
- Certificate from the State of Ohio
- Eligibility to take the Ohio Department of Health Nurse Aide Competency Exam for certification

Related Programs/Training
- Nursing (http://catalog.tri-c.edu/pathways/health-careers/nursing)
- Practical Nursing (http://catalog.tri-c.edu/pathways/health-careers/practical-nursing)
- Health Care (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)
- Health Careers (p. 108)

To Register for and Learn more about State-Tested Nurse Aide – Accelerated Program (http://www.tri-c.edu/workforce/health-care-training/stna.html)
WORKFORCE TRAINING

- Advanced Manufacturing and Engineering (Workforce Training Programs)
- Cisco Technical Training Institute (Workforce Training Programs)
- Health Care (Workforce Training Programs)
- Information Technology (Workforce Training Institute)
- Public Safety (Workforce Training Program)
- Truck Driving and Logistics (Workforce Training Programs)

Advanced EMS Training

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) (http://catalog.tri-c.edu/pathways/workforce-training/health-care)

Learn more about Advanced EMS Training (http://www.tri-c.edu/workforce/public-safety-institute/fire-ems-training/ems-advanced-training)

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 720-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: $4,900
Other Ohio Residents: $5,553.52

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 216-987-0272 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) (p. 184)

Learn more about Basic Police Academy (http://www.tri-c.edu/workforce/public-safety-institute/law-enforcement/basic-police-academy)
CDL-B to CDL-A Bridge Course

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 216-987-0272.

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) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/truck-driving-logistics-workforce-training)

Learn more about CDL-B to CDL-A Bridge Course

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
$5,295 plus non-refundable $200 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 216-987-0272.

Upon completion students receive
Tri-C Achievement Award and certificate from state of Ohio
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 not Federal Financial Aid/Pell Eligible.

Program cost
$4,000 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 216-987-0272.

Upon completion students receive
Tri-C Achievement Award and state certificate

Related Programs/Training
- Truck Driving and Logistics (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/truck-driving-logistics-workforce-training)

Learn more about the Class A or B CDL Refresher Course

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

This Truck Driving Academy is licensed by the Ohio Department of Public Safety as a CDL driver training school.

Program cost
$1,495 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 216-987-0272.

Upon completion students receive
Tri-C Achievement Award

Related Programs/Training
- Truck Driving and Logistics (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/truck-driving-logistics-workforce-training)

Learn more about the Class A or B CDL Refresher Course
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
$4,155 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 216-987-0272.

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about CNC Technology Certificate Program (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/computer-numerical-control-cnc.html)

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.

Scholarships, payment plans, and other financial aid options may be available. For more information, call 216-987-0272.

Upon completion students receive
Certificate for each class completed

Related Programs/Training
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

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
No.

Upon completion students receive
WCED certificate

Related Programs/Training
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Electrical Technician Certificate of Completion (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/industrial-maintenance/electrical-maintenance-technician.html)

Facility Technician

Program description
Participants receive hands-on training and knowledge to maintain, install and troubleshoot today’s building maintenance systems.

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 216-987-0272.

Upon completion students receive
WCED certificate

Related Programs/Training
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Facility Technician (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/industrial-maintenance/facility-maintenance-technician.html)

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
No (can apply for full funding at Ohio Means Jobs)
Upon completion students receive
American Welding Society certifications in MIG, Stick and TIG welding

Related Programs/Training

- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Fast-Track Welding Certificate Program

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:

- 7-week daytime academy
- 10-week daytime academy
- 17-week evening academy

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 tow 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 (http://catalog.tri-c.edu/pathways/health-careers/fire-emergency-medical-services)
- Fire-Emergency Medical Services (http://catalog.tri-c.edu/pathways/health-careers/fire-emergency-medical-services)

Learn more (http://www.tri-c.edu/workforce/public-safety-institute/fire-ems-training/fire-training-academy) 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 216-987-0272 for more information.

Upon completion students receive

Electric Utility Technology Associate of Technical Study

Related Programs/Training

Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)


### 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 216-987-0272.

#### Upon completion students receive
Certificate for each course completed

#### Related Programs/Training
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Manufacturing Technical Readiness Program (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/manufacturing-technical-readiness.html)

### 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 216-987-0272.

#### Upon completion students receive
Certificate for each course completed

#### Related Programs/Training
- Manufacturing Industrial Engineering Technology (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Nondestructive Testing (NDT) and Quality Assurance (QA) (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/nondestructive-testing-ndt.html)
**Passenger and School 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 Truck Driving Academy 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 216-987-0272.

**Upon completion students receive**
Tri-C Achievement Award

**Related Programs/Training**
- Truck Driving and Logistics (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/truck-driving-logistics-workforce-training)

Learn more about Passenger and School Bus Training (http://www.tri-c.edu/workforce/truck-driving-academy/school-bus-training.html)

---

**Powered Industrial Truck/Forklift Operator Training**

**Program description**
This eight-hour introductory Forklift Operator Training/Powered Industrial Truck (PIT) provides initial and continued training opportunities for the operation of powered industrial trucks in line with industry standards. The course, based on OSHA 1910.78 objectives, is focused on safety and basic knowledge. Classroom and hands-on training are provided in warehouse conditions.

**Other important information**

**Prerequisites:**
- You must be 18 years of age

**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 216-987-0272.

**Upon completion students receive**
Tri-C Achievement Award and wallet card

**Related Programs/Training**
- Truck Driving and Logistics (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/truck-driving-logistics-workforce-training)

Learn more about Powered Industrial Truck/Forklift Operator Training (http://www.tri-c.edu/workforce/truck-driving-academy/forklift-operator-training-pit.html)
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 only, 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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
- Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Precision Machining Technology 3 (PMT 3) (http://www.tri-c.edu/workforce/advanced-manufacturing-and-engineering/precision-machining)

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

Program 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 216-987-0272 for more information.

Upon completion students receive
Opportunity to receive Ohio Peace Officer Training Commission (OPOTC) Certification

Related Programs/Training
- Criminal Justice (Security Administration) (http://catalog.tri-c.edu/pathways/public-safety/criminal-justice-security-administration)
- Public Safety (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/workforce-training/public-safety)


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 will be offered an interview for 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 216-987-0272.

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 (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/manufacturing-industrial-engineering-technology)
• Advanced Manufacturing and Engineering (Workforce Training Programs) (http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/advanced-manufacturing-engineering)

Learn more about Right Skills Now CNC Operations Program (http://www.tri-c.edu/workforce/right-skills-now-cnc-operations-program)

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.
COURSE DESCRIPTIONS

1

- 10K Small Businesses (ZSBI) (p. 363)

A

- A+ Computer Maintenance (ZACM) (p. 363)
- Accounting (ACCT) (p. 363)
- Adult Diploma Program (ZADP) (p. 365)
- Advanced Law Enforcement (ZLAW) (p. 366)
- Advanced Trng Corrections (ZCOR) (p. 369)
- American Sign Language (ASL) (p. 369)
- Anthropology (ANTH) (p. 370)
- Applied Industrial Technology (AIT) (p. 371)
- Applied Industrial Technology (Bricklaying) (ATBL) (p. 372)
- Applied Industrial Technology (Carpentry) (ATCT) (p. 374)
- Applied Industrial Technology (Cement Masonry) (ATCM) (p. 376)
- Applied Industrial Technology (Communication Transport Systems) (ATCW) (p. 377)
- Applied Industrial Technology (Construction Tending and Hazardous Material Abatement) (ATLB) (p. 379)
- Applied Industrial Technology (Drywall Finishing) (ATDW) (p. 383)
- Applied Industrial Technology (Electrical Construction) (ATEL) (p. 383)
- Applied Industrial Technology (Floorlaying) (ATFL) (p. 384)
- Applied Industrial Technology (Glazing) (ATGL) (p. 386)
- Applied Industrial Technology (Ironworking) (ATIW) (p. 386)
- Applied Industrial Technology (Lifting Technologies) (ATLT) (p. 388)
- Applied Industrial Technology (Manufacturing Technology) (p. 391)
- Applied Industrial Technology (Millwrighting) (ATMW) (p. 393)
- Applied Industrial Technology (Operating Engineers) (ATOE) (p. 395)
- Applied Industrial Technology (Painting) (ATPT) (p. 396)
- Applied Industrial Technology (Pile Driving) (ATPD) (p. 397)
- Applied Industrial Technology (Pipefitters) (ATPF) (p. 398)
- Applied Industrial Technology (Plumbers) (ATPL) (p. 401)
- Applied Industrial Technology (Sheet Metal Working) (ATSM) (p. 404)
- Applied Manufacturing Techs (ZAMT) (p. 406)
- Art (ART) (p. 408)
- AutoCAD (ZCAD) (p. 412)
- Automotive Technology (AUTO) (p. 413)

B

- Biology (BIO) (p. 415)
- Business Administration (BADM) (p. 418)
- Business Math & Tech (ZBMT) (p. 422)
- Business Technology (BT) (p. 422)

C

- Captioning and Court Reporting (C&CR) (p. 423)
- Chemistry (CHEM) (p. 426)

- Chinese (CHIN) (p. 429)
- Cisco (ZCIS) (p. 429)
- Cisco Academy (ZCIA) (p. 431)
- College Student Resources (ZGEN) (p. 431)
- Computer Numerical Control (ZCNC) (p. 431)
- Construction Engineering Technology (CNST) (p. 432)
- Criminal Justice (CJ) (p. 434)

D

- Dance (DANC) (p. 437)
- Data Analytics (ZDTM) (p. 439)
- Deaf Interpretive Services (DIS) (p. 439)
- Dental Hygiene (DENT) (p. 441)
- Diagnostic Medical Sonography (DMS) (p. 443)
- Dietetic Technology (DIET) (p. 447)

E

- Early Childhood Education (ECED) (p. 449)
- Earth Science (ESCI) (p. 452)
- Economics (ECON) (p. 453)
- Education (EDUC) (p. 455)
- Electrical/Electronic Engineering Technology (EET) (p. 455)
- Electroneurodiagnostic Technology (END) (p. 461)
- Emergency Medical Technology (EMT) (p. 463)
- EMS Training (ZEMS) (p. 449)
- English (ENG) (p. 465)
- English As A Second Language (ESL) (p. 468)
- Environment (ZENV) (p. 470)
- Environmental, Health and Safety Technology (EHST) (p. 472)

F

- Film (ZFLM) (p. 474)
- Finance (ZFIN) (p. 474)
- Financial Management (FIN) (p. 475)
- Fire Technology (FIRE) (p. 475)
- Fire-Advanced Training (ZEFR) (p. 476)
- French (FREN) (p. 478)

G

- General Studies (GEN) (p. 479)
- Geography (GEOG) (p. 480)
- German (GER) (p. 481)

H

- Health (HLTH) (p. 482)
- Health Information Management Technology (HIM) (p. 482)
- Health Information Technology (ZHIT) (p. 486)
- Health Professional Center (ZHTH) (p. 486)
- Health Technology (HTEC) (p. 487)
- History (HIST) (p. 487)
- Hospitality Management (HOSP) (p. 491)
- Human Development (ZHDI) (p. 495)
• Human Services (HS) (p. 496)
• Humanities (HUM) (p. 498)

I
• Industrial Maintenance (ZINM) (p. 503)
• Information Technology (IT) (p. 503)
• Information Technology - Networking Software (ITNT) (p. 506)
• Integrated Systems Engineering Technology (ISET) (p. 507)
• Interior Design (INTD) (p. 509)
• Internet-Other (ZINT) (p. 511)
• ISO Training (ZISO) (p. 499)
• IT Business/Management (ZMGT) (p. 501)
• IT Design (ZDES) (p. 502)
• IT Networking (ZNET) (p. 502)
• IT Programming (ZPRG) (p. 502)
• IT Security (ZSCR) (p. 502)
• Italian (ITAL) (p. 511)

J
• Japanese (JAPN) (p. 512)
• Journalism and Mass Communication (JMC) (p. 513)

K
• Knowledge Management (ZKNO) (p. 515)

L
• Leadership (ZLDR) (p. 515)
• Lean (ZLEN) (p. 523)
• Lean Six Sigma (ZLSS) (p. 523)
• Logistics and Distribution (ZLDA) (p. 527)

M
• Marketing (MARK) (p. 527)
• Massage Therapy (MT) (p. 528)
• Mathematics (MATH) (p. 531)
• Mechanical Engineering/Manufacturing Industrial Technology (MET) (p. 536)
• Media Arts and Filmmaking (MARS) (p. 540)
• Medical Assisting (MA) (p. 542)
• Medical Laboratory Technology (MLT) (p. 545)
• Microsoft Application (ZMSA) (p. 546)
• MS Cert Prof Sys Engineer (ZMCP) (p. 527)
• Music (MUS) (p. 548)

N
• Non-Destructive Testing (ZNDT) (p. 554)
• Nuclear Medicine Technology (NMED) (p. 555)
• Nurse Aide Training (ZNAT) (p. 558)
• Nursing (NURS) (p. 558)

O
• Occupational Therapy Assisting Technology (OTAT) (p. 559)
• Online Professional Development Courses (ZONL) (p. 560)
• Operating Systems/Maintenance (ZOPS) (p. 571)
• Optical Technology (OPT) (p. 571)
• Organizational Strategy & Assessment (ZSTA) (p. 573)

P
• Paralegal Studies (PL) (p. 573)
• Performance-Based Programs (ZPBP) (p. 576)
• Pharmacy Technology (PHM) (p. 577)
• Philosophy (PHIL) (p. 578)
• Physical Education (PE) (p. 580)
• Physical Science (PSCI) (p. 585)
• Physical Therapist Assisting Technology (PTAT) (p. 586)
• Physician Assistant (PA) (p. 588)
• Physics (PHYS) (p. 590)
• Plant Science and Landscape Technology (PST) (p. 591)
• Police Academy (ZPOL) (p. 593)
• Political Science (POL) (p. 593)
• Practical Nursing (PNUR) (p. 596)
• Professional Development Institute (ZPDI) (p. 597)
• Psychology (PSY) (p. 599)

R
• Radiography (RADT) (p. 601)
• Recording Arts & Technology (RAT) (p. 605)
• Recreation (ZREC) (p. 607)
• Regional Transportation (ZRTR) (p. 607)
• Religious Studies (REL) (p. 608)
• Respiratory Care (RESP) (p. 609)
• Russian (RUSS) (p. 611)

S
• Sales (ZSLS) (p. 612)
• Sociology (SOC) (p. 612)
• Spanish (SPAN) (p. 615)
• Speech Communication (SPCH) (p. 617)
• Sport and Exercise Studies (SES) (p. 619)
• Surgical Technology (SURT) (p. 621)

T
• Theatre Arts (THEA) (p. 623)

U
• Urban Studies (UST) (p. 625)

V
• Veterinary Technology (VT) (p. 626)
• Visual Communication & Design (VC&D) (p. 628)
• Visual Communication and Design (Advertising Design) (VCAD) (p. 630)
• Visual Communication and Design (Graphic Design) (VCGD) (p. 630)
• Visual Communication and Design (Illustration) (VCIL) (p. 631)
• Visual Communication and Design (Photography) (VCPH) (p. 632)
• Visual Communication and Design (Web and Interactive Media) (VCIM) (p. 634)

W
• Women’s Studies (WST) (p. 635)

10K Small Businesses (ZSBI)


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. 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-1009 CompTIA™ A+ Certification Exam Prep
14 CEU’s

The CompTIA™ A+ program will prepare you for two CompTIA™ A+ certification exams: CompTIA A+ Exam 220-901 and CompTIA A+ Exam 220-902. Topics covered in the program include motherboards, memory, processors, video, storage media and devices, printers, operating systems, networking, virtualization, mobile devices, security, and more. You will have the opportunity to practice on online lab systems. Gaining CompTIA™ A+ certification assures employers and computer owners that a PC technician has the requisite knowledge to build, upgrade, optimize, troubleshoot, and repair personal computer (PC) systems.

Contact hours: 140
Not financial aid eligible.

ZACM-1010 CompTIA™ IT Fundamentals
2.4 CEU’s

Imagine having an IT certification after just 2 weeks of learning. This first-level course will give you a strong foundation in discovering your IT pathway. CompTIA IT Fundamentals is especially designed for people seeking to gain the basic skills and concepts necessary to start or transition into an IT career. This course will provide participants with the information needed to sit for the CompTIA IT Fundamentals Exam. Passing the exam earns the CompTIA Fundamentals certification, which demonstrates a preparedness for today’s digital workplace. The certification also may serve as an entry point into more specialized IT pathways such as networking, cybersecurity, office administration and software development.

Contact hours: 24
Not financial aid eligible.

ZACM-1011 CompTIA™ A+ Course Part 1
4.2 CEU’s

Part 1 of the CompTIA A+ course further builds upon the foundations set in CompTIA IT Fundamentals. This course is a gateway for people interested in entry-level information technology (IT) technician roles. The course prepares participants for the CompTIA A+ certification Exam 220-091. Through instructor-led hands-on learning, participants acquire the basic knowledge and skills to become a CompTIA A+ Certified Professional.

Contact hours: 42
Not financial aid eligible.

ZACM-1012 CompTIA™ A+ Course Part 2
4.2 CEU’s

This course is designed for people who have already completed Part 1 of the CompTIA A+ course. With CompTIA A+ Part 2, participants are following a clear path by advancing through the IT Gateway program and preparing for entry-level roles as IT professionals. Through instructor-led hands-on learning, participants gain even more in-depth knowledge and build upon the basic skills acquired through CompTIA IT Fundamentals and CompTIA A+ Part 1. By successfully completing this course, participants are well positioned to take exam numbers 220-902, in order to receive their CompTIA A+ Professional Certification.

Contact hours: 42
Not financial aid eligible.

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 that 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. Required 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-1310 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-1310 Financial Accounting
4 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: 4 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate Math placement score to enroll in MATH-1000 level Mathematics. OAN Approved: OBU010.

ACCT-1340 Managerial Accounting
4 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: 4 hours
Prerequisite(s): ACCT-1310 Financial Accounting, or departmental approval. OAN Approved: OBU011.

ACCT-1520 QuickBooks Immersion
2 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 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-1310 Financial Accounting; or departmental approval.

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. Payroll taxes, sales and use tax, personal property taxes, franchise taxes, and other taxes related to business. The prepares for certification.
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, Ohio, and local tax compliance as well as in the use of professional level tax preparation software. Students must successfully pass Ethics, Part A-Basic, and Parts B-Intermediate of the Volunteer Income Tax Assistance (VITA) Exam provided by the Internal Revenue Service in order to qualify as a volunteer tax preparer at a VITA Tax Clinic.
Lecture: 2 hours
Prerequisite(s): Recommend completing ACCT-1041 Individual Taxation prior to enrolling in this course.

ACCT-2310 Intermediate Accounting I
4 Credits
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-1310 Financial Accounting, and MATH-1240 Contemporary Mathematics or higher; or departmental approval: equivalent coursework or experience. Recommend IT-1010 Introduction to Microcomputer 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-1010 Introduction to Microcomputer 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-1340 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-1310 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-1340 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.

ACCT-2995 Accounting Technology
3 Credits
Capstone course in Accounting. Integrates business and accounting core curriculum and application of accounting concepts requiring critical thinking and teamwork skills. Builds on students' existing technology skills and utilizes various applications to research, present, and support financial management decision making and reporting. Spreadsheet, data management, accounting software applications, tax and other research concepts.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ACCT-1041 Individual Taxation, and FIN-2100 Financial Management or concurrent enrollment.

Adult Diploma Program (ZADP)

ZADP-1001 Career Readiness Certificate
5 CEU's
The ACT NCRC is based on ACT WorkKeys research-based work skills assessments. To earn an ACT NCRC, an examinee must successfully complete three ACT WorkKeys assessments: Applied Mathematics, Locating Information, and Reading for Information.
Contact hours: 50
Not financial aid eligible.

ZADP-1002 Gateway to College Summer Career and College Readiness Workshop
8 CEU's
This 8 week adaptive learning course is a combination of college and career readiness skills, coaching, and support for Gateway to College students who desire to accelerate their progress towards successful high school completion and greater employment opportunities. Gateway to College Scholars will be exposed to a variety of adaptive learning and competency based learning technologies that will build their mathematics, literacy, and computer proficiency skills throughout this summer enrichment program.
Contact hours: 80
Not financial aid eligible.
Advanced Law Enforcement (ZLAW)

ZLAW-1002 Police Urban Mountain Bike
4 CEU’s
This course is designed to introduce the novice or experienced police bicyclist to the latest techniques in basic patrol cycling.
Contact hours: 40
Not financial aid eligible.

ZLAW-1014 Instructional Skills Course
8 CEU’s
This course offers instruction in the theories of adult education, teaching techniques, lesson plan development, behavioral objectives, training and usage, and testing and evaluation.
Contact hours: 80
Not financial aid eligible.

ZLAW-1018 OPOTC Basic Peace Officer Refresher
1.6 CEU’s
This training is required for those persons reappointed as peace officers on or after January 1, 1989, who have had a break in service of more than one year but less than four years.
Contact hours: 16
Not financial aid eligible.

ZLAW-1087 Emergency Medical Dispatcher (EMD)
4 CEU’s
This 40-hour course will identify and define roles and responsibilities, legal and liability issues, quality assurance, and stress management for the Emergency Medical Dispatcher. Participants will review and discuss basic medical anatomy and physiology and chief complaint types, resource allocation, and effective ways to obtain valuable information from callers to aid in appropriate dispatch and pre-arrival medical instructions.
Contact hours: 40
Not financial aid eligible.

ZLAW-1124 20 Hour Private Security Firearms Qualification
2 CEU’s
This is a 20-hour qualification course for those individuals working in the field of Private Security. This will make the security officer compliant with Ohio Revised Code 4749.10. This course will consist of: course of fire, rules of engagement, and use of force.
Contact hours: 20
Not financial aid eligible.

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-1159 Security Awareness Training
1.6 CEU’s
The student will be provided information regarding concepts of security awareness. Topics include duties of security officers, customer service, bag inspections, pat downs, tactical communication/de-escalation techniques, detention, and crowd control. Training topics may vary per class.
Contact hours: 16
Not financial aid eligible.

ZLAW-1162 Taser Operator
0.8 CEU’s
This 8-hour neutral training course covers the adopted “Ohio Model Training Protocol” developed in cooperation with The Buckeye State Sheriff’s Association (BSSA), Ohio Association of Chiefs of Police (OACP), Ohio State Highway Patrol (OSHP) and the Ohio Peace Officer Training Academy (OPOTA). This course will cover the techniques for deployment and certification of instructors to certify users in the operation of TASER M26 and X26 conducted energy devices. Students will receive detailed instruction on medical concerns and weapons safety and take part in live training simulations.
Contact hours: 8
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 provides a “non-injurious” level of force.
Contact hours: 8
Not financial aid eligible.

ZLAW-1168 Private Security Tactical Baton Training
0.8 CEU’s
This 8-hour basic user training course teaches the security officer handling and application techniques of the Tactical Baton. The course deals with the blocking and striking capabilities of the straight expandable baton. Techniques include stance, patterns of movement, baton grips, baton methods of carry, baton draws, blocks, strikes and baton retention.
Contact hours: 8
Not financial aid eligible.

ZLAW-1173 Private Security Firearms Re-qualification
0.4 CEU’s
This a qualification course for those individuals working in the field of Private Security. This will make the security officer compliant with Ohio Revised Code 4749.10. This course will consist of course of fire, rules or engagement, and use of force.
Contact hours: 4
Not financial aid eligible.

ZLAW-1177 First Aid/CPR Certification
0.8 CEU’s
Basic level first aid and one-person CPR course intended to provide knowledge and skills necessary to minimize consequences of injury and sudden illness until professional medication help arrives.
Contact hours: 8
Not financial aid eligible.
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-1180 OPOTC Shotgun Course
0.5 CEU's
The Public Safety Institute of Cuyahoga Community College conducts Ohio Peace Officer Training Commission (OPOTC) Certified Private Security Advanced Training on a regular basis. This course consists of 5 required hours of training for OPOTC Private Security Firearms Shotgun Certification.

Contact hours: 5
Not financial aid eligible.

ZLAW-1182 Security Advanced Subject Control
0.4 CEU's
This course provides the security officer with technical skills to aid in controlling a subject. Topics include but are not limited to ground and standing defensive posture, takedowns, and escapes.

Contact hours: 4
Not financial aid eligible.

ZLAW-1183 Dignitary Protection
2.4 CEU's
This 3-day course focuses on recognizing serious threats and the proper implementation of countermeasures to effectively safeguard private sector personnel and/or public officials facing potential exposure. Students will learn about formations, methods of attacks, site planning & surveying, single car escorts and multiple car motorcades.

Contact hours: 24
Not financial aid eligible.

ZLAW-1184 Physical Fitness Assessment
0.4 CEU's
This assessment is based on the Ohio Peace Officer Training Commission (OPOTC) entry and/or exit standards utilized in the Basic Police Academy at Cuyahoga Community College.

Contact hours: 4
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 from emergency and homeland security situations.

Contact hours: 40
Prerequisite(s): Must be law enforcement, fire or other first responder.
Not financial aid eligible.

ZLAW-1189 911 Telecommunication
8 CEU's
This 80 Hour training consists of 40 hours classroom and 40 hours of hands on training. This APCO's PST 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, calltaking and radio techniques. This course incorporates the most up-to-date information on technology and work-related issues in public safety communications centers. The 40 hours of Hands on Training (H.O.T.) will provide keyboarding, listening and responding to actual 911 and non-emergency calls, and skill building exercises. Entering calls using Computer-Aided Dispatching (CAD), dispatching and clearing calls.

Contact hours: 80
Not financial aid eligible.

ZLAW-1190 Advanced Emergency Response Operations
0.8 CEU's
This comprehensive one (1) day program combines classroom instruction encompassing police liability issues, Ohio revised code, constitutional issues, anti-lock brake and threshold braking techniques, air bag safety. Our hands-on range work addresses issues of basic police vehicle dynamics, multi-tasking, perception and reaction time while operating police vehicle in the emergency mode. Participants should provide department vehicle (1 vehicle/2 officers) and wear department uniform.

Contact hours: 8
Not financial aid eligible.

ZLAW-1191 Advanced Emergency Night Driving
0.8 CEU's
This 8-hour course includes both classroom and hands-on training in the specific hazards of night-time illumination, multi-tasking, vehicle dynamics, increasing the officers driving and decision-making skills, Ohio Revised Code, and police liability. This course will assist departments in reducing their liability issues. Participants should provide department vehicle (1 vehicle/2 officers) and wear department uniform.

Contact hours: 8
Not financial aid eligible.

ZLAW-1192 Driving Refresher
0.8 CEU's
This 8-hour course provides the officer(s) with the skills to maneuver their patrol vehicles speed, precision and agility, while developing such skills on a dedicated tarmac pad, passing through a series of coned work stations. Each entails repeated and tightly-timed runs, proper steering techniques, acceleration, right and left turns, ABS & threshold braking in an emergency situation and operating the vehicle in reverse, while maneuvering around obstacles and simulated curving roadway. Participants should provide department vehicle (1 vehicle/2 officers) and wear department uniform.

Contact hours: 8
Not financial aid eligible.
ZLAW-1193 Pursuit Supervision Course  
0.8 CEU's  
This one day classroom instruction is an excellent course for new or experienced supervisors, requiring participant to review policy procedures and making decisions based on input from real-world pursuits. This course will include training in elements of pursuit management, policy decisions. Ohio Revised Code, constitutional issues, multi-jurisdictions, pursuit issues, and pursuit case studies. This will assist your department in reducing liability issues.  
Contact hours: 8  
Not financial aid eligible.

ZLAW-1194 CPT-Full Executive Training  
2 CEU's  
This 20-hour course consists of required topics mandated for the 2017 Ohio Peace Office Training Commission Continued Professional Training. Ohio has made significant strides in law enforcement training over the past several years, and this training will help reinforce the skills officers need to protect the community.  
Contact hours: 20  
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.

ZLAW-1196 Practical Applications of Use  
0.4 CEU's  
In this 4-hour training, participants will discuss the legal, moral, professional and ethical responsibility police officers will bear to their employers and communities while serving in an official capacity. Participants will learn the legal standard of law enforcement use of force, principles of weapon retention, strangle hold releases, and ground defense. This training fulfills a portion of the CPT required for law enforcement officers. Physical training clothing is suggested.  
Contact hours: 4  
Not financial aid eligible.

ZLAW-1197 Trauma Informed Policing  
0.6 CEU's  
This 6-hour interactive training addresses the need to have an understanding of trauma-informed approaches to those whom the community law enforcement professional serve. The goal is to increase the understanding of trauma, create an awareness of the impact of trauma on behavior, and help develop trauma-informed responses. Participants will explore issues of vicarious trauma with the law enforcement community and provide suggestions on how to promote sustainable practices that might mitigate the effects of vicarious trauma. This training fulfills a portion of the Continued Professional Training required for law enforcement officers. It is suggested to schedule the Legal Update along with this course to complete 8 hours of training.  
Contact hours: 6  
Not financial aid eligible.

ZLAW-1198 Procedural Justice  
0.4 CEU's  
This course explores the processes officers can use when treating citizens fairly and respectfully, while strengthening their department's relationships with their communities. Students will also explore techniques they can use to create an organizational culture that fosters a partnership with the public which leads to a safer work environment. This training fulfills a portion of the CPT required for law enforcement officers.  
Contact hours: 4  
Not financial aid eligible.

ZLAW-1199 2-Day Law Enforcement CPT  
1.6 CEU's  
This course covers 16 hours of the required topics mandated for Ohio Peace Office Training Commission Continued Professional Training. Ohio has made significant strides in law enforcement training over the past several years, and this training will help reinforce the skills officers need to protect the community.  
Contact hours: 16  
Not financial aid eligible.

ZLAW-1200 CPT-Blue Courage  
0.4 CEU's  
This course is a condensed version of the 16-hour Blue Courage course. Class topics include self-improvement, increased engagement, stress management, developing resilience, igniting culture change, combating cynicism and improving overall health and well-being. This training fulfills part of the Continued Professional Training requirement for law enforcement officers.  
Contact hours: 4  
Not financial aid eligible.

ZLAW-1201 Police Officer In-Service Physical Agility Exam  
0 Contact Hours  
Participant must be testing for an agency that the Cuyahoga Community College Public Safety Training Center's Law Enforcement Training Division conducts the assessment for.  
Contact hours: 2  
Not financial aid eligible.
ZLAW-1202 Self-Aid/Buddy Aid
1.6 CEU's
This 16 hour course is designed to familiarize sworn personnel with bleeding control tactics and officer safety training in self-aid/buddy-aid (Law Enforcement Medical Support - LEMS). The goal of this course is to provide law enforcement officers with the history and evolution of Tactical emergency Medical Support (TEMS) to Law Enforcement Medical Support (LEMS), to include the recommended components of such a program.
Contact hours: 16
Not financial aid eligible.

ZLAW-1203 PST1 Instructor Training
4 CEU's
The PST1 Instructor Training course offers agencies the opportunity to train staff members to serve as informative and effective instructors. Agency instructors are able to teach various APCO courses to others in the Public Safety Answering Point (PSAP), allowing for a significant reduction in new-hire and in-service training and travel.
Contact hours: 40
Prerequisite(s): All candidates must have successfully completed the student course - Public Safety Telecommunicator (PST1) 7th Edition, or have successfully completed the update for PST1 6th Edition. All candidate must have a minimum of one year’s experience in a public safety answering point (PSAP), telematics call center or 3-1-1 call center.
Not financial aid eligible.

Advanced Trng Corrections (ZCOR)
ZCOR-1004 Corrections Basic Training
14.2 CEU's
This Ohio Peace Officer Training Commission Training Academy fulfills the basic training requirement per AC Section 109:2-9-02(A) for new or newly assigned correctional staff. Throughout this 4-week Academy, students will learn the tools necessary to become a professional Correctional Officer. There are written and practical skill tests throughout. At the completion of this Academy, the participant will be qualified to take the State Certification Exam. **This is not an open-enrollment course. Participants must be sponsored by an agency to attend this training.
Contact hours: 142
Not financial aid eligible.

American Sign Language (ASL)
ASL-1001 Fingerspelling
2 Credits
Elementary proficiency of the manual alphabet and numbers of Fingerspelling ASL in conversational settings, with emphasis on fingerspelled words used as signs in ASL (loan signs) and acronyms, clubs and organizations related to the Deaf community. Emphasizes accuracy, clarity, speed, and rhythm in application of comprehension and production skills.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

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-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.

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.

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-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 cultural study of human societies. Examples from various cultures within the United States and around the world used to provide understanding of cultural differences and similarities. Will relate current findings, perspectives and methods used by anthropologists in all fields.
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 hour
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, and 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 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-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 included are mechanical analyses of pulley and gear systems and simple machines including basic properties of physics.  
Lecture: 1 hour  
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-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.  

AIT-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, parqing, 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 any Applied Industrial Technology 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-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-1808 Special Topics in Blueprint Reading for Bricklayers
2 Credits
Course covers the 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). In addition, masonry information contained within the divisions and subdivisions of job specifications is identified and applied.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Bricklayer’s apprenticeship program.

ATBL-1809 Special Topics in Grouting and Reinforcement
2 Credits
Course covers the fundamentals of structural masonry and grouting, including integration of structural masonry and building load path and load transfer. Grout placement requirements including low and high grout lifting procedures and inspection and clean out provisions and keyway function will also be covered and discussed.
Lecture: 2 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-2530 Door and Window Construction  
2 Credits  
Study of masonry steps and paving assembly construction procedure, layout and lay-up.  
Lecture: 2 hours  
Prerequisite(s): ATBL-1320 Basic Construction Drawings, and ATBL-1340 Arch Construction I or concurrent enrollment; 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.

ATCT-1301 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-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-1370 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 construction industry.  
Lecture: 2 hours  
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.
ATCT-1381 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-1390 Welding for Carpentry  
2 Credits  
Introduction to base level knowledge and skill in elementary shielded metal arc welding techniques and practices. Included are general theory of arc welding process, operation of welding equipment, welding safety practices, electrode characteristics and selection, identification of types of weld joints, and guided instruction and practice in arc welding.  
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, 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-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-1809 Special Topics in Scaffolding  
2 Credits  
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 Carpenter's 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 Specialities  
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 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): Department 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 Work
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-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-1230 Basic Plan Reading 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-1400 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.

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, governing bodies that oversee the communications industry will be identified and application procedures are covered.
Lecture: 1 hours
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 hours

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 hours
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 hours
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 hours
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 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 Laborer’s apprenticeship 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 constructions 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 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-1801 Special Topics in Pipe Lasers
1 Credit
Introductory course describing the pipe laser, its components and set up 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 apprenticeship program.

ATLB-1802 Special Topics in 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-1803 Special Topics in Traffic Control Supervisor
1 Credit
Advanced course covering highway construction safety and traffic control. Included are the establishment of work zones developed from traffic control plans and documentation procedures used for legal purposes.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.

ATLB-1804 Special Topics in Scaffold User & Skid Steer
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-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 Laborer’s apprenticeship 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 Laborer’s apprenticeship 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 apprenticeship 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-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 ST: 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-2340 Advanced Instruments
2 Credits
In-depth study of standard scaffolding and high elevation procedures. Set up and erection procedures, scaffold types, scaffold parts, and safety requirements.
Lecture: 2 hours
Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2380 Pipeline Workers
2 Credits
Advanced course covering the interpretation of construction drawings 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-2390 Specialty Topic 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): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework, or departmental approval.

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-2460 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-2500 Gas Distribution Worker
7 Credits
ATLB-2500 Gas Distribution Worker 07 Semester 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-2540 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-2580 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-2811 Special Topics in Hazwopper
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 addressed 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.

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
(Electrical Construction)(ATEL)

ATEL-1300 Direct Current Fundamentals
3 Credits
Study of Ohm’s Law, electronic theory, series, and parallel circuits, Kirchhoff’s Law, motor sizes, wire sizes, voltage drop, wiring systems, and troubleshooting. Lecture: 3 hours
Prerequisite(s): Departmental approval; admission to Electrical Construction program.

ATEL-1310 Alternating Current Fundamentals
3 Credits
Study of three and four wire two-phase circuits, three-phase induction star and delta circuits, power balanced and unbalanced loads, transformer principles, characteristics and connection, electrical instruments, self synchronous systems, protective relays, lamps and illumination. Lecture: 3 hours
Prerequisite(s): ATEL-1300 Direct Current Fundamentals, or departmental approval: admission to any Applied Industrial Technology program.

ATEL-1330 National Electric Code
2 Credits
Study of the National Electrical Code (NEC) for wiring and apparatus. Topics include wiring design and protection, wiring methods and materials, general use equipment, special occupancies, special equipment, and use of table and diagrams for the solution of practical wiring problems. Lecture: 2 hours
Prerequisite(s): Admission to Electrical Construction program, or departmental approval.
ATEL-1350 Industrial Safety
1 Credit
Study of selected topics to cover occupational safety and health. The student will become familiar with rules and regulations for Occupational Safety and Health Administration (OSHA) compliance.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATEL-1360 Blueprint Fundamentals - Electrical
2 Credits
Study of selected topics to cover occupational safety and health. The student will become familiar with rules and regulations for Occupational Safety and Health Administration (OSHA) compliance.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATEL-2300 Industrial Electronics Fundamentals I
3 Credits
Introduction to electronics which includes semi-conductor theory and circuits, transistor theory and circuits, power supplies, integrated circuits, oscillator circuits, photosensitive devices, and pulse circuits.
Lecture: 3 hours
Prerequisite(s): ATEL-1310 Alternating Current Fundamentals, or departmental approval.

ATEL-2310 Industrial Electronics Fundamentals II
3 Credits
Study of electricity as it relates to environmental control systems, fire alarms, security systems, smoke detectors, and Heating, Ventilation, and Cooling (HVAC) systems.
Lecture: 3 hours
Prerequisite(s): ATEL-2300 Industrial Electronics Fundamentals I, or departmental approval.

ATEL-2350 Programmable Logic Controllers
3 Credits
Introduction to programming techniques, and hardware configuration and theory of operation of a programmable logic controller. Systems to be studied may include the Allen-Bradley programmable logic controller (PLC) 2 and Modicon Industrial Controllers.
Lecture: 3 hours
Prerequisite(s): ATEL-1300 Direct Current Fundamentals, or departmental approval.

ATEL-2500 AC/DC Motors & Generators
4 Credits
Direct current (DC) motor construction and principles of operation, kinds of DC motors and their characteristics and control, permanent magnet meter movement, ammeter and voltmeter construction, operation care and use, watt-meter and wheatstone bridge area. Other topics include DC motors, alternators, rotating magnetic fields, alternating current (AC) motors, speed control, types of winding, and introduction to AC motor control.
Lecture: 4 hours
Prerequisite(s): ATEL-1300 Direct Current Fundamentals, and ATEL-1310 Alternating Current Fundamentals, or departmental approval.

ATEL-2510 Motor Controls
3 Credits
Direct current (DC) motor construction and principles of operation, kinds of DC motors and their characteristics and control, permanent magnet meter movement, ammeter and voltmeter construction, operation care and use, watt-meter and wheatstone bridge area. Other topics include DC motors, alternators, rotating magnetic fields, alternating current (AC) motors, speed control, types of winding, and introduction to AC motor control.
Lecture: 3 hours
Prerequisite(s): ATEL-2310 Industrial Electronics Fundamentals II, or departmental approval.

ATEL-2700 Electrical Instrumentation
4 Credits
Introduction into various types of instruments employed in industry, along with operating principles and actual application. Instruments covered are those used in measurement, transmission, and control of various industrial processes.
Lecture: 4 hours
Prerequisite(s): ATEL-2310 Industrial Electronics Fundamentals II 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): Departmental approval: admission to any Applied Industrial Technology program.

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.

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-1450 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-1650 Sheet Goods - Flash Coving or concurrent enrollment, and ATFL-1450 Floorlaying 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 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 demon-strations, 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.
Applied 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 Glazier's 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, saalants, shims and backer rod. Component and frame transport and staging are also included.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to Glazier 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 ATPT-1320 Safety Standards for Construction (OSHA-10); 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; 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 Speciality 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.

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.

ATLT-1100 Introduction to Inspections: Field Tablets IC3
1 Credit
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 Connexion" IC3.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1110 Technologies in Rigging
1 Credit
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-2010 Lifting Project Module
1 Credit
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 Credit
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 Credit
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 Credits
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 more deeply 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 Credits
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 Credits
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 all 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
Introductory 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. Outline 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-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-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-1950 Field Experience
2 Credits
On line 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-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. Included are 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. Student will learn 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-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-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): Departmental approval: admission 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 concurrent enrollment; 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 formulae 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-2130 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-2330 Precision Optics
2 Credits
In depth study of concepts related to precision optics. Topics include operational theory, operation of tilting level and jig transit, interpretation and application of a Whyteface® scale, peg testing, measurement theory, and mirror usage.
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-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): Departmental approval: acceptance to any Applied Industrial Technology program.

ATMW-2700 Monorail
2 Credits
Study of monorail systems used to transfer materials in assembly line operations and related manufacturing facilities. 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 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-scaper 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 Operators, 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 Operator; 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 Preperation 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): Admission to Painters and any Applied Industrial Technology program, 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-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 and 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 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 discuss 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: Rigging
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-2105 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-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.  

Applied Industrial Technology (Plumbers) (ATPL)  

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, journeyman, 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 Plumbers’ 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-1800 Special Topics: Confined Space
1 Credit
Introduction to hazards and dangers of working in confined space. Hazards include limited means of egress with limited natural ventilation that are not meant for continuous occupancy and permit required work areas will be examined. In addition, an introduction to Material Safety Data Sheets and their use to reduce chemical accidents in the workplace will be covered. Use of proper safety procedures and safety equipment as prescribed by OSHA and/or safety enforcement agencies will be emphasized. This course will train the student to be a competent person in trenching and excavation according to OSHA standards. The course will cover all OSHA related sections, soil mechanics and testing, job planning and protective systems required in the pipe trades industry.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Plumbers’ apprenticeship program.

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-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 Plumber's 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 the Plumber's 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 Plumbers' 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 fundmentals 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-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-1805 Special Topics in 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 mounting brackets, operating components and access doors. Testing procedures and schedules and maintenance procedures will be addressed.  
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 hour
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 reject 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 hour
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 hour
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 hour
Prerequisite(s): Departmental approval: admission to Sheetmetal 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
Prequisite(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
Prequisite(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
Prequisite(s): Departmental approval: admission to Sheet Metal Worker’s Apprenticeship program.

Applied Manufacturing Techs (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. It 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
Blueprint reading is the universal form of communication in manufacturing plants and machine shops. This course teaches you how to recognize this technical communication used through drawing language and how basic concepts are applied in a manufacturing environment. Learn how 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. Basic plate measurement techniques utilizing gage blocks, height gages and sine bar are also covered.
Contact hours: 24
Not financial aid eligible.

ZAMT-1088 Coordinate Measuring Machine
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: 20
Not financial aid eligible.

ZAMT-1116 Geometric Dimensioning & Tolerancing
1.2 CEU’s
Learn how to interpret and apply the concepts of geometric dimensioning and tolerancing to engineering drawings. Attendees apply the skills learned by completing 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-1160 Fast Track Welding Boot Camp
28 CEU’s
This fast-track program provides the basic training for students who wish to acquire fundamental skills of Stick, MIG and TIG welding technologies in a 280-hour program which will prepare individuals for a career in the welding industry. Upon successful completion in 10 weeks, you will test for the American Welding Society (AWS) MIG, TIG & Stick certifications and if passed, will receive between 1F – 4G AWS Certifications (depending on skill level).
Contact hours: 280
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-1166 Regional 3D/Additive Manufacturing Conference
0.7 CEU's
It is the goal of the 3D/AM program to promote additive manufacturing technologies and accomplishments in multiple industries. The conference will offer dual track seminars and overview for companies, middle schools, high schools, and higher learning educators who have a vested interest in current and future trends in additive manufacturing. This two day conference is on Thursday June 18 and Friday June 19, 2015 at the Advance Technology Training Center. Thursday there will be a networking, reception, and exhibits display with multiple vendors. Friday will be the conference with a keynote address and then seminars to follow.
Contact hours: 7
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-1171 3D Scanning, Reverse Engineering, and Inspection for 3D/AM
3 CEU's
Engineering parts inspection and reverse engineering processes employing 3D printing, scanning, and Coordinate Measuring (CMM technologies.) Emphasis on performing Laser Arm Scanning to generate images for conversion into 2D/3D drawings; using applicable software to produce 3D models or converting scanned images into 2D/3D models; using CMM for parts inspection and generating points cloud for 3D modeling; interfacing generated models with reverse engineering methods. Material will be provided in class.
Contact hours: 30
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-1177 UAW-Ford Industrial Readiness- IRCP1 Shop Math
3.2 CEU's
Review of basic math
Contact hours: 32
Not financial aid eligible.

ZAMT-1178 UAW-Ford Industrial Readiness- IRCP2 Blueprint Reading
3.2 CEU's
Introduction to Blueprint reading
Contact hours: 32
Not financial aid eligible.

ZAMT-1179 UAW-Ford Industrial Readiness- IRCP3 Trade Related Preparation
4.8 CEU's
Trade-related preparation for industrial career.
Contact hours: 48
Not financial aid eligible.

ZAMT-1182 Introduction to 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-1189 Ford Work Simulation Training
0.8 CEU's
This is an 8hr noncredit assembly line training course used to help prepare both encumbered as well as new employees to work as engine assembly technicians.
Contact hours: 8
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): ENG-0990 Language Fundamentals II or appropriate score on English Placement Test.
OAN Approved: TMAH.

ART-1050 Drawing I
3 Credits
Introduces basic drawing methods, media and concepts. Studio experiences emphasize drawing from observation and the development of line, mass, proportion, negative/positive space and shape, composition, light, relative values, and perspective. Historical precedents are discussed, master works analyzed, and relevant practical information is assimilated into the flow of class assignments.
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. Emphasis is on spatial, structural and compositional concepts. Introduces color media and develops additional drawing strategies to meet situations demanding advanced skills. May be repeated for up to nine credits, three 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
Study of the elements of three-dimensional visual design and their application in creative expression. Recommended for students taking art related courses and programs that emphasize three-dimensional investigations.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
OAN Approved: OAH047.

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-1200 Calligraphy
3 Credits
Study and execution of letter forms and scripts from various cultural systems of writing. Understanding inherent beauty of scripts as graphic design elements. May be taught using hand or computer skill development.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): None.
ART-1500 Art for Elementary Education
3 Credits
Basic art education theory and practice in visual arts for elementary education majors. Emphasis on integration of visual arts disciplines with other subjects in elementary curriculum.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

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: 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.
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 the student’s awareness of personal goals and expectations for entering the art therapy profession, and deepen the student's understanding of the creative process. Connect the student with his/her creative potential through studio experiences. 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.
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
Fundamentals of basic hand building methods, glazing and decorative techniques by creating forms of increasing complexity. Broad survey of ceramic history.
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-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.

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.
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-182T Independent Laboratroy Study/Research
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 or appropriate score on English Placement Test.
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; or ENG-101H Honors College Composition 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 fromPrehistory 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: TMAH and OAH005 (Course 1 of 2, both must be taken).

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, Mannerism, Sixteenth 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. 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.
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.
OAN Approved: TMAH and OAH005 (Course 2 of 2, both must be taken).

ART-2050 Painting I
3 Credits
Introduction to materials and techniques of opaque painting (oil and acrylic). Emphasis on use of color, composition and other perceptual concerns. Exploration of various styles of painting.
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 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-2100 Computer Graphic: Raster Images
3 Credits
Study raster (paint) software tools for graphic design and expressive images. Techniques relating to demands in current market include scanning, processing and composting of images. Interactive digital portfolio output. May be repeated up to 9 credits, only 3 credits may be applied to degree requirements. New software options available as course is repeated.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1081 2D Design and Color, or departmental approval: comparable skills.

ART-2110 Computer Graphic: Drawing
3 Credits
Study 2D vector object construction for graphic design images. Develop precision in Bezier curve manipulation, hand drawn images are scanned in, traced or streamlined into vector information. Filters humanize the mathematical hard edges of images. Interactive digital portfolio output. May be repeated up to 9 credits, only 3 credits may be applied to degree requirements. New software options are available as course is repeated.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1081 2D Design and Color.

ART-2151 Animation for Web and Media
3 Credits
[This course is crosslisted as VCIM-2270. Credit can only be applied to degree requirements once for either course.] Technical and aesthetic fundamentals of 2D animation as they pertain to the Internet. Use of current software to develop interactive, animated graphics and interfaces. Various techniques including tweening, frame by frame, onion skinning, shape and color morphing as well as non-linear structure, interactivity, communication, scripting and troubleshooting. Acquisition or creation and integration of music, sound and video. 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-1081 2D Design and Color; or VC&D-1015 Digital Studio Basics 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
Introduction to various aspects of printmaking and graphic composition. Techniques include relief printing (wood/linocut, monotype); intaglio (etching, engraving, dry point, mezzotint, aquatint); collagraphy, monoprint and multi-color work.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): ART-1050 Drawing I, or departmental approval. OAN Approved: OAH0049.

ART-2220 Printmaking II
3 Credits
Continuation of advanced printmaking techniques such as intaglio, relief, lithography, serigraphy, colligraphy 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.
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-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: Certification at the professional level in Art Therapy requires 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.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ART-2300 Art Therapy III: Approaches and Technique; PSY-1010 General Psychology or PSY-101H Honors General Psychology; PSY-2050 Psychology of Personality; and PSY-2080 Abnormal Psychology or concurrent enrollment; or departmental approval.
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): 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-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.
ZCAD-1046 AutoCAD for the Professional
3.6 CEU’s
This course is designed for business and industry professionals (architects, engineers, designers, technicians) who need to master AutoCAD. This course covers the introductory 2D capabilities required for creating, editing, and printing detailed production drawings.
Contact hours: 36
Not financial aid eligible.

ZCAD-1047 Customized Revit Architectural Fundamentals
0.9 CEU’s
Customized class covering the fundamentals of Autodesk Revit Architectural software for specific company.
Contact hours: 9
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 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 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-1550 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-1560 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): None.

AUTO-1600 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): None.

AUTO-1650 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-1660 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): None.

AUTO-1700 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): None.

AUTO-1750 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-1800 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): None.

AUTO-1850 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-1900 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): None.

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: 12 clock hours per week.
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: 12 clock hours per week.
Prerequisite(s): Departmental approval: job site approval.

Cuyahoga Community College Catalog 2017-2018 413
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 affect 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.

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-2500 Automotive Electrical Diagnosis
2 Credits
Problem-based learning to develop diagnostic skills needed to repair various automotive electrical systems and accessories. Laboratory practice focuses on techniques for diagnosing and troubleshooting any automotive electrical circuit.
Lecture: 1 hour, Laboratory: 3 hours
Prerequisite(s): AUTO-2470 Automotive Electrical Systems, 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): Departmental approval: job site approval.

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: 12 clock hours per week.
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: 12 clock hours per week.
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 emphasized. To fulfill laboratory science requirements, students should enroll in the related laboratory course.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMNS.

BIO-104L The Cell and DNA Laboratory
1 Credit
Laboratory course examines scientific method, cell structure and function, cell division, DNA structure and function, and Mendelian and molecular genetics. Includes microscope work, models, role play 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): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMNS.

BIO-105L Human Biology Laboratory
1 Credit
Laboratory course examines structure and function of human body systems. Includes microscope work, models, computer applications, and animal dissection.
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): Concurrent enrollment in BIO-1060 Environment, Ecology, and Evolution is strongly recommended.
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): Concurrent enrollment in BIO-1060 Environment, Ecology, and Evolution is strongly recommended.
OAN Approved: TMNS.

BIO-1080 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-1221 Anatomy and Physiology for Diagnostic Medical Imaging
4 Credits
Basic understanding of body systems, structures and organs based on functions and relationships to diagnostic medical imaging examinations.
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 eye 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: 2 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, OCS003, and OCS024 (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, OCS003, and OCS024 (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, OCS004, and OCS024 (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: OCS024 (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-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 score on English Placement Test, and student. May be repeated for a maximum of six credits of different topics.

BIO-2020 Field Botany
3 Credits
Study of the plant kingdom, emphasis on collection, identification, classification and ecology of local flora. Field trips required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Completion of any 1000-level science course.

BIO-2050 Field Zoology
3 Credits
Study of the animal kingdom, emphasis on location, identification, classification and ecology of local fauna. Field trips required.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): Completion of 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-2341 Anatomy and Physiology II, or BIO-1500 Principles of Biology 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-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-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, anatomic 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; or BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems and BIO-233B Anatomy and Physiology I: Nervous, Integumentary, and Endocrine Systems.
OAN Approved: TMNS.

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. Laboratory: 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-1000 Business Language Skills
2 Credits
Fundamentals of business language with emphasis on grammatical correctness, acceptable usage, spelling, vocabulary, punctuation, capitalization, correct number usage, and proofreading. Limited writing involves choice of correct word usage, effective sentence structure, and paragraph construction.
Lecture: 2 hours
Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

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
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-1121 Principles of Management and Organizational Behavior
4 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: 4 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-1300 Small Business Management
4 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: 4 hours
Prerequisite(s): None.

BADM-1460 Workers’ Compensation Law
3 Credits
[ross-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-1121 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 Communication
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-2110 Production/Operation 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-2160 Introduction to Purchasing.

BADM-2120 Logistics Management  
3 Credits  
Logistics Management is the study planning, executing, and controlling the flow and storage of goods, services, and information 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, and supply management.  
Lecture: 3 hours  
Prerequisite(s): BADM-2160 Introduction to Purchasing or concurrent enrollment, or departmental approval: comparable knowledge or skills.

BADM-2150 Business Law  
4 Credits  
Study of legal process as it relates to society, government, business and the individual, the law as it relates to legal system, contracts, sales, agency, business organizations, debtor-creditor relations, and governmental regulation of business.  
Lecture: 4 hours  
Prerequisite(s): BADM-1020 Introduction to Business, or BADM-1121 Principles of Management and Organizational Behavior, or departmental approval: comparable knowledge or skills.  
OAN Approved: OBU004.

BADM-2160 Introduction to Purchasing  
3 Credits  
Analysis of purchasing role in an industrial organization. Description of quality, specifications and standardization, supplier selection, international sourcing, pricing principles, types of contracts, negotiation techniques, make or buy, computer based system, EDI, capital equipment, services and value analysis, and legal and ethical aspects of purchasing.  
Lecture: 3 hours  
Prerequisite(s): BADM-1020 Introduction to Business or concurrent enrollment, or departmental approval: comparable knowledge or skills.

BADM-2180 Purchasing Management  
3 Credits  
Capstone course in Purchasing Management program. Focus on purchasing 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-2160 Introduction to Purchasing, or departmental approval: comparable knowledge or skills.

BADM-2240 Negotiations  
3 Credits  
Principles, techniques, and skills needed in interpersonal, buyer-seller, transportation, and labor management negotiations.  
Lecture: 3 hours  
Prerequisite(s): BADM-1020 Introduction to Business or BADM-2160 Introduction to Purchasing.

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. Labatory: 4 hours  
Prerequisite(s): BADM-1300 Small Business Management, or departmental approval: comparable knowledge or skills.
BADM-2470 Marketing Techniques for Small Business Management
3 Credits
Capstone course in Small Business Management program. Marketing research and other marketing activities, market segmentation, product development, advertising, sales promotion, personal selling, and pricing.
Lecture: 3 hours
Prerequisite(s): BADM-1300 Small Business Management, or MARK-2010 Principles of Marketing, 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.
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.

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-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-1010 Introduction to Microcomputer Applications or IT-101H Honors Introduction to Microcomputer Applications.

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-1010 Introduction to Microcomputer Applications, or IT-101H Honors Introduction to Microcomputer 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, math functions, styles, outlines, templates, macros, graphics, and web applications.

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 video-capturing, playing and editing video.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or IT-101H Honors Introduction to Microcomputer Applications, or departmental approval: comparable knowledge or skills.

BT-2220 Business Spreadsheet Applications (Excel)
3 Credits

Study of business spreadsheet concepts and software applications as used in a business environment. Spreadsheet theory, design, manipulation, and implementation techniques. Hands-on applications, case studies, and problem-solving strategies using spreadsheet software for accurate and timely analysis, manipulation, and interpretation of data. Overview of functions, formulas, What-If analysis tools, charting, data tables, data imports, multiple worksheets/workbooks, collaboration tools, and application development.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ACCT-1011 Business Math Applications or ACCT-1020 Applied Accounting; and IT-1010 Introduction to Microcomputer Applications, or IT-101H Honors Introduction to Microcomputer Applications; or departmental approval: comparable knowledge or skills.

BT-2270 Desktop Publishing
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-1010 Introduction to Microcomputer Application or IT-101H Honors Introduction to Microcomputer Applications.

BT-2040 Emerging Workplace Technology
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  
Relation 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-1010 Introduction to Microcomputer Applications or IT-101H Honors Introduction to Microcomputer Applications.  

BT-2370 Office Meeting and Event Coordination  
3 Credits  
Principles and practices for office professionals and public relations practitioners who coordinate events, meetings, conferences, or conventions.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or IT-101H Honors Introduction to Microcomputer 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-1010 Introduction to Microcomputer Applications, or IT-101H Honors Introduction to Microcomputer Applications.  

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-1010 Introduction to Microcomputer Applications or IT-101H Honors Introduction to Microcomputer Applications; or departmental approval.  

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.  

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 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.  

Cuyahoga Community College Catalog 2017-2018 423
C&CR-1300 Realtime Theory I  
4 Credits  
Focus on principles of writing on stenotype machine. Online instruction of machine shorthand keyboard, arbitrary 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-1330 Realtime Theory II  
2 Credits  
This course is a continuation of Realtime Theory. Students will complete study of theory principles.  
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): C&CR-1300 Realtime Theory I.  

C&CR-1340 Realtime Theory III  
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-1330 Realtime Theory II or concurrent enrollment.  

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-1340 Realtime Theory III.  

C&CR-1410 Precision Writing I - Using Brief Forms  
1 Credit  
Designed to enhance writing skills on steno machine or with voicewriter. Emphasis on brief forms and specific phrases found in everyday vocabulary. Accuracy of outlines emphasized as well as use of specific brief forms. Course serves as a companion to speedbuilding curriculum.  
Lecture: 1 hour  
Prerequisite(s): C&CR-1220 Voicewriting III or C&CR-1340 Realtime Theory III, and concurrent enrollment in C&CR-1451 Speedbuilding and Transcription at 140 WPM, or C&CR-2401 Speedbuilding and Transcription at 180 WPM, or C&CR-2451 Speedbuilding and Transcription at 225 WPM.  

C&CR-1420 Precision Writing II - Arbitraries in Legal Vocabulary  
1 Credit  
Enhancement of writing skills on steno machine or voicewriter software. Emphasis on brief forms or voice codes for specific phrases found within jury charge and other legal material. Accuracy of outlines or voice codes emphasized as well as use of specific brief forms. Course serves as companion to speedbuilding curriculum.  
Lecture: 1 hour  
Prerequisite(s): C&CR-1340 Realtime Theory III or C&CR-1220 Voicewriting III, and C&CR-1451 Speedbuilding and Transcription at 140 WPM, or C&CR-2401 Speedbuilding and Transcription at 180 WPM, or C&CR-2451 Speedbuilding and Transcription at 225 WPM.  

C&CR-1430 Precision Writing III - Numeric and Alphabetic Accuracy  
1 Credit  
Improve writing skills on steno machine or utilizing voicewriter software. Emphasis on numeric material and proper names. Accuracy of "letter spelling", phonetic steno or voicewriter of names with verification of name emphasized, as well as the ability to steno or voice write numbers fluently. Course serves as companion to speedbuilding courses.  
Lecture: 1 hour  
Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1340 Realtime Theory III; and C&CR-1451 Speedbuilding and Transcription at 140 WPM, or C&CR-2401 Speedbuilding and Transcription at 180 WPM, or C&CR-2451 Speedbuilding and Transcription at 225 WPM.  

C&CR-1451 Speedbuilding and Transcription at 140 WPM  
3 Credits  
Speedbuilding at 120-140 wpm level. Utilization and expansion of machine-writing or voicewriter theory. Practical procedures on stenotype machine or utilizing voicewriter 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 C&CR-1340 Realtime Theory III.  

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-1521 Realtime Theory Reinforcement  
2 Credits  
Laboratory: 4 hours  
Prerequisite(s): C&CR-1330 Realtime Theory II or concurrent enrollment.  

C&CR-1601 Court Reporting Technology  
4 Credits  
Basics of computer aided transcription. Emphasis on court reporting software, dictionary development, and transcript production. Development of scoping skills and research techniques.  
Lecture: 2 hours. Laboratory: 6 hours  
Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1330 Realtime Theory II.
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-1340 Realtime Theory III 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-1330 Realtime Theory II.

C&CR-2350 Editing Legal Documents
2 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: 2 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 the 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 voice-writing 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 Question and Answer test material, 200 wpm Jury Charge material and 180 wpm Literary. 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-1450 Speedbuilding and Transcription at 140 WPM and C&CR-1600 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-1600 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-2840 Internship
1 Credit
Provides student with 75 hours of actual writing time during on-the-job training using voicewriting technology or machine shorthand technology. 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-2450 Speedbuilding and Transcription at 225 WPM, or concurrent enrollment; and C&CR-2510 CART Production and C&CR-2530 Captioning Production.

CHEM-1000 Everyday Chemistry
3 Credits
[Crosslisted with PSCI-1020. Credit can only be earned once for either course.] 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.
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test, or departmental approval.

CHEM-100L Everyday Chemistry Laboratory
1 Credit
This course is cross-listed as PSCI-102L. Credit can only be earned once for either course. 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.

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; 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.
OAN Approved: TMNS.

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, thermochecmy, 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.
Laboratory: 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.  
Lecture: 4 hours. Laboratory: 3 hours  
Prerequisite(s): CHEM-130H Honors General Chemistry I, or departmental approval: equivalent knowledge or skills.  
OAN Approved: TMNS, 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-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: OSC0010 (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 spoken Chinese (Mandarin) through listening, speaking and using Chinese software on computer. Emphasis on becoming familiar with four tones of Chinese language.
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.

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 skills. You will gain hands-on experience as you prepare for operating the modern TCP/IP networks built with Cisco hardware. You will use Cisco 2600/2800/3500/3550/3560/4506 series routers and switches to apply the Cisco Internetwork Operating System (IOS). You will use the interface to start up and configure a newly installed Cisco router and switch. You will be able to perform all basic configurations and procedures to build a multilateral, multi-group network using LAN and WAN interfaces for the most common routing.
Contact hours: 32
Not financial aid eligible.

ZCIS-1002 CCNA: Interconnecting Cisco Networking Devices: (CCNA Routing and Switching) v3 (Bootcamp)
4 CEU's
Attention, networkers. Enlist in this highly focused course to sharpen your CCNA skills. In this hands-on technical course, while building on the foundation provided by ICND1, you will inspect the principles of operation of today's key internetworking technologies and combine this information with hands-on configuration and troubleshooting labs. You will find that this ICND2 class really gets you in shape for the CCNA 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 the student for the ROUTE 300-101 exam while learning 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, the student will develop an understanding of how to implement scalable routed networks. 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 the student 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, the student will develop the knowledge and skills needed to create an efficient and expandable enterprise network. Focus will be placed 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-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-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.

ZCIS-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.

ZCIS-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 a set of troubleshooting scenarios that are presented.
Contact hours: 40
Not financial aid eligible.

ZCIS-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 (IIUC 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.

Not financial aid eligible.
ZCIS-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), CCNA Wireless (Cisco Certified Networking Associate Wireless) and CCNA (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.

ZCIS-1052 Introducing Cisco Data Center Networking (DCICN)  
3.5 CEU's  
Contact hours: 35  
Not financial aid eligible.

ZCIS-1054 Securing Cisco Networks with Threat Detection and Analysis (SCYBER)  
3.5 CEU's  
Contact hours: 35  
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.

Computer Numerical Control (ZCNC)

ZCNC-1005 MasterCAM - Basic Mill  
3.2 CEU's  
Serious CNC machinists, operators, and programmers who want to build their computer skills in 3D design, drawing, and CNC programming will want to take advantage of this course. Learn the skills needed to produce CNC part programs for 3-axis machining centers using computer assisted manufacturing (CAM) software.  
Contact hours: 32  
Not financial aid eligible.

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 a major tool for American manufacturers 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 that you 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
53 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: 530
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 for MasterCAM Basic Lathe Class. Students setup and machine the projects from MasterCAM Basis Lathe class.
Contact hours: 12.5
Not financial aid eligible.

Construction Engineering Technology (CNST)

CNST-1281 Construction Engineering Orientation
3 Credits
Introduction to construction objectives and opportunities. Recognition of professional practices, current issues and developments in construction, including Green Building. Overview of construction project operations, trade journals, and associations.
Lecture: 3 hours
Prerequisite(s): None.

CNST-1410 Architectural CAD I
3 Credits
Working drawing techniques of domestic structures using computer-aided drafting software. Floor plans, foundation plans, wall-sections, elevations, site plans and dimensioning techniques will be the core concepts.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): CNST-1731 Construction Print Reading; or departmental approval.

CNST-1510 Green Building & Sustainability I
3 Credits
Lecture: 3 hours
Prerequisite(s): None.

CNST-1731 Construction Print Reading
3 Credits
Overview of construction drawings for the major construction disciplines to understand presentation methods, interpretation, sequence of preparation, bid submittal processes, revision control, and code requirements. Commercial building, structural, and civil drawings utilized.
Lecture: 3 hours
Prerequisite(s): None. CTAN Approved: CTCON001.

CNST-1740 Fundamentals of Geographic Information Science
3 Credits
Introduction to geographic information science with a focus on learning Geographic Information Systems (GIS) software. Topics include: introduction to 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, and an introduction to applications in engineering and engineering technology.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): MATH-1530 College Algebra; and IT-1010 Introduction to Microcomputer Applications, or MET-1120 Computer Applications and Programming; or departmental approval.
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): MET-1601 Technical Statics; and MATH-1540 Trigonometry and CNST-1731 Construction Print Reading; or departmental approval.
OAN Approved: OET015.

CNST-2130 Construction Methods, Materials, and Equipment
3 Credits

Study of common construction approaches including pre-fabrication practices, modularization, and traditional site erection means. Construction materials and properties; testing methods; equipment usage, attributes, cost, and availability discussed. Includes 10-hour OSHA training program.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-1731 Construction Print Reading; and MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate Math placement score; or departmental approval.
OAN Approved: OET016. CTAN Approved: 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-2200 Architectural Building Information Modeling
3 Credits

Instruction into building information modeling (BIM) for architectural building envelope design. Autodesk Revit software will be used to generate a commercial building, and produce related drawings used in a set of contract documents.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): CNST-1730 Construction Print Reading.

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-2130, Construction Materials, Methods and Equipment 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

Time management of construction activities by implementing 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-2130 Construction Methods, Materials and Equipment, 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

Capstone Course. Introduction to asset management with a focus on utility systems spread over a geographic region. Principles of cartography and presentation of geographic information to be utilized in presenting information. Coordinate systems, map projections, scale, topographic mapping, thematic mapping, spatial analysis methods, and mapping accuracy are introduced. Use Geographic Information Systems (GIS) to analyze and model engineering systems. Probability models and ways to achieve levels of service within an overall system. Laboratory element with case studies incorporated.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): MET-2430 Engineering Probability and Statistics; and CNST-2110 Basic Survey Practices, or CNST-1410 Architectural CAD I, or CNST-1730 Construction Print Reading.
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-2130 Construction Methods, Materials and Equipment.

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 reprints for a construction project using computer software.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment 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): ENG-1010 College Composition I or concurrent enrollment. OAN Approved: OSS031. CTAN Approved: CTJC001.

CJ-1010 Computers in Criminal Justice
2 Credits
Introduction to uses and applications of computer technology in criminal justice field. Includes discussions of basic terminology, common applications in database, word processing, and spreadsheet uses; and an introduction to the World Wide Web. Comprehensive examination of computer crimes and procedures, techniques, and legal constraints which apply.
Lecture: 2 hours
Prerequisite(s): None.

CJ-1020 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-1050 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 security field.
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-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): None.

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): None.
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): CJ-1000 Introduction to Criminal Justice or departmental
approval: comparable knowledge or skills. CTAN Approved: CTBPO001.

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.

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
the role 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-2350 Special Issues in Criminal Justice
2 Credits
Review of special and contemporary issues in the field of criminal justice.
Discussion of varying viewpoints and aspects of problems faced in these
fields. Critical and analytical approach used to understand role and
relationship of the criminal justice system in today’s society.
Lecture: 2 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental
approval.

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: CTBP0001.

CJ-2380 Defensive Driving
2 Credits
Emergency vehicle operation under strenuous conditions for law enforcement.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): CJ-1000 Introduction to Criminal Justice. CTAN Approved: CTBPO001.

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.

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-2450 Protection Services
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-2470 Staffing and Administration of Correctional Institutions
4 Credits
Systematic examination of the planning, staffing and management of correctional facilities. Focuses on personnel, administrative practices, and management of correctional institutions.
Lecture: 4 hours
Prerequisite(s): CJ-1070 Introduction to Corrections or departmental approval: comparable knowledge or skills.

CJ-2480 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-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-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-1500 Dance I, or departmental approval: comparable knowledge or skills.
OAN Approved: OAH013.

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-1600 Choreography & Production
2 Credits
Student learns to make solo and group dances by exploring choreography process: content, form, technique and projection. Through formal and informal dance performances, student learns elements of lighting, costuming, public relations and promotion.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): DANC-1500 Dance I, or departmental approval: comparable knowledge or skills.
DANC-1820 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-2300 Dance III, 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-1520 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.
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.
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.
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.

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-1402 American Sign Language Linguistics
3 Credits
Study of linguistic principles of American Sign Language (ASL) by comparing lexicon and syntax of ASL to other sign systems and English. Analysis of current research in the areas of phonology, morphology, semantics, syntax and sociolinguistic structure of ASL. Comparison of two major systems for describing signs and how they are used in the language, the Stokoe System and the Liddell/Johnson Model. Study sociolinguistic aspects of ASL as it is used among Deaf individuals. Analysis of linguistic structures within ASL.
Lecture: 3 hours
Prerequisite(s): Departmental approval: admission to program.
DIS-1740 Field Experience Lab I
1 Credit
First in a two-course sequence. Companion course to Field Experience I. Practical approach to sign language interpreting, in a lab setting, with emphasis on the various and unique situations that occur in the field of interpreting. Analysis of 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 THEA-1500 Acting I; and concurrent enrollment in DIS-1940 Field Experience I, and concurrent enrollment in DIS-1971 Field Experience Seminar I.

DIS-1940 Field Experience I
1 Credit
First 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 for 15 weeks (180 hours total)
Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-1740 Field Experience Lab I; and concurrent enrollment in DIS-1971 Field Experience Seminar I.

DIS-1971 Field Experience Seminar I
1 Credit
First in a two-course sequence. Companion seminar to Field Experience I. Provides opportunities for sharing educational and community-based practicum experiences through log entries, videotapes, and group discussions. Includes preparation for national certification examination. Current issues in the interpreting field are discussed.
Other Required Hours: Seminar: 1 hour per week for 15 weeks.
Prerequisite(s): ASL-2420 Advanced American Sign Language II, DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-1740 Field Experience Lab I; and concurrent enrollment in DIS-1971 Field Experience Seminar I.

DIS-2320 Educational Interpreting
3 Credits
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
Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and SPCH-1010 Fundamentals of Speech Communication.

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-1971 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 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-2740 Field Experience Lab II; and concurrent enrollment in
DIS-2971 Field Experience Seminar II.

DIS-2971 Field Experience Seminar II
1 Credit
Capstone course in Deaf Interpretive Services, and companion
seminar to Field Experience II. Supplements practicum experience by
providing opportunities for sharing experiences through log entries,
videotapes, and group discussions. Continued preparation for national
certification examination. Resume writing and professional development
opportunities. Stress management and health issues.
Other Required Hours: Seminar: 1 hour per week.
Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2300
Transliterating, and DIS-2310 Interpreting II, and DIS-2410 Voicing, and
DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-2740
Field Experience Lab II; and concurrent enrollment in DIS-2940 Field
Experience II.

Dental Hygiene (DENT)

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-1330 Radiology
3 Credits
History and development of x-ray, its nature and properties. Safety
precautions and uses of x-ray in dentistry. Theory and practice in
fundamentals of oral radiographic technique. Image receptor placement,
tube angulation, processing, scanning, mounting and interpretation of
images. Film, digital sensor, phosphor plate and panoramic exposures.
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): 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
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 preventive 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
cements, bases, liners, amalgam, impression materials, composites,
bonding and sealant materials in laboratory setting.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1420 Periodontics I
2 Credits
Study of anatomy and histology of periodontium in health and disease.
Focus on pathogenesis of various classifications of gingival and
periodontal diseases: microbiological, host response, local and systemic
risk factors. Contemporary periodontal adjuncts considered. Major
research paper required.
Lecture: 2 hours
Prerequisite(s): DENT-1300 Preventative 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 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.
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 radiographs, application of preventive therapeutics and the development of individualized self-care education plans. Case Presentation in verbal 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 hours
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 hours
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 nutritional counseling 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 hours
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 hours
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 pathophysiology 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 pathophysiology 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 the abdomen to include adrenal glands and spleen as visualized by ultrasound. Normal anatomy and anatomic variants, physiology, pathology and pathophysiology of superficial structures to include the breast, neck, thyroid, musculoskeletal, and male reproductive system as visualized by ultrasound. Normal anatomy and anatomic variants, physiology, pathology and pathophysiology of the pediatric hip, spine, and head as visualized by ultrasound. Study of Doppler and color Doppler applications of above mentioned organs and systems. Normal anatomy and anatomic variants, physiology, pathology and pathophysiology of the carotid artery and lower extremity venous vasculature. 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 sonographic appearances. Sonographic physics 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 sonographic 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
3 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, sonographic 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 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 casual 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. OAN Approved: OHL016.

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
Apply nutrition information to variety of activities to demonstrate competency at dietetic technology student level. The Food Guide Pyramid and Exchange System used to write a variety of menus: low fat, high fiber, low calorie, high protein and vegetarian. Medical terminology and abbreviations used in patient charting included.
Lecture: 1 hours
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 hours
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 hours
Prerequisite(s): MATH-0955 Beginning Algebra or appropriate math placement test score to enroll in 1000-level 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-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): Departmental approval.

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, 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 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 interdisciplinary team approach to care.
Lecture: 2 hours
Prerequisite(s): DIET-2311 Medical Nutrition Therapy II, and concurrent enrollment in DIET-2862 Geriatric Nutrition Practicum.

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 DIET-2862 Geriatric Nutrition Practicum.

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 7 hours per week; Seminar 1 hour per week
Prerequisite(s): Concurrent enrollment in DIET-2501 Nutrition Applications in Long Term Care, and DIET-2430 Life Cycle Nutrition-Nutrition through Adulthood or concurrent enrollment.
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.
Lecture: 1 hour
Prerequisite(s): DIET-2410 LCN-Pregnancy and Lactation or concurrent enrollment, DIET-2420 Life Cycle Nutrition - Nutrition for Children, and DIET-2430 Nutrition through Adulthood.

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): DIET-2501 Nutrition Applications in Long Term Care or concurrent enrollment.

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-1006 BLS Healthcare Provider
0.45 CEU's
This course is designed to teach the skills of CPR for victims of all ages [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-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-1029 Public Safety Dispatch
14 CEU's
Public Safety Dispatch (PSD) is a comprehensive training program designed to teach the basics of Public Safety Communications. This curriculum offers a balanced and broad education to students who plan to enter Public Safety Dispatch as a career. This dynamic course covers the terminology, techniques, and protocols required for excellence in Fire, EMS, and Police Dispatching.
Contact hours: 140
Not financial aid eligible.

ZEMS-1039 Advanced Paramedic Theory
13.4 CEU's
This class will help the student better understand the anatomy and physiology of the critically sick or injured patients.
Contact hours: 134
Not financial aid eligible.

ZEMS-1040 Priority Dispatch, Advanced
12.1 CEU's
This course prepares the student to function in a fast paced emergency dispatching situation. The training is designed to teach Police, Fire and EMS 911 call taking.
Contact hours: 121
Not financial aid eligible.

ZEMS-1041 BLS
0.45 CEU's
This course is designed to teach the skills of CPR for victims of all ages 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.

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. OAN Approved: OED005.
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 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-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 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 departmental 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 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: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and ECED-1010 Introduction to Early Childhood Education: Children’s Development and Program.

ECED-2600 CDA 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 center.
Lecture: 1 hours
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-282H 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-2890 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 Survey of Earth Science
3 Credits
[This course is cross-listed as PSCI-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.

ESCI-103L Survey of Earth Science Lab
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.
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: 3 hours
Laboratory: 2 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English 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-0980 Language Fundamentals I or appropriate score on English 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 OSC011(Course 1 of 2. Both must be taken).

ESCI-141H Honors Physical Geology
3 Credits
Honors course in Physical Geology. Materials and structures of the earth; processes and agencies by which the earths crust has been and is being changed; rocks and their mineral composition. Work of gravity, water, winds, and glaciers as agents of erosion; volcanoes and earthquakes as forces which change the surface of the earth. Emphasis on effects geological events and resources have had on human civilization. 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 (2 of 2 courses) and OSC011 (course 2 of 2, both must be taken).

ESCI-1510 Historical Geology
3 Credits
Geologic history of the earth and biota. Special emphasis on North America. Topics include plate tectonics, relative and absolute dating, rocks and their significance as indicators of environment, interpretation of geologic maps, evolution, fossilization, and major groups of fossils.
To fulfill laboratory science requirement, students should also enroll in related laboratory course.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.
OAN Approved: TMNS and OSC012 (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. Required field work is an integral part of this course.
Laboratory: 3 hours
Prerequisite(s): ESCI-1510 Historical Geology or concurrent enrollment.
OAN Approved: TMNS and OSC012 (Course 2 of 2. Both must be taken.).

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: 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-1812 Special Topics: Oceanography
3 Credits
This course introduces students to the ocean processes active at Earth's surface and their relationship to other components of Earth's overall environment and climate. Students will study marine biology, plate tectonics, oceanic circulation, marine sedimentation, and ecology. The course also surveys the relationship between natural ocean processes, human activities in the ocean, and the need to practice good stewardship of the oceans to prevent damage.
Lecture: 3 hours
Prerequisite(s): None.

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
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 I or appropriate score on English Placement Test, and must have earned an A or B in at least 3 honors courses.

ECON-2610 Principles of Macroeconomics
4 Credits
Nonsequential course which introduces language, tools, methods and topics of economic analysis. Study of detailed economy at the firm and industry level with emphasis on market theory (supply/demand), production, and price and output determination as they vary by market structure, and includes current problems and policy concerns.
Lecture: 4 hours
Prerequisite(s): MATH-0955 Beginning Algebra I or appropriate score on Math placement test to enroll in a 1000-level Mathematics course.
OAN Approved: TMSBS and OSS004.

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 hours
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-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 Approved: OED001. CTAN Approved: CTED001.

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 PRAXIS II and INTASC/Ohio standards.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OED002.

EDUC-1411 Individuals with Exceptionalities
3 Credits
Survey course covering the identification, developmental characteristics and intervention strategies for exceptional children and youth across education and community settings. Attitudes toward exceptional students, parenting exceptional children, and public laws and policies will be defined and discussed. Five hours of service learning in a special education setting required.
Lecture: 3 hours
Prerequisite(s): EDUC-1011 Introduction to Education.
OAN Approved: OED004.

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.

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-1010 Introduction to Microcomputer 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-1010 Introduction to Microcomputer or proficiency in Windows and MSOffice.

EET-1100 Introduction to Robotics
2 Credits
Introduction to direct current circuits, binary and hexadecimal numbering systems, signed numbers and elementary programming language statements (confined to programming a robot in laboratory component).
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.
Lecture: 4 hours
Prerequisite(s): ENG-1010 College Composition I; and eligibility for MATH-0965 Intermediate Algebra; or departmental approval.

EET-1160 Introduction to 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: 1 hour. Laboratory: 2 hours
Prerequisite(s): None.

EET-1180 Surface Mount Soldering
1 Credit
Develop skills using surface mount soldering equipment and techniques to facilitate design, construction and rework of circuit boards.
Laboratory: 2 hours
Prerequisite(s): None.

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-1210 AC Electric 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: 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
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, Ohms 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: 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.
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-2310 TCP/IP. 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-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-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): EET-1161 Direct Current Circuits, and departmental approval: admission to the Electric Utility Technology program.
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-2120 Electronics I and MATH-1540 Trigonometry, or concurrent enrollment.
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.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-2120 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 difference amplifier used in operational amplifiers. Additional topics include various uses of operational amplifier, voltage comparator, digital-to-analog converter (DAC), analog-to-digital converter (ADC), active filter circuits, oscillators and sample hold circuits.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-2120 Electronics I.
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
Introduction to biomedical program and to organization of hospital and/or health facilities. Study of anatomy and physiology as pertaining to safety checking, servicing and maintaining biomedical electronic equipment (such as ECG, EEG, electro-surgery units, defibrillators, infusion pumps, patient monitors, and other monitoring and diagnostic equipment). Hospital electrical safety and interaction with nursing staff and physicians continuously emphasized. Laboratory experiments on centrifuges, infusion pumps and electrosurgery units.
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 EKG machines, defibrillators, automated medtesters, patient monitors and ventilator. Emphasis on using various technical service manuals to repair these and other biomedical equipment. Safety checks performed on all biomedical equipment used in laboratory.
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.

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 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 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. CTAN Approved: CTEE003.

EET-2530 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 EET-2242 C and ASM Programming with Embedded Applications or concurrent enrollment; or departmental approval.

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-2812 Special Topics: Single Board Computers and Applications  
3 Credits

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), microprocessor architecture, flash and read/write memory, 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.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-2140 Digital Circuits/Microprocessors II, EET 1241 Digital Fundamentals; or EET-2242 C and ASM Programming with Embedded Applications; or IT-1010 Introduction to Microcomputer Applications, or IT-1060 Introduction to Windows; or departmental approval.

EET-2813 Special Topics: Cisco CCNA Networking Security  
3 Credits

This course provides a 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. The curriculum provides an introduction to core security concepts and skills needed to install, troubleshoot, and monitor network devices to maintain the integrity, confidentiality, and availability of devices and data. Upon completion of this course, students will have the skills required to develop a network security infrastructure, recognize threats and vulnerabilities in a network, and mitigate security threats. The course curriculum prepares students for the Cisco 210-260 IINS CCNA Security certification exam. The course curriculum meets that US National Security Agency (NSA) and the Committee on National Security Systems (CNSS) CNSS 4011 training standard. Students that pass the Cisco 210-260 IINS certification test are eligible for a letter of recognition that confirms they have met the CNSS 4011 security skills requirement which makes them eligible for many federal and private jobs.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): EET-1302 Cisco I Basic Networking Technologies and EET-1312 Cisco II Basic Routing 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 student is expected to perform 360 hours of service at a local hospital or other biomedical facility. Student is 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-2200 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 neuroanatomy, instrumentation, terminology of electrophysiological sciences and recording monitoring techniques utilized in determination of treatment plans for neurological disorders, and basic medical terminology.
Lecture: 2 hours
Prerequisite(s): None.

END-1310 Cardiopulmonary Physiology of Sleep
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, gas transport, oxygenation studies and control of ventilation.
Lecture: 3 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I, or BIO-233A Skeletal and Muscular Systems and BIO-233B Nervous, Integumentary, and Endocrine Systems; 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-1410 Beginning Polysomnography
2 Credits

Overview of the field of Polysomnography including job responsibilities, credentialing, medical ethics and patient confidentiality. Normal and abnormal sleep disorders, integrating the physiologic functions of the nervous, respiratory and cardiovascular systems. Emphasis on basic sleep sciences, physiology, monitoring, electrical safety, diagnosis and treatment of sleep disorders.
Lecture: 2 hours
Prerequisite(s): BIO-2331 Anatomy and Physiology I, and departmental approval: admission to the program.

END-1421 Intermediate Polysomnography I
2 Credits

Basic discussion of recording sleep apnea montage. Emphasis on equipment, principle of operation, associated activity related to normal and abnormal stages of sleep, and placement and calibration of the following: electroencephalography (EEG), electro-oculography (EOG), electromyography (EMG), pulse oximetry (Sp02), inductive plethysmography and airflow thermocouple. To fulfill program laboratory requirements, students should enroll in the related laboratory course.
Lecture: 2 hours
Prerequisite(s): END-1410 Beginning Polysomnography, and END-1310 Cardiopulmonary Physiology of Sleep, and concurrent enrollment in END-142L Intermediate Polysomnography I Lab.

END-142L Intermediate Polysomnography I - Lab
1 Credit

Laboratory course examines the recording of sleep apnea montage. Includes equipment, and principle of operation. Placement and calibration of the following: electroencephalography (EEG), electro-oculography (EOG), electromyography (EMG), pulse oximetry (Sp02), inductive plethysmography and airflow thermocouple. Designed to illustrate concepts covered in END-1421.
Laboratory: 2 hours
Prerequisite(s): END-1410 Beginning Polysomnography, and concurrent enrollment in END-1421 Intermediate Polysomnography I.

END-1430 Intermediate Polysomnography II
3 Credits

Presentation and discussion of cognitive and psychomotor practices related to interpretation of the polysomnogram for adult and pediatric patients. Emphasis on continuous positive airway pressure (CPAP) and bilevel positive airway pressures (BiPAP) equipment, artifact and troubleshooting of sleep montage results. Includes digital data acquisition, parasomnias, scoring, MSLTs, MWT’s and nocturnal penile tumescence.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-1421 Intermediate Polysomnography I, and END-142L Intermediate Polysomnography I - Lab, and END-1934 Polysomnography Directed Practice I.

END-1440 Neurophysiology of Sleep
2 Credits

Basic discussion of the neurophysiology of sleep and role of the autonomic nervous system. Emphasis on respiratory and cardiovascular effects, regulation of sleep, circadium rhythms, and maturation of the sleep stages addressing neonates to adults.
Lecture: 2 hours
Prerequisite(s): None.

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 specialize 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 obligate evoked potentials 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-1910 END Directed Practice I
4 Credits
Clinical electroencephalography experience in a selected neurodiagnostic lab, or an affiliated health care facility under the direct supervision of EEG technologist or physician. Emphasis on EEG concepts. Performance of EEG testing on clinical patients, medical record keeping and clinical history taking.
Lecture: 1 hour
Other Required Hours: Directed Practice: 15 hours per week.
Prerequisite(s): END-1350 Introduction to EEG, and concurrent enrollment in END-1450 Intermediate EEG, or departmental approval.

END-1934 Polysomnography Directed Practice I
3 Credits
Directed practice in the clinical setting in sleep laboratory or a sleep center. Departmental orientation, policies and procedures, individual body mechanics and patient transfer techniques. Emphasis in overseeing periodic cessation of respiratory activity based on placement and monitoring of the following: electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO2), inductive plethysmography and airflow thermocouple.
Other Required Hours: Directed Practice: 18 hours per week.
Prerequisite(s): END-1410 Beginning Polysomnography, END-1310 Cardiopulmonary Physiology of Sleep, and concurrent enrollment in END-1421 Intermediate Polysomnography I and concurrent enrollment in END-142L Intermediate Polysomnography I-Lab.

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, ethics, 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 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-2350 Fundamentals of Polysomnography
4 Credits
Overview of field of Polysomnography including job responsibilities and credentialing. Normal and abnormal sleep disorders, integrating the physiologic functions of nervous, respiratory, and cardiovascular systems. Discussion of recording sleep apnea montage, placement and calibration of diagnostic, electrodes, and associated equipment. Emphasis on monitoring, diagnosis, scoring, and treatment of sleep disorders. Continuous Positive Airway Pressure (CPAP) and Bilevel Positive Airway Pressures equipment, artifact and troubleshooting of sleep montage results.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): END-2411 Neurophysiology of EEG/Sleep Disorders, or departmental approval.

END-2400 Intraoperative Monitoring for Electroneurodiagnostic Technologists
2 Credits
Discussion of intraoperative monitoring of brains function during surgical procedures. Types of recordings, technologists role, recording parameters, reasons for surgical monitoring, and outcome of the surgery are presented.
Lecture: 2 hours
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG); or END-2911 END Directed Practice II, or concurrent enrollment, and END-1500 Basic Evoked Potentials.

END-2411 Neurophysiology of Electroencephalography/Sleep Disorders
3 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: 3 hours
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and END-1450 Intermediate Electroencephalography (EEG) or departmental approval.

END-2450 Neonatal/Pediatric Electroneurodiagnostic Technology
3 Credits
Discussion of recording neonatal and pediatric EEG and polysomnograms. Development of sleep-wake cycle, monitoring the EEG in neonatal and pediatric populations, and differential diagnosis based on polysomnographic variables.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): END-1450 Intermediate EEG; or departmental approval.

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-1910 END Directed practice I; or departmental approval.

END-2920 END Directed Practice III
4 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.
Lecture: 1 hour
Other Required Hours: Directed practice: 15 hours per week.
Prerequisite(s): END-2300 Nerve Conduction Studies, or departmental approval.

END-2930 END Directed Practice IV
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 children, medical record keeping and clinical history taking.
Lecture: 1 hour
Other Required Hours: Directed practice: 75 hours per semester.
Prerequisite(s): END-2450 Neonatal/Pediatric Electrodiagnostic or departmental approval.

END-2934 Polysomnography Directed Practice II
3 Credits
Directed practice in the clinical setting in sleep laboratory or a sleep center. Departmental orientation, policies and procedures. Assist adult and pediatric patient setup and discontinuance in monitoring electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO2), inductive plethysmography and airflow thermocouple. Emphasis on scoring a sleep montage related to respiratory cessation.
Other Required Hours: 18 hours per week in a sleep center.
Prerequisite(s): END-1421 Intermediate Polysomnography I, and END-142L Intermediate Polysomnography I Lab, and END-1934 Directed practice I and concurrent enrollment in END-1430 Intermediate Polysomnography II.

END-2990 Electroneurodiagnostic Capstone
1 Credit
Assessment of ones 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 hour
Prerequisite(s): END-2920 END Directed Practice III, or departmental approval.

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 National EMS Education Standards, January 2009 or later; and State of Ohio Emergency Medical Services 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.

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.
Lecture: 1 hour
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.

EMT-1310 Cardiopulmonary Resuscitation
1 Credit
This course is crosslisted as HLTH-1310. Credit can only be earned once for either course.) The CPR for Healthcare Providers teaches the management of respiratory and circulatory emergencies in adults, children, and infants. The Heartsaver First Aid teaches the management of illness and injury in the first few minutes until professional help arrives. Instruction and treatment methods to meet American Heart Association (AHA) or American Red Cross (ARC) standards for CPR.
Lecture: 1 hour
Prerequisite(s): None. CTAN Approved: CTEMS004.

EMT-1330 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.
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.

EMT-2340 Paramedic Theory II
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 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
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.

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 strok patient, EKG interpretation, cardiac and stroke treatment modalities, cardiac treatment pharmacology, defibrillation, and advanced cardiac life support.
Lecture: 4 hours. Laboratory: 3 hours
Other Required Hours: Directed Practice: 112 hours per semester
Prerequisite(s): EMT-2330 Paramedic Theory I, and departmental approval: Ohio EMT-B certification. CTAN Approved: CTEMS004.

EMT-2360 Paramedic Theory IV
6 Credits
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.

EMT-2370 Paramedic Theory V
5 Credits
Final course in sequence necessary for NREMT Paramedic Certification and State of Ohio Paramedic certification. Students will integrate knowledge and skills learned in previous courses in order to demonstrate competence in American Heart Association Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS); and American College of Surgeons or American College of Emergency Physicians approved trauma life support and National Association of EMT (NAEMT) medical life support standards. In the directed practice and field experience environment, they will demonstrate team leadership and integration with 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. CTAN Approved: CTEMS004.

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.

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 hour
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-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 of and practice of persuasive and argumentative writing with emphasis on analysis and research; reading and interpretation of selected texts. Course may be thematically organized.
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 hours courses.

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-2050 Personal & Reflective Writing
3 Credits
The examination of personal, narrative, and self-reflective writing from journals, memoirs, letters, essays, poetry, blogs, autobiographies, biographies, and other non fiction works through discussion, and various formal and informal writing assignments.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

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.

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 short story and novel 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-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-2805 Special Topics: Native American Literature
1 Credit
In this course, students will read and analyze several graphic novels as literature, but also as visual narratives, a term coined by comics pioneer Will Eisner. Visual narratives integrate words and imagery. Students will analyze this unique integration of words, images, sequences, inking, color and art. As children, we read comics for entertainment. We can do the same with some graphic novels, but this class asks is to do more. We will examine what we read in much greater depth. First, we will analyze what graphic novels in literary terms, exploring language, symbols, themes, characterization, story arc, and so on. Then we will integrate these literary concepts with the visual elements of the graphic novel. The graphic novel achieves something distinct from other literary forms in its synthesis of words and imagery. Understanding this synthesis is the goal of this course.
Lecture: 1 hours
Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I or departmental approval: equivalent coursework.

ENG-2807 Special Topics: African American Rhetoric
1 Credit
The African American rhetoric course will provide students an opportunity to explore the rhetorical framework of the iconic writings and speeches of African American leaders from movements such as the abolitionist movement and the civil rights movement. This course will focus specifically on the writings of Frederick Douglass, Harriet Jacobs (Linda Brent), W.E.B. Du Bois, Booker T. Washington, Dr. Martin Luther King Jr., and Malcolm X and the speeches of Fannie Lou Hamer. The writings and speeches embody the convictions that undergirded the abolitionist movement and the civil rights activism of the early 20th century, the 1950s, and the 1960s.
Lecture: 1 hours
Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.

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)

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 of basic grammatical forms and functions of American English and practice in producing them. Focus on form, meaning and use in 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 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. Practice in reading advanced texts and literary material. Practice in writing interpretive essays 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-1311 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, and improve pronunciation 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-1311 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-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 Departmental 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): ELS 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-1070 OSHA 501: Trainer Course in OSHA Standards for General Industry
3.6 CEU's
Corporate College has partnered with Mid-America OTI; an OSHA authorized training institute. Through this partnership, Corporate College offers OSHA authorized courses and successful completion will result in OSHA endorsed certificates. This course is designed for those who are interested in teaching the 10 and 30-hour General Industry Safety and Health outreach classes. This course authorizes the student to become a trainer in the Outreach Program and to conduct both 10 and 30-hour General Industry Safety and Health courses, and to issue cards to participants verifying course completion.
Contact hours: 36
Prerequisite(s): OSHA 511 Standards for General Industry and 5 years of general industry safety experience. A college degree in occupational safety and health, a Certified Safety Professional (CSP), Certified Industrial Hygienist (CIH) may be substituted for 2 years of experience.
Not financial aid eligible.

ZENV-1071 OSHA 511- Standards for General Industry
2.6 CEU's
Corporate College has partnered with Mid-America OTI, an OSHA authorized training institute. Through this partnership, Corporate College offers OSHA authorized courses and successful completion will result in OSHA endorsed certificates. This course covers Federal OSHA policies, procedures and standards, as well as general industry safety and health principles and is the prerequisite course to the OSHA 501 Trainer Course for General Industry. Topics include scope and application of the OSHA General Industry Standards. Special emphasis is placed on those areas that are the most hazardous in non-construction industries, using OSHA standards as a guide. Learn to apply the appropriate Federal OSHA standard that applies to hazards in General Industry.
Contact hours: 26
Not financial aid eligible.

ZENV-1075 OSHA 521: Guide to Industrial Hygiene
2.6 CEU's
General Industry Safety professionals interested in proactively addressing air contaminants and hazards should take this course which addresses industrial hygiene practices and related OSHA regulations and procedures. Topics include permissible exposure limits, OSHA health standards, respiratory protection, engineering controls, hazard communication, OSHA sampling procedures and strategy, workplace health program elements and other industrial hygiene topics. The course features workshops in health hazard recognition, OSHA health standards and safety and health program workshop.
Contact hours: 26
Not financial aid eligible.
ZENV-1076 OSHA 2225: Respiratory Protection  
2.6 CEU’s  
This course covers the requirements for the establishment, maintenance, and monitoring of a respirator program. Topics include terminology, OSHA standards, NIOSH certification, and medical evaluation recommendations. Program highlights include laboratories on respirator selection, qualitative fit testing, and the use of a large array of respiratory and support equipment for hands-on training. 
Contact hours: 26  
Not financial aid eligible.

ZENV-1077 OSHA 2255: Principles of Ergonomics  
1.8 CEU’s  
Any job activity that includes repetitive motion is an opportunity for injury and should be examined to ensure the worker is properly trained for the activity. This course covers the use of ergonomic principles to recognize, evaluate, and control work place conditions that cause or contribute to musculoskeletal and nerve disorders. Topics include work physiology, anthropometry, musculoskeletal disorders, use of video display terminals, and risk factors such as vibration, temperature, material handling, repetition, and lifting and transfers in health care. Course emphasis is on industrial case studies covering analysis and design of work stations and equipment, laboratory sessions in manual lifting, and coverage of current OSHA compliance policies. 
Contact hours: 18  
Not financial aid eligible.

ZENV-1078 OSHA 7105: Evacuation and Emergency Planning  
0.4 CEU’s  
Is your company prepared in the case of a major accident or natural disaster? Are your employees trained to know how to react? Evacuation and Emergency Planning focuses on OSHA requirements for emergency action plans and fire protection plans. Participants will learn reasons for emergency action plans, fire prevention plans and when they are required for a workplace, elements of a good evacuation plan, and features of design and maintenance of good exit routes. 
Contact hours: 4  
Not financial aid eligible.

ZENV-1079 OSHA 7200: Bloodborne Pathogens, Exposure Control for Health Care Facilities  
0.8 CEU’s  
The purpose of this course is to develop a bloodborne pathogens exposure plan for healthcare facilities using a step by step approach. Featured topics include an introduction to bloodborne pathogens standard, the exposure control plan, exposure determination, methods of control, vaccinations and evaluations, training and information, and record keeping. 
Contact hours: 8  
Not financial aid eligible.

ZENV-1080 OSHA 7205: Health Hazard Awareness  
0.6 CEU’s  
This course provides an introduction to common health hazards that are encountered in the workplace. These health hazards include exposure to: asbestos, silica, and lead. The course will feature identification of hazard, sources of exposure, health hazard information, evaluation of exposure, and engineering and work practice controls. It is a one-day course for employers and employees. 
Contact hours: 6  
Not financial aid eligible.

ZENV-1081 OSHA 7210: Pandemic Influenza  
0.55 CEU’s  
This course is designed to provide businesses and organizations performing general industry activities with the knowledge, skills and abilities to effectively plan for a local or regional influenza epidemic or a pandemic caused by an influenza virus. The target audience is private business leaders and members of their management team that may be integral to preparedness planning, including but not limited to, finance, security, safety and human resources. 
Contact hours: 5.5  
Not financial aid eligible.

ZENV-1082 OSHA 7210: Introduction to Safety and Health Management  
0.6 CEU’s  
Using interactive assignments and thought-provoking group projects, students of this one day workshop come away with a strong understanding of the benefits in implementing a safety and health management system in the workplace. 
Contact hours: 6  
Not financial aid eligible.

ZENV-1083 OSHA 7505: Introduction to Accident Investigation  
1.4 CEU’s  
Introduction to Accident Investigation provides the basic investigation procedures and describes accident investigation analysis techniques. This one day course helps participants gain the basic skills necessary to conduct an effective investigation at their workplace. - - Topics include the primary reasons for conducting an accident investigation, employer responsibilities related to workplace accident investigation, and a six step accident investigation procedure. 
Contact hours: 14  
Not financial aid eligible.

ZENV-1084 OSHA 7845: Recordkeeping  
0.4 CEU’s  
This course is designed to assist employees in identifying and fulfilling their responsibilities for posting certain records, maintaining records of illnesses and injuries and reporting specific cases to OSHA. Participants who successfully complete this course will be able to identify OSHA requirements and be able to complete OSHA forms 300, 300A and 301. 
Contact hours: 4  
Not financial aid eligible.

ZENV-1085 MA 7220: Hazardous Materials for First Receivers  
0.8 CEU’s  
Target Market: Hospital employees who may be exposed to contaminated or potentially contaminated patients and managers and supervisors who are expected to operate during hazardous materials emergencies. This training will address: "OSHA Best Practices for Hospital-Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances. Students completing this course will be able to recognize hazardous materials contamination incidents and basic safety precautions. Topics include hazardous materials related terminology, general protective procedures for hospital and staff, information gathering and patient care, preparation for standard and mass decontamination and decontamination team operations including selection of appropriate personal protective equipment. 
Contact hours: 8  
Not financial aid eligible.
Environmental, Health and Safety Technology (EHST)

ZENV-1088 OSHA 7300: Understanding OSHA's Permit-Required Confined Space Standard
0.7 CEU's
This course covers the requirements of the OSHA Permit-Required Confined Space Standard. Course topics include safety and health hazards associated with confined space entry, and the evaluation, prevention, and abatement of these hazards. The course covers OSHA requirements; it does not feature workshops (instrumentation, control methods and testing) which are included in the OSHA 2264 Permit-Required Confined Space Entry.
Contact hours: 7
Not financial aid eligible.

ZENV-1089 OSHA: Health Hazard Awareness
0.6 CEU's
This course covers common health hazards that are encountered in the workplace. These health hazards include exposure to chemicals, asbestos, silica and lead.
Contact hours: 6
Not financial aid eligible.

ZENV-1090 OSHA 7505: Introduction to Accident Investigation
0.75 CEU's
This course covers an introduction to basic accident investigation procedures and describes accident analysis techniques.
Contact hours: 7.5
Not financial aid eligible.

ZENV-1091 OSHA 7845: Recordkeeping Rule Seminar
0.4 CEU's
This course covers OSHA requirements for maintaining and posting records of occupational injuries and illnesses, and reporting specific cases to OSHA.
Contact hours: 4
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.

Environmental, Health and Safety Technology (EHST)

EHST-1301 Introduction to Environmental Technology
3 Credits
Comprehensive overview of topics relating to environmental technology field. Concentration on developing awareness of many facets of science, technology and public policy that are involved in environmental management.
Lecture: 3 hours
Prerequisite(s): None.

EHST-1310 Introduction to Environmental Law
2 Credits
Lecture: 4 hours
Prerequisite(s): None (ENG-1010 College Composition I recommended for students without prior knowledge of law).

EHST-1330 Hazardous Waste Operations and Emergency Response
3 Credits
Comprehensive instruction in health and safety planning and procedures for uncontrolled hazardous waste site work; hazardous waste treatment, storage or disposal facilities (TSDFs) work; and emergency responses to hazardous materials releases. Students must complete 40 contact hours of instruction to meet OSHA's certification requirements in training portion of 29 CFR 1910.120 (the "HAZWOPER" standard). Ten additional hours of lecture required to meet OSHA requirements.
Lecture: 2 hours
Prerequisite(s): None.

EHST-1350 Health and Safety in the Workplace
3 Credits
Introduction to occupational safety and health management in general industry. Includes in-depth exploration of Occupational Safety and Health Administration (OSHA) standards, Worker Compensation programs, and proactive safety promotion such as worker training and integration of safety into quality programs.
Lecture: 3 hours
Prerequisite(s): None.
EHST-1806 Special Topics: Basics of OSHA Compliance
2 Credits
This course will provide general OSHA content that includes OSHA compliance, reporting, record keeping and documentation. The course will include the OSHA mandated OSHA training modules so as to afford a student who successfully completes this course obtains both college credit and OSHA certification in each subject area. The students will be provided with OSHA training manuals and related OSHA information to assure knowledge and competency in these areas.
Lecture: 2 hours
Prerequisite(s): Recommend EHST-1350 Health and Safety in the Workplace.

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 EHST-1350 Health and Safety in the Workplace.

EHST-2220 EH&S Management Systems
2 Credits
Overview and history of EH&S management systems (MSs), focusing on the International Standards Organization 14000 series and the OHSAS 18000 series. Addresses MS auditing; setting an environmental/safety policy; specifying objectives and targets; risk assessments; waste minimization; the benefits of MS system certification; regulatory and certificate requirements; implementing MS programs; monitoring and measuring program results; and reviewing programs to ensure continual improvement. Uses case study to illustrate development of an EH&S management systems.
Lecture: 2 hours
Prerequisite(s): EHST-1310 Introduction to Environmental Law; or departmental approval.

EHST-2341 Hazardous Material Transportation
2 Credits
Detailed study of U.S. Department of Transportation (DOT) regulations as well as an introduction to international transportation organizations and their rules for air and vessel transportation. Students learn to interpret DOT regulations, recommend compliance strategies, and select packaging, labeling, documentation and placarding for selected hazardous materials.
Lecture: 2 hours
Prerequisite(s): EHST-1310 Introduction to Environmental Law; or departmental approval.

EHST-2351 Emergency Planning and Response
2 Credits
Develop emergency response contingency plan for a facility or community. Preparedness includes analyzing hazards, writing and implementing the contingency plans, training employees for an emergency, and evaluating the effectiveness of the contingency plan.
Lecture: 2 hours
Prerequisite(s): EHST-1310 Introduction to Environmental Law.

EHST-2361 Environmental Sampling and Analysis
4 Credits
Covers methodology of obtaining, managing and interpreting analysis results of environmental media samples including air, water, ground water and soil, and various waste samples. Quality control and quality assurance policies and procedures emphasized. Competency gained in interpreting results that can be used in decision-making processes related to hazardous materials.
Lecture: 3 hours. Laboratory: 3 hours
Prerequisite(s): MATH-1100 Mathematical Explorations or higher.

EHST-2380 Risk Assessment
2 Credits
Basic principles and methods of conducting a risk assessment. Examines both value and limitations of risk assessment. Focuses on environmental and health risks and includes an overview of toxicological principles. Reviews how risk management decisions are made in public and private sectors. Examines how to communicate environmental and health risk, public policy choices and trade-offs to public.
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 statutes, regulations and guidelines pertaining to hazardous 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 including "cradle to grave" requirements and enforcement strategies. Involves reading, interpreting, and summarizing sections from Code of Federal Regulations and the United States Code.
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-2940 Field Experience
1 Credit
Supervised paid or unpaid field experience, which relates to individual students occupational objectives. Students assigned to a facility, governmental institution, site, or project to study regulatory compliance of federal and state environmental health and/or safety laws and regulations.
Other Required Hours: Field Experience: 12-24 hours per week.
Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A and EHST-131B; and departmental approval.
Film (ZFLM)

ZFLM-1016 Intensive Film Crew Training Workshop
0 Contact Hours
Program is designed to prepare future film and media technicians and crew members for entry-level positions. Program developed with the help of the Greater Cleveland Film Commission and IATSE Local 209. The course provides a unique opportunity to learn directly from professionals successfully working on Cleveland feature film and commercial sets.

Contact hours: 150
Not financial aid eligible.

ZFLM-1019 Production Assistant (PA) Workshop
0 Contact Hours
This workshop is to help participants learn how to become a valuable production assistant in any department in the movie industry. These workshops will consist of two 6 hour days for a total of 12 hours of hands on instruction. Participants can expect to learn: • The role and hierarchy of each film department • The role of a PA within those departments. • Set terminology • Set etiquette • Walkie-Talkie etiquette • How to read sides and a call sheet • How to do a basic set lock up. • Spotting potential set hazards and what to do. • How to compose a resume for the film industry that will get you an interview.

Contact hours: 12
Not financial aid eligible.

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 we 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 3 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-1022 Broadcast Sports and Live Event Production Pilot Program
0 Contact Hours
The Sports and Live-Entertainment Production Pilot is designed to give enrolled students hands-on technical training and knowledge needed to acquire entry-level positions in the broadcast sports and live-event or AV industry. The hands-on training will be conducted using Image Video Teleproduction’s HD 30’ remote production truck and a smaller remote (flypack) set up. The lead instructor and director will be Pat Murray who recently retired from SportsTime Ohio/WKYC-TV as the Director of Baseball Operations and has 40 years in the broadcast industry, particularly sports.

Contact hours: 128
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, 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 Prometrics on behalf of the IRS; you must successfully pass all three parts to receive IRS-EA certification.

Contact hours: 156
Not financial aid eligible.

ZFIN-1047 Introduction to Budgeting
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 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.
Financial Management (FIN)

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-1340 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 hour
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.

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.

FIRE-1300 Fire Tactics and Strategy
3 Credits
Pre-planning of fire fighting operation, size-up fire scene, employment of fire personnel and equipment. Overall command pattern at fire scene.
Lecture: 3 hours
Prerequisite(s): Departmental approval: Successful completion of Fire Academy.

FIRE-1400 Chemistry of Hazardous Materials
2 Credits
Analysis of chemical reactions as causative agent of fire. Includes redox reactions, reaction rates, toxic compounds and hazardous combinations of chemicals. Safety procedures in handling hazardous materials, transporting and defusing them.
Lecture: 2 hours
Prerequisite(s): Departmental approval: Successful completion of Fire Academy.

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.

FIRE-1600 Fire Prevention
3 Credits
Provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspection; fire and life safety education; and fire investigation.
Lecture: 3 hours
Prerequisite(s): Departmental approval: Successful completion of accredited fire academy.

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.
FIRE-2351 Building Construction for Fire Protection
3 Credits
Provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.
Lecture: 3 hours
Prerequisite(s): Departmental approval. Completion of accredited Fire Academy.
FIRE-2401 Fire Protection Hydraulics and Water Supply
3 Credits
Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.
Lecture: 3 hours
Prerequisite(s): Departmental approval. Completion of accredited Fire Academy.
FIRE-2600 Fire Investigation Methods
3 Credits
Lecture: 3 hours
Prerequisite(s): Departmental approval. Successful completion of Fire Academy.
FIRE-2720 Fire Service Training and Public Relations
2 Credits
Methods and techniques of instruction for fire personnel. Organization of training programs and preparation of training materials. Study of public relations as related to fire service with emphasis on building good will and explanation of fire service activity in the community.
Lecture: 2 hours
Prerequisite(s): Departmental approval. Successful completion of Fire Academy.
FIRE-2730 Managing Fire Services
3 Credits
Capstone course in Fire Technology. Total management of effective fire and medical emergency services on immediate basis. Budget, personnel, labor relations, measurement and evaluation of productivity of service. Training and supervision of fire service personnel.
Lecture: 3 hours
Prerequisite(s): Departmental approval. Successful completion of Fire Academy.
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-2990 Fire Technology Professional Study
1 Credit
Capstone course in Fire Technology. 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 fire technology. Students will choose an area compatible with their interest and background, and facilitated by the instructor, prepare a report, presentation, resume, or a study.
Lecture: 1 hour
Prerequisite(s): Departmental approval. Successful completion of a minimum of 20 credits in FIRE.

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 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 & FFB4 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 shall be 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. This course shall cover the requirements for the Fire Officer Level I (NFPA 2003 Edition)  
**Contact hours:** 80  
**Not financial aid eligible.**

**ZEFR-1163 Fire Instructor Trainer-Blended**  
7 CEU's  
This course is designed for firefighters with five years of experience who wish to complete their instructor training in a combination of concentrated classwork and online learning.  
**Contact hours:** 70  
**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-1176 NFPA 3 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-1177 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-1178 Fire Officer III - Hybrid**  
8 CEU's  
Fire Officer III is geared toward the command level officer who is responsible for planning, budgeting, and upper management principles.  
**Contact hours:** 80  
**Not financial aid eligible.**

**ZEFR-1182 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-1186 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-1194 Confined Space Rescue Level II NFPA 1006**  
2.4 CEU's  
** 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.**
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: OFL002, and OFL005 (2 of 2 courses, both must be taken).

FREN-2010 Intermediate French I
4 Credits

Continued 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-2020 Intermediate French II
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-2040 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-2080 Language Fundamentals II
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-2090 Language Fundamentals II Honors
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-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): FREN-1010 Beginning French I or departmental approval.

FREN-2820 Independent Study/Research in French Honors
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): FREN-1010 Beginning French I or departmental approval.

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-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-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. 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 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 hour
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-1809 Special Topics: Life Management Study Skills
2 Credits
Information and methods helpful for development of intensive study skills for student success, reading comprehension, and retention, note taking, and test taking techniques. Stress management and coping skills techniques for life management and overcoming test anxiety will be practiced. Attention will also be given to empowering student to achieve student self-efficacy.
Lecture: 2 hours
Prerequisite(s): None.

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.

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-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.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): None.

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 two years 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
Introduction to meaning and scope of health as related to individual, family, community and society. Focuses on introspective view of physical, emotional, intellectual, social, occupational, environmental, and spiritual dimensions of health with emphasis on mechanism for positive behavior change.
Lecture: 3 hours
Prerequisite(s): None.

HLTH-1230 Standard First Aid and Personal Safety
1 Credit
Basic level first aid and one-person CPR course intended to provide knowledge and skills necessary to help sustain life and minimize the consequences of injury or sudden illness until advanced medical help arrives. Special emphasis placed on identifying and eliminating potentially hazardous conditions, recognizing emergencies and making appropriate decisions for first aid care. Upon successful completion, student is eligible for certification in First Aid/CPR/AED by the American Heart Association or the American National Red Cross.
Lecture: 1 hours
Prerequisite(s): None. CTAN Approved: CTBPO001.

HLTH-1310 Cardiopulmonary Resuscitation
1 Credit
This course is crosslisted as EMT-1310. Credit can only be earned once for either course. The CPR for Healthcare Providers teaches the management of respiratory and circulatory emergencies in adults, children, and infants. The Heartsaver First Aid teaches the management of illness and injury in the first few minutes until professional help arrives. Instruction and treatment methods to meet American Heart Association (AHA) or American Red Cross (ARC) standards for CPR.
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 ona 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 womens 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-1010 Basic Medical Transcription
1 Credit
Introduction to basic concepts of medical transcription with emphasis on transcription equipment, transcribing techniques, use of medical reference books, and practice in transcribing various reports.
Laboratory: 3 hours
Prerequisite(s): Departmental approval.
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.

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-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 acute 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-1431 Healthcare Informatics and Information Management
3 Credits
Introduction to using and understanding the Electronic Health Record (EHR), varieties of computerized health records, and other healthcare informatic software systems. Also includes introduction to project management software; strategic information systems planning; and software implementation in the healthcare setting.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, and HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care.

HIM-1451 Healthcare Informatics and Information Management
3 Credits
Introduction to using and understanding the Electronic Health Record (EHR), varieties of computerized health records, and other healthcare informatic software systems. Also includes introduction to project management software; strategic information systems planning; and software implementation in the healthcare setting.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, and HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care.

HIM-1482 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, and concurrent enrollment in HIM-1411 Healthcare Statistical Applications & Research, or departmental approval.

HIM-2160 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 HIM-1301 Introduction to Health Information Management or departmental 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. This course identifies key terms related to ICD-10-PCS, explains what the system is used for, and identifies the different sections contained within the PCS coding system: medical and surgical, obstetrics, placemto, 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): HIM-2160 Coding with ICD-10-CM, or 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): HIM-1411 Healthcare Statistical Applications & Research, and HIM-1423 Health Data Documentation, Sources and Classification Systems, and HIM-1431 Healthcare Informatics and Information Management.

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): HIM-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): HIM-2312 Quality Assessment and Improvement, or concurrent enrollment; or departmental approval.

HIM-2430 Medical Reimbursement Methodologies
2 Credits
Reimbursement issues and systems, including: compliance environment payors, 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-1411 Healthcare Statistical Applications & Research, and BIO-2600 Pathophysiology; or departmental approval.
OAN Approved: OHL022.

HIM-2440 Fundamentals of Healthcare Workflow and Process Analysis
2 Credits
Evaluation and analysis of workflow in a healthcare setting to facilitate redesign of that workflow. Intermediate capstone course for utilizing Microsoft Project Management Software for implementation of a project.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): HIM-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): BIO-2600 Pathophysiology, and departmental approval: admission to Cancer Registrar Post-Degree Certificate Program.

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-2820 Advanced Independent Study/Research in Health Information 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.

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-1301 Introduction to Health Information Management, and HIM-1411 Healthcare Statistical Applications & Research, and HIM-1423 Health Data Documentation, Sources and Classification Systems; and HIM-1431 Healthcare Informatics and Information Management, 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 (ZHTH)

ZHTH-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-1003 Dental Radiography: Radiation Protection Update
0.2 CEU's

This two-hour session provides dental assistants with the continuing education requirements necessary to maintain 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-1030 Managing Medical Emergencies for Dental Hygienists
0.4 CEU's

Medical emergencies can and do occur in the dental office environment. This course is designed to provide a review of the essentials of a comprehensive medical history, recognition of common medical emergency situations, office emergency protocols, basic airway management, prevention of emergency situations during dental appointments, and recognition of symptoms. This course meets the Ohio State Dental Board’s requirements for dental hygienists practicing when the dentist is not physically present.
Contact hours: 4
Not financial aid eligible.

ZHTH-1075 Medical Terminology
3.9 CEU's

Take Medical Terminology and build your skills in the health care field. This course is taught in a format designed to increase retention and introduces a variety of learning methods and practices. Learn the language of the fastest growing industry in our area.
Contact hours: 39
Not financial aid eligible.

ZHTH-1105 Comprehensive Patient Access Specialist Program
22.9 CEU's

Train for the high-demand position of Hospital Patient Access Specialist. Patient Access Specialists perform functions such as admissions, registration, financial counseling, pre-certification, guest relations, scheduling, and telecommunications. Upon completion of the program, you may test for your professional certification as a Certified Healthcare Access Associate (CHAA), offered by The National Association of Healthcare Access Management (NAHAM).
Contact hours: 229
Not financial aid eligible.

ZHTH-1262 Comprehensive Professional Medical Coding Program - Classroom
36.2 CEU's

This program is designed to train the student 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.
Contact hours: 362
Not financial aid eligible.

ZHTH-1279 Comprehensive Professional Medical Coding - Online
24.3 CEU's

The Medical Coding and Billing 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 through Anatomy and Physiology, Medical Terminology, and the AAPC’s Professional Medical Coding Curriculum.
Contact hours: 243
Not financial aid eligible.
ZHTH-1282 Community Health Worker (CHW) and Lay Navigator
25.5 CEU's
The community health worker (CHW) serves as a bridge between the community and the health care, government and social service systems.

Contact hours: 255
Not financial aid eligible.

ZHTH-1284 Essentials of Healthcare Informatics
9.8 CEU's
Healthcare Informatics is designed for information professionals, clinical personnel and health care support personnel who want to increase their knowledge of health information technology and prepare for the management of the complex social and organizational issues surrounding this major change in healthcare. Certification in Healthcare Informatics prepares students who already have experience in either an IT-related field, or a health profession to transition into the Healthcare Informatics workforce as effective members of teams that manage and perform the customization, implementation, integration and maintenance of healthcare information systems, data and components. It is recommended that students enrolling in this program already possess a bachelor’s degree.

Contact hours: 98
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
Overview of principles involved in critical and creative thinking with an emphasis on practical applications in the healthcare environment. A discussion of skillful 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.

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 ancient times to beginning of modern era.

Lecture: 3 hours
Prerequisite(s): None.

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, OHS042, 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 17th century to present.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS, OHS042, and OHS009 (1 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 (1 of 2 courses, both must be taken).

HIST-1510 United States History to 1877
3 Credits
Introduction to study of United States history from Age of Exploration to end of Reconstruction.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS, OHS043, and OHS010 (1 of 2 courses, both must be taken).

HIST-151H Honors United States History to 1877
3 Credits
Introduction to study of United States history from Age of Exploration to end of Reconstruction. Analysis of historical problems and use of primary sources in study of history.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS043, and OHS010 (1 of 2 courses, both must be taken).

HIST-1520 United States History Since 1877
3 Credits
Introduction to study of United States history from post Civil War/ Reconstruction to present.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS, OHS044, and OHS010 (1 of 2 courses, both must be taken).

HIST-152H Honors United States History since 1877
3 Credits
Introduction to study of United States history from post-Civil War/ Reconstruction to present. Analysis of historical problems and use of primary sources in study of history.
Lecture: 3 hours
Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or departmental approval.
OAN Approved: TMSBS, OHS044, and OHS010 (1 of 2 courses, both must be taken).

HIST-1610 American Studies
3 Credits
Introduction to American Studies. Discussion of selected issues and institutions in American civilization, multidisciplinary approach to subject matter utilizing concepts from various social science and humanities disciplines.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: TMSBS.

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-1610 American Studies
3 Credits
Introduction to American Studies. Discussion of selected issues and institutions in American civilization, multidisciplinary approach to subject matter utilizing concepts from various social science and humanities disciplines.
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-2020 Women, Science and Technology
3 Credits
[This course is cross-listed as WST 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.

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-2051 History of Russia to 1917
3 Credits
Growth, development and decline of Kievan state; evolution of Muscovite tsardom and expansion of Russian Empire to 1917. Geopolitical, social, cultural, and intellectual development of Russian state; emphasis on theory of tsardom which led to emergence of distinct civilization in Russia.
Lecture: 3 hours
Prerequisite(s): Any 1000-level history or political science course; or departmental approval.
OAN Approved: TMSBS.

HIST-2060 Modern Russian History and Politics
3 Credits
Development of U.S.S.R. since collapse of tsarist monarchy to dissolution of Soviet Union and Communist system. Origins, development, establishment of power and rule by Communist government, analysis of development and implementation of domestic and foreign policies.
Lecture: 3 hours
Prerequisite(s): Any 1000-level history or political science course, or departmental approval.
OAN Approved: TMSBS.

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 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 experiences 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, or departmental approval. OAN Approved: TMSBS.

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 appropriate score on English Placement Test.

HIST-282H Advanced Honors Independent Study/Research 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 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. Basic keys to successful career in service-based industry. Provides basis for understanding lodging and food and beverage through overview of industry in the Greater Cleveland area, nationally, and globally, and through examination of current trends. 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-1020 Sanitation and Safety
2 Credits

Examines sanitation and safety practices in food service and lodging establishments. Management oriented treatment for prevention of food borne illnesses using HACCP principles of safe food handling, sanitary design, care of facilities and equipment, pest control, self-inspection, and interpretation of food service laws. Causes and prevention of accidents and elementary first aid including Heimlich Maneuver and CPR. 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: CTCF002.

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 Math placement score; or departmental approval: industry 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 bridge to further analysis or study provided. Field trips 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): HOSP-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-1580 Front Office Operations.

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; and concurrent enrollment in HOSP-1580 Front Office Operations.

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-0955 Beginning 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 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-1020 Sanitation and Safety, and HOSP-1451 Contemporary Cuisine or departmental approval: industry related experience.

HOSP-1803 Hospitality FYE
1 Credit
The seminar engages students perusing a degree in Hospitality Management and introduces resources and skills necessary for student success. Topics will include personal responsibility, motivation, student support services, career and academic planning, time management, study and laboratory skills.
Lecture: 1 hours
Prerequisite(s): Concurrent enrollment in GEN-0010 New Student Convocation.

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-1940 Culinary Arts/Professional Baking Field Experience
1-3 Credits
Supervised on-site work experience in the student’s area of specialization. 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 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 presentations. 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 an 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.
Lecture: 1 hour. 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 a 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/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): None.

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. Models and theories used in prevention strategies. 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, using DSM-IV. Identify and discuss psychotropic and related medications. Identification of criteria to qualify consumers for services. Discussion of networking strategies. Development of advocacy strategies based on integration of course material. Basic legal issues and policies affecting consumers of mental health and substance addiction services. Exploration of Ohio Revised Code statutes relating to probate, commitment, retention, release, due process, patients rights, forensics, confidentiality and privacy act. Discussion of recent court decisions pertaining to mental health and substance addiction.
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
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. Supervised practicum of seven hours per week with emphasis on orientation, data collection, behavioral documentation, interpretation of behavior, and decision making relating to individuals and social systems.
Lecture: 3 hours
Other Required Hours: Practicum: 7 hours per week. Seminar: 1 hour per week.
Prerequisite(s): HS-1300 Introduction to Human Services, or 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. Emphasis on ethical considerations surrounding the 12 Core Functions. Examine confidentiality compliance requirements for practitioner and organizations, including HIPPA. Identify scope of practice skills and limitations. Explore personal inventory of ones skills, knowledge and boundary issues. Identify strategies to prepare for state examination, including a mock test. Students will demonstrate assertiveness, advocacy and stress management techniques and skills.
Lecture: 3 hours
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction, and Group Work.

HS-2210 Dual Diagnosis in Chemical Dependency
2 Credits
Signs and symptoms of behavior associated with mental illness and substance abuse/addiction. Assessment, models of treatment and case management issues. Agency organization, funding, assessment, and treatment with special populations.
Lecture: 2 hours
Prerequisite(s): HS-1101 Foundations of Substance Abuse, Addiction, and Group Work, or departmental approval.

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-1850 Introduction to Human Services Principles and Practices.

HS-2600 Systems Approach to Case Management
4 Credits
Development of a systems approach to human service delivery, with emphasis on macro and micro systems. Explore formal and informal systems. Develop skills to evaluate existing human services in community. Identify role of an advocate. Development of assessment skills for individuals and families through use of Genogram and Ecological Mapping tools. Practice in development of skills in assessment, planning, coordination, intervention, maintenance, and referral as integral part of case management. Emphasis on oral and written communication pertaining to case management.
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
4 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 existing service delivery system.
Lecture: 1 hour
Other Required Hours: Practicum: 14 hours per week. 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 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): None.
OAN Approved: TMAH.

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): None.
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.

HUM-175H Honors Forum: Critical Issues
3 Credits
Analysis of contemporary critical issues through their roots in past and present social, philosophical, and political attitudes and literature. Topics may vary with each offering, lecture, discussion, guest presentation, and multimedia presentation.
Lecture: 3 hours
Prerequisite(s): Appropriate score on English Placement Test to enroll in ENG-101H Honors College Composition I, or departmental approval.

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 hour
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.
ISO Training (ZISO)

ZISO-1039 Certified Quality Auditor (CQA)  
2.4 CEU's

This is a 6 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)  
3.3 CEU's

The Certified Quality Engineer Refresher course is designed for individuals preparing for the Certified Quality Engineer Exam. It provides a comprehensive review of the Body of Knowledge, established by the American Society for Quality (ASQ) and reinforces your understanding of a Quality Engineer’s role. This course will increase your skills using metrology and statistical methods to diagnose and correct improper quality control practices, as well as refresh your skills relating to applying and analyzing testing and inspection procedures. Achieving certification is a mark of excellence; it demonstrates that you have the knowledge and understanding to ensure the quality of products and services.
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 CMQ/OE Certification from the American Society for Quality (ASQ). The course will review the significant sections of the CMQ/OE 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

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. Modules include quality concepts and tools, statistical techniques, metrology and calibration, inspection and testing, quality audits, and preventive and corrective action. This course will prepare participants to take American Society for Quality’s (ASQ) Certified Quality Technician exam.

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 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. 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 your 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 the full range of auditing skills that will help you become a strong advocate in your company's effort to obtain maximum value from your commitment 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 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 internal auditor course is designed for both new auditors and existing internal auditors who need a thorough refresher of how to perform an internal audit to AS9100. Participants will gain an in-depth understanding of AS9100D and the tools to effectively prepare and conduct 1st and 2nd party audits to AS9100D. Through 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-1156 Plexus: ISO 13485/ FDA 21CFR820 QSR- Medical Devices Overview
0.8 CEU's
This one day course has been designed to provide an insight into the use of ISO 13485 as the basis for a quality management system implemented by medical device manufacturers. Time will be spent during the course reviewing requirements of ISO 13485 and making comparisons to ISO 9001 and the FDA’s Quality System Regulation. Participants engage in activities that foster an understanding of each standard element, the benefits of each element for their organization, and for them as participants in a business management system.

Contact hours: 8
Not financial aid eligible.

ZISO-1159 Value Stream & Process Mapping
2 CEU's
This course will focus on teaching participants methods to map business processes. The blended course includes 16 hours of classroom instruction and 2-4 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
Learn the concepts of ISO 9001:2015 through the use of hands-on, interactive learning. This course covers an in-depth, clause by clause review of the Standard.

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 void Murphy's Law; things that could go wrong don't have to when you learn to use Failure Modes and Effects Analysis (FMEAs) successfully. Additionally, 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 and the concept of 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 a foundational knowledge-base 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 the framework of how to implement and audit SPC fundamentals at your facility and develop a statistical toolbox that can be used for each of your projects that reflect the stability and capability of your manufacturing system. Furthermore, gain a better understanding of how to develop measurement studies for each of your projects that reflect the stability and capability of your measurement system. Identify the linkages between the measurement system, using techniques of measurement systems analysis (MSA) and the appropriate tools for defining its continued capability and effectiveness. In addition, this course includes activities to help you understand and audit your measurement system.

Contact hours: 16
Not financial aid eligible.

ZISO-1168 Plexus: Transitioning to IATF 16949:2016
1.6 CEU's

This 2-day training focuses on an in-depth review of the changes from ISO/TS 16949:2009 to ISO 9001:2015 and IATF 16949:2016. This training program provides participants with the necessary knowledge to support their organization in achieving compliance to ISO 9001:2015 and IATF 16949:2016. It is designed for experienced implementation team and other experienced representatives from key functional groups responsible for transitioning the organization’s quality management system to ISO 9001:2015 and IATF 16949:2016.

Contact hours: 16
Not financial aid eligible.

1.6 CEU's

During this on-site workshop, participants will complete a review of the changes to ISO 9001:2015 in order to assess the level of complexity of transitioning to the new standard and determine potential strategies and actions to ensure effective and efficient implementation. The workshop is carried out using a multi-disciplinary approach and is led by Plexus Master Trainers who craft the workshop to target an organizations specific challenges with transitioning to ISO 9001:2015.

Contact hours: 16
Not financial aid eligible.

IT Business/Management (ZMGT)

ZMGT-1019 Level 1: Introduction to Microsoft Project 2016
0.8 CEU's

This course provides a concise introduction to 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 2016 through a focus upon basic concepts, definitions, tools, strategies, processes and phases.

Contact hours: 8
Not financial aid eligible.

ZMGT-1020 Level 2: Microsoft Project 2016 Advanced
0.8 CEU's

This course provides advanced techniques of maintaining a project schedule in Microsoft Project 2016. The materials provide up-to-date information on maintaining a project schedule, troubleshooting schedule issues, and communicate project schedule status. The goal of this course is to impart an overall understanding of Microsoft Project through a focus upon basic concepts, definitions, tools, strategies, processes and the 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.
IT Design (ZDES)

ZDES-1026 Digital Marketing Bootcamp
14.4 CEU's

The Digital Marketing Bootcamp is designed for people seeking to transition into the growing field of digital marketing. The course is geared toward design, marketing and print advertising professionals who seek to gain basic technical skills and acquire a comprehensive overview of the core aspects of digital marketing. This intensive program will provide instruction on how to best use Facebook, Instagram, Twitter, Pinterest and LinkedIn for the purposes of selling a product or service in both B2B and B2C business models. Through following industry best practices and applying hands-on learning, participants will develop a portfolio to present on LinkedIn and will also present there digital marketing strategy, planned execution and content developed to business leaders.

Contact hours: 144
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'll 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.

IT Programming (ZPRG)

ZPRG-1029 Advanced Web HTML5, CSS3, Java
3 CEU's

Create dynamic web pages using the popular web-scripting language JavaScript. This course is for beginning programmers with prior knowledge of HTML. JavaScript adds interactive functions to HTML pages.

Contact hours: 30
Not financial aid eligible.

ZPRG-1048 Cleveland Codes: Tri-C Software Developers Academy
112 CEU's

This 24-week immersive program provides students with the skills necessary to pursue a career in web application and development, learning to program C# within the .NET framework.

Contact hours: 1120
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.
Industrial Maintenance (ZINM)

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-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 industry wide accepted certification that recognizes 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 the individuals in finding higher-wage jobs and the employers to increase 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-1081 MRP Customized Mechanical Blueprint Reading
1 CEU’s
This customized course teaches you how to recognize the technical communication used through drawing language and how basic concepts are applied in a manufacturing environment. Learn how to read and interpret blueprints and study different views of an object including dimensioning techniques, tolerance methods, and drawing notes.
Contact hours: 10
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.

Information Technology (IT)

IT-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 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.

IT-1010 Introduction to Microcomputer Applications
3 Credits
Overview and introduction to techniques and skills used on the microcomputer in a Windows environment. Introductory level instruction and hands-on training in file management, word processing, computerized spreadsheets, database management software, presentation graphics, electronic mail and Internet. Practical applications in creating, editing, saving, and printing computer generated materials.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Recommend BT-1000 Keyboarding and Document Formatting for students who have not previously taken a keyboarding/typing course.
OAN Approved: OBU003 CTAN Approved: CTIT001
IT-101H Honors Introduction to Microcomputer Applications  
3 Credits  
Introduction to Microcomputer concepts and applications from a business problem perspective. Emphasis on business applications spanning multiple platforms and, including file management, communications, word processing, spreadsheets, database management, presentation software and the Internet. Course objectives will be met utilizing a variety of online resources in lieu of or in addition to a traditional text book.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None.

IT-1040 Microcomputer Operating System  
3 Credits  
Overview of microcomputer operating systems and their role in hardware, software and data management. Hands-on skill development in use of current microcomputer operating system.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers; or departmental approval: equivalent knowledge or skills.

IT-1050 Programming Logic  
3 Credits  
Language-independent course introducing computer program design and development. Identification and solution of business problems emphasized. Structured flow charts, hierarchy charts and pseudocode used in program description and design.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers; or concurrent enrollment.

IT-1060 Introduction to Windows  
2 Credits  
Basic study of graphical user interface using Windows operating system. Emphasis on windowing concepts and commands, running application programs, managing files and transferring data. Includes use of Windows help system, utilities, accessories and web browsers.  
Lecture: 1 hour. Laboratory: 2 hours  
Prerequisite(s): None.

IT-1100 Fundamentals of iOS Application Development  
3 Credits  
Introduction to the approach and technologies required for iOS (iPhone/iPad/iPod) application development. Technologies introduced will include: download and installation of software, Xcode, iPhone Simulator, Objective-C, Cocoa Touch, MVC and application marketing and distribution. Mac computer required with ability to download/install software.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None.

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-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-2100 iOS Application Programming  
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-2110 Android Mobile Application Development  
3 Credits  
Object-oriented programming course in Visual Basic for Applications (VBA). Investigation of the Excel object model as it relates to the creation of functions and procedures within VBA programming constructs. Strong emphasis on business applications.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): IT-1050 Programming Logic.
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-1050 Programming Logic, and MATH-0955 Beginning Algebra or 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-2650 Java Programming.

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-2813 Special Topics: Introduction to Big Data Analytics
3 Credits
Harnessing the power of data is key in supporting today's business decisions. Explore big data types, tools and methods used by Data Scientists.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers.
IT-2819 Special Topics: Python Programming

**4 Credits**

Python is a widely used general-purpose, high-level programming language. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than would be possible in languages such as C# or Java. The language provides constructs intended to enable clear programs on both a small and large scale.

*Lecture: 3 hours. Laboratory: 2 hours*

**Prerequisite(s):** IT-1050 Programming Logic or departmental approval: equivalent industry experience.

**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 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 in 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.
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-1100 Welding Blue Print Reading
2 Credits
Explore the techniques of blueprint reading and welding symbols related to the welding field, including the proper way to read and apply measurements and dimensioning pertaining to industrial blueprints and metal specifications. The student will also learn how to understand and interpret views and translate measurements and dimensions.
Lecture: 2 hours
Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate score on Math Placement test to enroll in MATH-0955 Beginning Algebra.

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, Kirchhoff'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, Kirchhoff'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
This course gives the student skills in Gas Metal Arc Welding (MIG), with extensive guided instruction provided. Prepares a student for the MIG certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.
ISET-2110 Gas Tungsten Arc Welding (TIG)
4 Credits
This course gives the student skills in Gas Tungsten Arc Welding (GTAW-TIG), with extensive guided instruction provided. Prepares a student for the TIG certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2120 Shielded Metal Arc Welding (STICK)
4 Credits
This course gives the student skills in Shielded Metal Arc Welding (STIG), with extensive guided instruction provided. Prepares the student for the STIG certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2130 OxyFuel Gas Welding
4 Credits
This course gives the student skills in OxyFuel Gas Welding, with extensive guided instruction provided. Prepares a student for the OxyFuel Gas Welding certification test.
Lecture: 2 hours. Laboratory: 4 hours
Prerequisite(s): ISET-1100 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-2150 Robotic Welding
3 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: 1 hour. 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-1100 Welding Blue Print Reading, and ISET-2100 Gas Metal Arc Welding (MIG).

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: 1 hour. Laboratory: 2 hours
Prerequisite(s): ISET-2200 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): ISET-2500 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): ISET-2510 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): ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I, and ISET-2500 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 an understanding of basic construction and field terminology, use of field equipment, and understanding and interpreting 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-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-1010 Introduction to Microcomputer 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-1010 Introduction to Microcomputer Applications, INTD-1100 Hand Drafting and Sketching for Interiors, INTD-1111 Introduction to Interior Design, MATH-1000 level or higher or concurrent enrollment; or departmental approval.

INTD-1130 Architectural Drafting for Interiors II
3 Credits
Introduction to REVIT 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. Advanced computer-aided drafting (CAD) utilized to complete millwork drawings.
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-1300 Color and Light in Interiors
3 Credits
Introduction of color theory and light for interior spaces. Emphasis on color selection for the interior environment, color psychology, color trends and forecasting and how light affects color and design elements in spaces.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design.
INTD-1330 Coordinating Spaces
3 Credits
Introduction to coordinating spaces by developing and enhancing an interior environment through furniture, fabrics and accessories. Emphasis on identifying and developing skills required to form spatial sequences as well as the use of interior elements in decorating.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): INTD-1300 Color and Light in Interiors, INTD-2330 Interior Design Materials and Sources, and INTD-2320 History of Interiors, or concurrent enrollment.

INTD-1350 Business of Interiors
3 Credits
Introduction to business practices used in decorating interior spaces. Emphasis on professional ethics and business conduct, building professional relationships, effective communications with clients and industry professionals. Provides a foundation in design sales procedures and protocols.
Lecture: 3 hours
Prerequisite(s): INTD-2330 Interior Design Materials and Sources.

INTD-1400 Interior Decorating Field Experience
1 Credit
Field experience in Interior Decorating. Students placed in practical work environments under college supervision. Interaction with professionals in the field and application of skill 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-2320 History of Interiors, or concurrent enrollment, INTD-1300 Color and Light in Interiors, INTD-1330 Coordinating Spaces, or concurrent enrollment, and INTD-1350 Business of Interiors, or concurrent enrollment, and 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-1050 Drawing I, or concurrent enrollment, and 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, INTD-2380 Fundamentals of Lighting, INTD-2430 Architectural Materials and Methods, and VC&D-1015 Digital Studio Basics or concurrent enrollment; or departmental approval.

INTD-2320 History of Interiors
3 Credits
History of development of furnishings, ornaments, interiors and architectural details from Egyptian through prominent 20th century movements to present.
Lecture: 3 hours
Prerequisite(s): INTD-111 Introduction to Interior Design, and ART-2020 Art History Survey: Prehistoric to Renaissance and ART-2030 Art History Survey: Late Renaissance to Present.

INTD-2330 Interior Design Materials and Sources
3 Credits
Review various interior finishes and materials through lectures, field trips, projects, and research assignments. Information presented on material and finish production, estimating, sources and showrooms. Criteria for specifying materials and finishes of interior spaces using Construction Specifications Institute (CSI) MasterFormat specifications and Furniture, Finishes and Equipment (FF&E) specifications.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-1111 Introduction to Interior Design, and INTD-1100 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.
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.

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 Presentation.

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.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): INTD-1120 Architectural Drafting for Interiors I, and INTD-2330 Interior Design Materials and Sources.
INTD-2460 Interior Design Presentation
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-1015 Digital Studio Basics.

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, and departmental approval.

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 create a unique, robust, and interactive websites. This course teaches you how to effectively use all the major tools involved in web design to create a site that is both attractive and functional. Focus on the fundamentals of designing and publishing home pages with the HTML language.
Contact hours: 30
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.

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.

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-182H Honors Independent Study in Japanese
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.

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-1011 Beginning Japanese Language and Culture I, or departmental approval.

JAPN-2021 Intermediate Japanese Language and Culture II
4 Credits
Continued study of modern Japanese in social and cultural context. Emphasis on communicative listening and speaking skills. Discussion of topics on Japanese culture and society. Reading and writing longer texts and compositions expressing more complex ideas, integrating 150-200 new kanji. Completion of Japanese grammar foundation. Class interaction, audio, video, and computer lab.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): JAPN-2011 Intermediate Japanese Language and Culture I, or departmental approval.

JAPN-2411 Advanced Japanese Language and Culture I
3 Credits
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): JAPN-2021 Intermediate Japanese Language and Culture II, or departmental approval.
JAPN-2421 Advanced Japanese Language and Culture II
3 Credits
Modern Japanese in social and cultural context. Further development of focused listening and conversation skills. Discussion of aspects of Japanese politics and economy. Reading 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.

Journalism and Mass Communication (JMC)

JMC-1011 Introduction to Mass Communication
4 Credits
Examines basic concepts involved in the study of mass communication, including historical, theoretical, and practical application of print, audio visual, electronic, international, and persuasive forms of these media.

Lecture: 4 hours
Prerequisite(s): ENG-0980 Language Fundamentals I or appropriate score on English Placement Test.

JMC-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.

JMC-1410 Staff Practice
1 Credit
Class laboratory experience in assembling, making-up and publishing College newspaper. Detailed weekly analysis of effectiveness of news stories written and published and overall presentation of College newspaper. Students assigned to College newspaper staff.

Laboratory: 2 hours
Prerequisite(s): Concurrent enrollment in JMC-2010 News Writing, or departmental approval: comparable knowledge or skills.

JMC-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.

JMC-1813 Special Topics in Public Relations Programming
3 Credits
Students will obtain a basic understanding of the public relations profession, learn the importance of PR programming, and develop a public relations program for an on-campus organization or activity.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): None.

JMC-1814 Special Topics: Sports Writing
3 Credits
Sports Writing will teach 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 learn the specific language and enthusiasm level needed for writing for a sporty audience.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): JMC-2000 Media Writing or Departmental Approval.

JMC-1815 Social Media and Blogging
3 Credits
This course introduces students to blogging, Facebook, Twitter, LinkedIn and other kinds of social media as an important, natural evolution of modern journalism through PowerPoint lectures, screening of film and selected text. This course examines social media of all kinds and teaches students about using social media for fun and profit. In addition, this course examines the effects of social media on politics and sociological behavior.

Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I.

JMC-1820 Independent Study/Research in Journalism and Mass Communication
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.

JMC-182H Honors Independent Study/Research in Journalism/Mass Communication
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.
JMC-2000 Media Writing
3 Credits
Introduction to writing skills necessary for professional media such as news, print, broadcast, public relations and advertising. Emphasis also on the writing process, grammatical style sheets, audience concerns and an in-class, professional presentation of written materials.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): ENG-102O College Composition II or ENG-102H Honors College Composition II

JMC-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.

JMC-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.

JMC-2220 Broadcast Journalism
3 Credits
Lecture: 3 hours
Prerequisite(s): JMC-1011 Introduction to Mass Communication.

JMC-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 JMC-1011 Introduction to Mass Communication, or JMC-1310 Film Appreciation, or departmental approval.

JMC-2410 Television Production
3 Credits
Introduction to basic concepts of video production. Emphasis on operation of video cameras, microphone placement, lighting, editing and post- production equipment. Teamwork and group production emphasized.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): JMC-1011 Introduction to Mass Communication, or departmental approval: comparable knowledge or skills.

JMC-2420 Advanced Television Production
3 Credits
Advanced television production and operations, to include hands-on training with studio and field equipment. Theories and processes of producing and directing video programs, including script writing, visualization, personnel management and budgeting. Includes multicamera and single-camera production, and video editing techniques. Teamwork and group production emphasized.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): JMC-2410 Television Production.
OAN Approved: OCM010.

JMC-2820 Advanced Independent Study/Research in Journalism and Mass Communication
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.

JMC-282H Advanced Honors Independent Study/Research in Journalism/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.

JMC-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.
Knowledge Management (ZKNO)

ZKNO-1001 OnBase® System Administrator
3 CEU's

The OnBase® Certified System Administrator course is an three week intensive training on how to effectively use, maintain and administer OnBase. The course is led by Hyland Software training professionals and provides an immersive, hands-on experience that prepares participants to become certified OnBase System Administrators. 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: 30
Not financial aid eligible.

ZKNO-1002 ScrumMaster Certification Course
1.6 CEU's

A Certified ScrumMaster® helps project teams properly use Scrum, increasing the likelihood of the project's overall success. CSMs understand Scrum values, practices, and applications and provide a level of knowledge and expertise above and beyond that of typical project managers. CSMs 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-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-1095 Problem Solving
0.4 CEU's

Contact hours: 4
Not financial aid eligible.

ZLDR-1134 Emotional Intelligence
0.6 CEU's

This valuable seminar delivers the basic knowledge and practical skills you need to ensure that you are a strong, emotionally intelligent leader.

Contact hours: 6
Not financial aid eligible.

ZLDR-1140 Essentials of Leadership
0.4 CEU's

The essence of being an effective people leader lies in establishing good interpersonal work relationships and having the ability to spark action in others. During the course, participants learn a set of essential skills to meet both practical business needs and people's personal needs. Participants acquire a set of proven interaction skills, discover seven Leadership Imperatives for meeting today's challenges, and realize their role as a catalyst leader – a leader who inspires others to act.

Contact hours: 4
Not financial aid eligible.

ZLDR-1141 Leading Change
0.8 CEU's

In today's fast-paced, global business environment, external forces—technology, regulations, mergers, the economy— are forcing companies to change their business practices to stay competitive. Their ability to "shift gears" and minimize the impact of change is key to ensuring they cross the finish line ahead of competitors. This course focuses on leaders' crucial role in initiating change in the workplace. Leaders learn how to introduce a change initiative and lead discussions with employees to explore how best to implement the changes. They also learn to help others overcome their resistance to change. These skills enhance a leader's ability to minimize the potentially negative effects of change on morale, processes, and productivity.

Contact hours: 8
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 to use coaching and reinforcing skills to be a catalyst for high performance and continuous improvement.

Contact hours: 4
Not financial aid eligible.

ZLDR-1148 Influencing Others
0.4 CEU's

Contact hours: 4
Not financial aid eligible.

ZLDR-1149 Presenting Data to Sell Your Point
0.8 CEU's

Have you ever had trouble getting a client or boss to buy into your idea? You're not alone. This course will provide you with the methods necessary to prepare and present data to effectively inform or persuade your audience. You will learn to interpret and organize data to make your case, present data in a visual form to effectively communicate your message, and persuade your audience to buy into your idea.

Contact hours: 8
Not financial aid eligible.
ZLDR-1151 Change Management
0.3 CEU's
DFAS contract training - OE Strategies materials
Contact hours: 3
Not financial aid eligible.

ZLDR-1161 Increasing Your Emotional Intelligence
0.8 CEU's
Learn to define and practice self-management, self-awareness, self-regulation, self-motivation and empathy. Understand, use and manager your emotions. Verbally communicate with others and successfully communicate with others in a non-verbal manner. Identify the benefits of emotional intelligence and relate emotional intelligence to the workplace. Balance optimism of emotional intelligence and effectively impact others.
Contact hours: 8
Not financial aid eligible.

ZLDR-1169 Just Be F.A.I.R.
0.4 CEU's
Diversity in the workplace is about the similarities and differences among all the groups that make up the organization. Just Be F.A.I.R.: A Practical Approach to Managing Diversity in the Workplace is designed to help people recognize and respond to those similarities and differences and understand what diversity really is and when it matters most in the workplace. In order for organizations to stay competitive, deal with change, and become an employer of choice, both people and organizations need to become culturally competent. One of the ways cultural competence can be developed is by using the F.A.I.R. Approach. This program introduces the F.A.I.R. Approach as a practical way to help your managers and employees understand and support the organization's commitment to fairness. It will also improve their ability to relate to the people important to your success—co-workers, managers, customers, and suppliers.
Contact hours: 4
Not financial aid eligible.

ZLDR-1197 Communication Skills for Managers (Online)
2 CEU's
The Communications Skills for Managers course provides students with an overview of effective methods of communication for managers. Students gain a working knowledge of the difference between hearing and listening, and will apply strategies for improving listening, speaking, and writing skills. In addition, students will examine methods of delivering criticism, asking questions, and teaching someone a process. The course also covers how to create effective business communications, such as presentations and documents.
Contact hours: 20
Not financial aid eligible.

ZLDR-1201 Dynamic Presentation Skills (8 hrs)
0.8 CEU's
Transform yourself from an inexperienced speaker to skilled presenter. In this eight-hour workshop you will learn to present your thoughts and ideas with conviction, control and self-confidence. You will gain the specific skills and direction you need to become comfortable with your own presentation style. You will receive expert advice on how to handle especially challenging situations. Most importantly, you will learn how to present by preparing a presentation, presenting in front of a group and receiving useful and timely feedback.
Contact hours: 8
Not financial aid eligible.

ZLDR-1207 Generations: M.E.E.T. for Respect in the Workplace
0.4 CEU's
Generations turns the challenge of multiple generations in the workplace into a competitive advantage. By applying the M.E.E.T approach to the complexities of effectively working in a multigenerational workforce, emerging leaders gain insights, strategies and skills that help minimize generational conflict and strengthen collaboration.
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-1211 Frontline Leadership
0.2 CEU's
Employees that exceed expectations in their daily work are often promoted into leadership roles. The transition from support staff to leader is often a challenging one. Although technical and functional expertise is necessary, it doesn't necessarily equate to being a good leader. Without the additional skills needed to communicate effectively, engage and lead others, the transition can be difficult and unsuccessful.
Contact hours: 2
Not financial aid eligible.

ZLDR-1212 Handling Conflict at Work
0.4 CEU's
Conflict in the workplace is a given; although 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. And the best leaders have learned that effective communication is as much about listening to others as 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 responsibility 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 it 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 an entire career.
Contact hours: 4
Not financial aid eligible.

ZLDR-1216 Becoming a Team Player
0.4 CEU's
Team work is critical to an organizations 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. Easier said than done; what is deemed as professional in one circumstance may not be in another. Today's organizations are multi-cultural, multi-faceted and multi-tasking; 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, accountable for their actions and maintain a positive attitude to be thought of as a professional in today's ever-changing work place.
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 quick, and your left asking yourself "what did I do?" Chances are nothing; you were just dealing with a difficult person. Most times we can avoid or minimize our interactions with difficult people, but sometimes they are unavoidable; co-workers, customers, maybe even our boss. The best way to handle difficult people is to be aware and prepared for their behaviors and 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 create the entire perception a customer has of an organization. One bad experience can result in not only losing that customer but losing future customers. Studies show that a satisfied customer may tell 2-3 people about their experience, dissatisfied customers will tell from 8-20. However, even an unhappy customer will become a loyal customer if you resolve their complaint fast, fair and friendly.
Contact hours: 4
Not financial aid eligible.

ZLDR-1224 Equity Trust Company - Leadership Development Program
3.7 CEU's
This program will be designed for the Directors and Managers of ETC. These leaders provide the day-to-day thinking, planning and management that keep the business on track. They drive their organization to focus on critical priorities and are the people who can make change happen at ETC. The purpose of this program is to broaden the participant's perspective and increase his/her long-term integrated strategic thinking capabilities. Corporate College will work with ETC to define the most appropriate content and schedule for all the training activities associated with the program.
Contact hours: 37
Not financial aid eligible.

ZLDR-1226 Effective Communication (9 hrs)
0.9 CEU's
This course is an introduction to the basic concepts relevant to understanding the role of communication in the workplace. Discover how to create messages that are clear and concise. Learn about the strengths of the different styles of communication and how to improve business relationships. You will also learn techniques for active listening and how to overcome barriers to effective business communication.
Contact hours: 9
Not financial aid eligible.

ZLDR-1227 Understanding Your Strenghnts (6 hrs)
0.6 CEU's
This workshop is based on the best-selling "StrengthsFinder 2.0" by Tom Rath and the accompanying assessment developed by psychologist Donald O. Clifton. Called "the father of strengths-based psychology," Clifton developed an assessment program that allowed individuals to identify their strengths, then build on them and integrate them into their daily lives. Participants have the opportunity to identify and learn about personal strengths, how their unique talents can best be used and how these strengths work together in the workplace.
Contact hours: 6
Not financial aid eligible.

ZLDR-1228 Managing Conflict in the Workplace (9 hrs)
0.9 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: 9
Not financial aid eligible.
ZLDR-1230 Increasing Your Emotional Intelligence (6 hrs)  
0.6 CEU's  
Contact hours: 6  
Not financial aid eligible.

ZLDR-1231 Increasing Your Emotional Intelligence (4 hrs)  
0.4 CEU's  
Learn to define and practice self-management, self-awareness, self-regulation, self-motivation and empathy. Understand, use and manager your emotions. Verbally communicate with others and successfully communicate with others in a non-verbal manner. Identify the benefits of emotional intelligence and relate emotional intelligence to the workplace.  
Balance optimism of emotional intelligence and effectively impact others.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1232 Coaching: Bringing Out the Best in Others (4 hrs)  
0.4 CEU's  
Do you have a knack for helping others do their best? Would you like to polish your skills? Coaching is an exciting performance improvement model that will help you in your work as a supervisor, manager, human resource professional or counselor. Learn how to bring out the best in people through mentoring and guided goal setting. Learn a simple 4-step model to get agreement, create solutions, and achieve follow-through and recognition. Create rich workplace relationships as you facilitate the success of others, thereby creating your own.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1233 Individual Contributor Program  
2 CEU's  
The goal of the 2.5-day session is to provide individual contributors (IC) the tools needed to effectively contribute to the success of projects and team goals, help them to model American Greeting's mission, vision, value behaviors and to practice authentic communication. Two instructors will lead a series of highly interactive modules focused on: Understanding Yourself and Others, Fostering Teamwork, Building Partnerships and Problem Identification and Solving. Additionally we will help the ICs create a community to support each other in the short and long term. To this end we will host kick off meetings prior to the start of the program and we will provide social media tools that will be used before, during and after the formal classroom sessions. Our purpose is to enhance the IC's managing and leading skill as they work to achieve our strategic goals.  
Contact hours: 20  
Not financial aid eligible.

ZLDR-1235 Essentials of Interviewing (4 hrs)  
0.4 CEU's  
The best hiring decisions result in productive employees who enjoy their responsibilities and contribute to your organization's success. Interviewers make the best hiring decisions when they gather meaningful, job-related information from applicants. This course teaches participants how to interview for the behaviors, knowledge, and motivations that are needed to be successful in a job.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1236 DiSC and Train the Trainer Workshop  
0.8 CEU's  
Workshop participants will complete the DiSC Classic instrument, a mathematically precise model that helps people measure and explore the interpersonal dynamics of their relationship. During the first hour of the training, participants will discover their primary and secondary behavioral styles as well as the interrelatedness of different DiSC styles. The second part of the workshop will be focused on training the trainer.  
Contact hours: 8  
Not financial aid eligible.

ZLDR-1237 Building Customer Relationships  
0.8 CEU's  
Facilitator will deliver a sales training workshop that will incorporate findings from the Needs Assessment that was compiled, which included the gaps in the account managers sales acumen and desired learning outcomes.  
Contact hours: 8  
Not financial aid eligible.

ZLDR-1240 Achieving Your Leadership Potential  
0.4 CEU's  
This course bridges the widening gap between what is needed and required of today's leaders. A three-step process—Diagnose, Plan, and Execute—helps learners stretch their capabilities and accelerate their leadership development.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1242 Zircoa Mgt Development Prog  
4.4 CEU's  
This program will provide participants with a professional and personal development opportunity that encourages employee engagement, promotes effective communication, and increases overall work effectiveness.  
Contact hours: 44  
Not financial aid eligible.

ZLDR-1243 Fostering Teamwork  
0.4 CEU's  
The goal of the workshop is to help project teams work collaboratively to complete their projects and to deliver compelling presentations. Additionally this session provides an opportunity to get to know fellow team members on a more personal level which will hopefully foster more unity and respect for one another. This session will teach participants what is involved with working in teams and how to best contribute to the team's success.  
Contact hours: 4  
Not financial aid eligible.
ZLDR-1245 Delivering Great Customer Service and Effective Communication 0.8 CEU’s

Looking to take the Frontline Manager Certificate Program? Want to get it completed in a short amount of time? We have grouped Delivering Great Customer Service and Effective Communication to help you do just that. Just sign up for this one day course and meet two of the 10 requirements to obtain your certificate. Delivering Great Customer Service: Customer service has the power to create the entire perception a customer has of an organization. One bad experience can result in not only losing that customer but losing future customers. Studies show that a satisfied customer may tell 2-3 people about their experience, dissatisfied customers will tell from 8-20. However, even an unhappy customer will become a loyal customer. Effective Communication: It’s no secret that good leaders are also good communicators. And the best leaders have learned that effective communication is as much about listening to others as the words they speak.

Contact hours: 8
Not financial aid eligible.

ZLDR-1246 Embracing Change at Work and Prioritizing My Time 0.8 CEU’s

Looking to take the Frontline Manager Certificate Program? Want to get it completed in a short amount of time? We have grouped Embracing Change at Work and Prioritizing My Time to help you do just that. Just sign up for this one day course and meet two of the 10 requirements to obtain your certificate. Embracing Change at Work: Change happens all around us. Anxiety over the unknown, changes in roles, responsibility and 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 it will yield and how to overcome barriers to change. Prioritizing My Time: Today we are all swamped with work, personal responsibilities, 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.

Contact hours: 8
Not financial aid eligible.

ZLDR-1248 Coaching - For Peak Performance 0.4 CEU’s

One of the most challenging aspects of management is getting the most from your staff through their individual and team performances. This course will provide a coaching framework for you to help your employees develop to their full potential. You will be provided with tools to assess your employee’s commitment and competence, to provide effective feedback, and to determine the most effective coaching response for a variety of situations.

Contact hours: 4
Not financial aid eligible.

ZLDR-1262 Marine Corps Leadership and Development Workshop 3 CEU’s

The Marine Corps Recruiting Station will be providing a four day workshop that allows Marines to communicate directly with educators and provides those attending with an in-depth view of how the Marine Corps transforms young men and women into the world’s most elite fighting force. On this workshop, educators not only receive classroom instruction, but also practical application of Marine Corps leadership, physical fitness, discipline and team building techniques. It provides them with a better understanding of the Marines Corps by presenting them with a firsthand look at how Marines are made, and assists them by developing their own skills as educators when they return to their respective classrooms to guide our Nation’s youth.

Contact hours: 30
Not financial aid eligible.

ZLDR-1265 Leading Virtually (Online) 0.2 CEU’s

When members of the same team are scattered across time zones and borders, they can feel isolated and disconnected from the team. This can lead to miscommunication, distrust, and lack of focus. This course shows the leaders of virtual teams how to bridge the gap of time and distance to build community, where remote team members have a sense of belonging, responsibility, and commitment as if they were working together in the same place. Leaders are introduced to three foundations for building community: communicating effectively, building trusting relationships, and keeping team members and goals visible and in focus. Leaders are shown how to establish each foundation, using skills and tools designed specifically for leading in a virtual environment.

Contact hours: 2
Not financial aid eligible.

ZLDR-1266 Communicating for Leadership Success (Online) 0.3 CEU’s

This foundation course introduces leaders to the essential interaction skills that are critical to leadership success. These Interaction Essentials are the core behaviors that leaders need to possess to be effective in the many situations they handle on a daily basis, such as coaching, delegating, and driving change. Leaders will learn how to meet the personal and practical needs of their team members, and how to communicate in order to spark action in others to achieve business results. They will also learn how to provide positive feedback that recognizes and motivates individuals and teams, as well as developmental feedback that helps others get back on track. This foundation course is a prerequisite for many of the courses in the Interaction Management Exceptional Leaders series.

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. Leaders learn how to focus on operational and behavioral issues and how to overcome defensive reactions, such as deflecting, blaming and redirecting. Leaders also learn how to gather and use data to provide effective feedback and how to balance seeking and telling to gain commitment for improvement. Leaders practice conducting performance improvement discussions.

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-1273 Playing Each Other to the Top  
0.4 CEU's  
This workshop is based on the concept of “bands.” Everyone joins a band in his or her life. Our families are our first band, while our friends, work groups, etc. are other bands we join throughout our lives. Currently, you are all a part of the [company's name] band. Each member is critical; some shine with solos at certain points, while others provide critical backup. The main singer up front cannot shine unless the other members keep the beat and play the right notes. Most importantly, the “music” the band plays impacts everyone (our clients, our employees, our community). In order to be successful as a band, we must first understand who we are and then, why we are.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1277 Making Meetings Work (Online)  
0.2 CEU's  
Most people say they hate meetings, but what they really dislike are unproductive, poorly run meetings. Meetings are a great tool for achieving business results when the right people meet with a clear purpose and specific agenda. This course helps leaders save time and resources by leading meetings that support business needs. Leaders learn how to plan, facilitate, and follow-up on meetings (including virtual meetings) to ensure that there is a payoff for the time invested in meetings.  
Contact hours: 2  
Not financial aid eligible.

ZLDR-1278 Strategy and Sales Solution Selling Workshop  
1.6 CEU's  
This 2-day workshop is specifically designed for staff responsible for building client relationships and driving revenue for their organization. Participants will learn to identify, engage, and grow strategic accounts that turn into profitable and sustainable business relationships. You will walk away with a renewed inspiration for the work that you do, and practical tools that will help you grow the business.  
Contact hours: 16  
Not financial aid eligible.

ZLDR-1281 Leadership Skills for Working in a Lean/Lean Six Sigma Environment Certificate  
2.4 CEU's  
Lean and Lean Six Sigma training is designed to systematically increase business productivity by identifying and eliminating waste and variance. This training addresses the leadership skills needed to tackle the quality and/or process improvement environment. Corporate College’s Certificate Program additionally addresses the “people skills” that are also required when trying to influence change and collaborative problem solving.  
Contact hours: 24  
Not financial aid eligible.

ZLDR-1282 Service Excellence Certificate  
2.4 CEU's  
Today's Service Providers are not only expected to understand their company’s products and processes, but to represent their organization to their customers in a highly favorable, professional manner. Corporate College’s Certificate Program in Service Excellence provides participants with proven behavioral skills that ensure high-quality customer interactions that increase customer satisfaction as well as customer retention.  
Contact hours: 24  
Not financial aid eligible.

ZLDR-1283 Train-the-Trainer Bootcamp  
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-1284 Authentic Self Through Strengths' Application  
4 CEU's  
This second course allows participants to discover how they can use Strengths to make themselves more successful. This session assists participants in applying their unique self in real world situations. They also learn how personal areas of development can become a gift from which they and others can benefit. This course provides an opportunity for participants to focus their contributions and needs into a statement that can guide their future decisions.  
Contact hours: 40  
Not financial aid eligible.
ZLDR-1285 Connecting With People through Strengths  
0.4 CEU's  
The most successful and high-performing organizations and individuals are the ones who are engaged and inspired to do their work. This course presents a research and data-driven approach that provides avenues to developing a healthy, engaged organization, strengthened team relationships, innovation, and increased customer loyalty.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1286 The Impact of Strengths on Your Career Path  
0.4 CEU's  
How do I decide what I want to do with my life? What will keep me engaged in my studies and potential future? I want to feel fulfilled. Attending this course will address these questions through the development of a personal strategy for success.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1287 Setting Goals & Reviewing Results  
0.4 CEU's  
People are more engaged and strive for better results when they feel ownership of their work in both the process and the outcomes. Unfortunately, leaders fail to engage and reinforce this sense of ownership in performance management discussions. This course led by our Master DDI Facilitator will show the positive effect of shifting the traditional role of planner and evaluator from the leader to a shared responsibility between leader and employee. This shift builds ownership with the employee and frees up time for leaders to focus on coaching and developing throughout the performance cycle. Leaders will experience how to use effective (SMART) goals to help them and their employees track progress and fairly evaluate outcomes.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1288 Emotional Intelligence (EQ) 2.0  
0.4 CEU's  
Emotions play a critical role in the quality of our professional and personal lives. Emotional intelligence is defined as a set of competencies that allows one to demonstrate the ability to recognize one’s behaviors, moods and impulses, and to manage them best according to the situation. Based on the bestselling book by Travis Bradberry and Jean Greaves, Emotional Intelligence (EQ) 2.0 delivers a step-by-step process for increasing EQ by improving the use of the four EQ skills; Self-awareness, Self-management, Social awareness, and Relationship management in order to exceed goals and achieve full personal potential. This course will help learners understand EQ skills and make plans to enhance how they use them on the job.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1289 Personal Strengths Strategy Coaching with Polly Tonti  
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 one-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-1290 Advanced Professional Business Writing  
0.4 CEU's  
Advanced Business Writing creates results! Quality communication skills are an extension of a professional persona that takes a conscious effort to establish and maintain. In this fast-paced world, it is important to be as clear, concise, and efficient as possible. In this digital age, writing is a core competency in the business world. Without quality communication, the end results will suffer. Unprofessional communication can frustrate co-workers and compromise productivity. A lack of professionalism creates uncertainty, which can destroy credibility.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1295 Addressing Poor Performance  
0.4 CEU's  
This course builds leaders' skills in handling chronic performance problems. They learn how to document and present a solid case for needed improvement and use effective interaction skills. Leaders identify the steps to take after the performance problem discussion to provide ongoing feedback and support, and determine if it is necessary to impose formal consequences.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1296 Fostering Innovation  
0.4 CEU's  
This course provides a practical approach, and tools and techniques, to help leaders and their teams think differently about how they work and to help them generate new ideas that add value to your organization and your customers. Leaders also learn what they can say and do to foster innovation with their teams.  
Contact hours: 4  
Not financial aid eligible.

ZLDR-1297 Maximizing Team Performance  
0.4 CEU's  
This course focuses on how leaders can work with their teams to build the infrastructure that enables maximum performance. Leaders gain experience in diagnosing and applying the five Team Success Factors — Results, Commitment, Communication, Process, and Trust.  
Contact hours: 4  
Not financial aid eligible.
ZLDR-1298 Strategies for Influencing Others
0.4 CEU's
This course shows leaders and individual contributors how to package their ideas in a way that will win over even the most skeptical individuals. Participants learn strategies for effectively capturing people's attention, transforming their perspectives, and gaining their commitment to taking action.
Contact hours: 4
Not financial aid eligible.

ZLDR-1301 Women in Engineering Leadership
0.8 CEU's
This one-day course aims to integrate with a larger sustainable organizational culture change initiative to increase diversity in leadership. Opportunities for practice and hands-on learning help position professional women engineers to expand their influence and impact in their teams and overall company. The course focuses on the importance of diversity and inclusion to working with women engineering professionals and addresses three interrelated strands to increasing the leadership participation and effectiveness of a diverse community: personal leadership, community leadership, and creation of a corporate culture of diverse leadership.
Contact hours: 8
Not financial aid eligible.

ZLDR-1302 Train the Trainer Workshop
0.8 CEU's
Workshop for all employees that train others as part of their job. This will ensure that all new hires are trained to the same standard and all employees can learn how to operate every machine in the plant. The first day will be in the classroom. Part of day two will be on the shop floor.
Contact hours: 8
Not financial aid eligible.

ZLDR-1303 Engaging and Retaining Talent
0.4 CEU's
This course provides leaders with a model to determine what drives each individual's engagement, as well as methods for proactive engagement and talent retention. Participants learn how to conduct engagement conversations and retention conversations. They explore ways to offer recognition and create an engaging environment using no-cost everyday engagers.
Contact hours: 4
Not financial aid eligible.

ZLDR-1304 DDI Facilitator Certification Workshop
2.4 CEU's
DDI's three-day Facilitator Certification Process workshop develops the skills and competencies facilitators need to deliver training that will address current facilitator challenges and build essential skills for organizational success. Upon certification, facilitators will be able to train nearly 40 DDI Interaction Management courses.
Contact hours: 24
Not financial aid eligible.

ZLDR-1305 Your Leadership Legacy
0.4 CEU's
While transitioning into a leadership role learn the three key imperative for leadership. See your role as leaders from others' perspective. And draft a roadmap defining who you want to be as a leader.
Contact hours: 4
Not financial aid eligible.

ZLDR-1306 Inclusive Leadership
0.4 CEU's
Discuss Diversity and Inclusion by introducing unconscious bias. Define inclusive leadership and its benefits. Discuss the role of Emotional Intelligence in Leadership and strategies for work.
Contact hours: 4
Not financial aid eligible.

ZLDR-1307 Mars Electric Co. Training Program
1.2 CEU's
Mars Electric Co. is seeking assistance with implementing training and development for members of their team to increase awareness, skills and capabilities in the areas of conflict resolution, professionalism, communication, change and working together effectively. This proposal outlines the design and delivery of a training program to build job-specific knowledge in these areas.
Contact hours: 12
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-1309 American Greetings Using Your Strengths
0.2 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 an entire career.
Contact hours: 2
Not financial aid eligible.

ZLDR-7034 Matalco Supervisory Training
3.2 CEU's
Contact hours: 32
Not financial aid eligible.
Lean (ZLEN)

ZLEN-1036 LeanOhio Boot Camp: Transforming the Public Sector
4 CEU's

LeanOhio Boot Camp is an intensive week-long training 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 training is filled with government examples and exercises. Included is an in-depth simulation involving a prototypical agency, so participants build their toolkits by way of a real-world situation. It’s perfect for people who work in government in an Ohio city, township, county, school district, public university, or other governmental agency or organization.

Contact hours: 40
Not financial aid eligible.

ZLEN-1037 LeanOhio Boot Camp: Transforming the Public Sector (4 days)
3 CEU's

LeanOhio Boot Camp is an intensive 4-day training 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 training is filled with government examples and exercises. Included is an in-depth simulation involving a prototypical agency, so participants build their toolkits by way of a real-world situation. It’s perfect for people who work in government in an Ohio city, township, county, school district, public university, or other governmental agency or organization.

Contact hours: 30
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 is designed to ensure effective use of DMAIC principles needed to improve business processes and the Lean tools to reduce waste and increase productivity. Individuals completing this course will have all the necessary tools to lead cross-functional project teams through implementation. This course uses MINITAB statistical software for all project calculations; it is preferable that participants bring their own laptop for software download since the MINITAB software will be provided.

Contact hours: 80
Not financial aid eligible.

ZLSS-1012 PMI® Certified Associate in Project Management (CAPM®)
3.5 CEU's

The Certificate in Applied Project Management(CAPM®) program is a hands-on 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.

Contact hours: 35
Not financial aid eligible.

ZLSS-1027 Lean Six SigmaGREEN BELT for HealthCare Comprehensive
6.8 CEU's

This course has been customized to meet the unique needs of current and future healthcare professionals. Upon successful completion of this course, participants will be certified as Lean Six Sigma Green Belts in Healthcare. Lean Six Sigma Green Belts in Healthcare work directly with cross-functional project leaders to carry out identified improvement projects using LSS methodologies within a healthcare 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-1029 Basic Statistics for Lean Six Sigma Practitioner
2 CEU's

This is a blended-learning course that will focus on building skills for determining and understanding data distributions, measures of central tendency and dispersion. In addition, participants will see how Microsoft Excel functions and Data Analysis ToolPak can be used for descriptive statistics and graphical display of data. Participants will spend approximately 4 hours in the Corporate College eLearning portal. The online learning modules will cover the topics; “Measures of Central Tendency”, “Measures of Dispersion” and “Descriptive Statistics”. The classroom sessions will consist of two, 8 hour sessions where the instructor will review the online topics and demonstrate the use of statistical tools, specifically Excel, to prepare graphical displays of data.

Contact hours: 20
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 Lean Six Sigma methodologies and tools that are necessary to identify opportunities for eliminating waste, reducing costs and improving processes. Yellow Belts have the skills to represent individual departments or organizations as an active member on Lean Six Sigma project teams. This is a blended-learning course: blended-learning reduces time away from home or work and ensures that class time is spent reinforcing learning through hands-on activities and class discussion. Lunch will be 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. Lean Six Sigma Green Belts work directly with cross-functional project leaders to carry out identified improvement projects using LSS methodologies. Green Belts can implement all of the appropriate tools to lead independent local projects when necessary. This course uses QI Macros; it is preferable that participants bring their own laptop for software download since QI Macros software will be provided.
Contact hours: 38
Not financial aid eligible.

ZLSS-1047 Lean Six Sigma: Executive Champion Belt
1.2 CEU’s
This course provides a concise introduction to Lean and Six Sigma for employees that have been identified as leaders of organizational change and will manage Lean Six Sigma Project Teams. Champion training will provide a firm understanding of the foundations of Lean, the opportunities that a lean culture will provide for the organization as well as provide a firm understanding of the resources employees will need to successfully implement lean projects. Participants will understand what their role as Leaders/Champions are and ensure that they are identifying key projects that will ensure that Lean project teams are successful in implementing projects that will result in process improvements that reduce costs, enhance services and eliminate the waste of organizational resources. Champion training is a blended learning course which includes approximately 4 hours of on line instruction to be completed prior to class instruction.
Contact hours: 12
Not financial aid eligible.

ZLSS-1049 Lean Six Sigma - GREEN BELT (Virtual Online)
5 CEU’s
Upon successful completion of this course, participants will be certified as Lean Six Sigma Green Belts. Lean Six Sigma Green Belts work directly with cross-functional project leaders to carry out identified improvement projects using LSS methodologies. Green Belts can implement all of the appropriate tools to lead independent local projects when necessary. This course includes both Yellow and Green Belt content. Course Requirements: Must be comfortable with mathematics through college algebra Must have a laptop or desktop that is away from distractions (class times need to be quiet and distraction free) Must have a phone (cell or landline) Must be able to download statistical software, such as SigmaXL Must be comfortable with Microsoft Excel
Contact hours: 50
Not financial aid eligible.

ZLSS-1053 Understanding Statistics through Data
0.6 CEU’s
This is a blended-learning course that will focus on providing a solid foundation in the understanding of statistical terms and concepts and an overview of how data analysis relates to an organization. This will enable the team members to analyze data, identify trends and transform data and information that is meaningful to internal and external stakeholders. Participants will spend approximately 1.5 hours on the Corporate College eLearning portal prior to attending a 4 hour in class session. The in-class session will demonstrate the practical use of statistics in a business environment.
Contact hours: 6
Not financial aid eligible.

ZLSS-1055 Introduction to Agile Project Management
0.8 CEU’s
Agile project management focuses on continuous improvement, scope flexibility, team input, and delivering essential quality products. Agile Project Management is a revolutionary method introduced for the practice of empowering teams and value based team management vs. task management. This latest project management strategy is mainly applied to project management practice in software development but also applies to product R&D and engineering disciplines as well. Students will learn the basics and principles on how to lead projects with this approach.
Contact hours: 8
Not financial aid eligible.

ZLSS-1058 Train the Trainer Facil Wkshop
0.8 CEU’s
Trainer/facilitation skills will be further developed with the Train the Trainer Workshop so that the facilitation of Process Mapping initiatives can sustain past the training. The Train the Trainer workshop will help employees engage and facilitate colleagues so they will retain and apply lessons learned back in the workplace. Process mapping is more effective when conducted in a group setting, and good facilitation is essential. The facilitator must be able to steer the proceeding of the event, challenge conventional wisdom and keep the group focused on the objective. The group must be made up of people with domain knowledge while the facilitator manages the group. The role of facilitator will be to clarify and question the current paradigm.
Contact hours: 8
Not financial aid eligible.

ZLSS-1059 Process Mapping Training Delivery
2 CEU’s
This course will focus on teaching employees methods to map business processes. The blended course includes 16 hours of classroom instruction and 2-4 hours of on-line 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.

ZLSS-1060 Basics of Lean
0.2 CEU’s
To instill any new culture, such as lean, everyone must have buy-in and feel confident that this is a top level priority in the organization. As part of this, the organization will develop a communication and feedback channel for everyone. The first step in the transformation process is to create and share a vision of what the organization must become. We will conduct the training to demystify Lean, introducing the infrastructure for Lean Management and explain the essential tools for identifying and attacking sources of waste and inefficiency.
Contact hours: 2
Not financial aid eligible.
ZLSS-1061 Problem Solving: Introduction to Analytical Problem Solving and Root Cause Analysis
0.8 CEU's
This course is designed to provide participants with an understanding of the concepts and fundamental tools of problem solving and decision making. It will prepare participants to address decisions, solve operational problems and provide experience in the application of problem solving and improvement methods. Learn to apply problem solving skills and work effectively with teams or small groups as they solve problems. Participants will be able to foster an environment that promotes effective problem solving and analytical thinking. This hands-on workshop provides participants with and 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-1063 Lean Essentials Boot Camp Basics (Manufacturing based)
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-1066 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 job.
Contact hours: 24
Not financial aid eligible.

ZLSS-1067 Lean Six Sigma Green Belt to BLACK BELT (Virtual Online)
8 CEU's
The LSS Black Belt course is designed to ensure effective use of DMAIC principles needed to improve business processes and the Lean tools to reduce waste and increase productivity. Individuals completing this course will have all the necessary tools to lead cross-functional project teams through implementation and will be certified as Lean Six Sigma Black Belts. Black Belts are trained experts in Lean, Six Sigma and statistical process control techniques.
Contact hours: 80
Not financial aid eligible.

ZLSS-1068 Lean Boot Camp for Directors, Managers and Supervisors
1.6 CEU's
This is an introduction to the Lean Program. 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 and how it can benefit organizations. Through instruction, discussion, group activities and hands-on exercises, participants will learn lean practices.
Contact hours: 16
Not financial aid eligible.

ZLSS-1071 PMI® Project Management Professional (PMP®) Exam Prep
3.5 CEU's
Project Management Institute (PMI®) credentials are recognized assets that will distinguish you in the job market and enhance your credibility and effectiveness working with project teams. This new combined exam prep boot camp will help you to prepare for either the new 2016 Project Management Professional (PMP®) Exam or the Certified Associate in Project Management (CAPM®) Exam*. The PMP® credential recognizes demonstrated knowledge and skill in leading and directing project teams and in delivering project results within the constraints of schedule, budget and resources. Preparation for a PMI® credential requires study and review of current project management processes. This course will also prepare new project managers for the CAPM® exam. The CAPM® is an asset that will distinguish you in the job market and enhance your credibility and effectiveness working with project teams.
Contact hours: 35
Not financial aid eligible.

ZLSS-1073 Lean Six Sigma Yellow Belt for Healthcare
2.6 CEU's
Lean Six Sigma Yellow Belt for Healthcare training is ideal for all individuals within a healthcare environment. Yellow Belts are familiar with Lean Six Sigma methodologies and tools that are necessary to identify opportunities for eliminating waste, reducing costs and improving processes. Yellow Belts have the skills to represent individual departments or organizations as an active member on Lean Six Sigma project teams. This is a blended-learning course: blended-learning reduces time away from home or work and ensures that class time is spent reinforcing learning through hands-on activities and class discussion.
Contact hours: 26
Not financial aid eligible.

ZLSS-1074 YELLOW BELT (Virtual Online)
2 CEU's
Lean Six Sigma Yellow Belt training is ideal for all individuals within an organization. Yellow Belts are familiar with Lean Six Sigma methodologies and tools that are necessary to identify opportunities for eliminating waste, reducing costs and improving processes. Yellow Belts have the skills to represent individual departments or organizations as an active member on Lean Six Sigma project teams.
Contact hours: 20
Not financial aid eligible.
ZLSS-1076 Understanding Metrics for Strategic Deployment Workshop  
0.4 CEU's  
Is your organization struggling with metrics/data? What is a “good metric/data”? Has your company implemented measurement best practices? Often we focus on the wrong metrics, or the lack of focus on how metrics are used and the customers of metrics, not aligning metrics to senior management strategic objectives, and even how to define metrics.  
*Contact hours: 4  
Not financial aid eligible.*

ZLSS-1077 Lean for Education Introduction (Online)  
0.4 CEU's  
Begin with the fundamentals of Lean for Education Introduction online to understand how the 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  
A more comprehensive understanding of how to apply process improvement methodology in the education environment. This combines the introductory topics with additional lean modules to take your process improvement implementation one step further. Gain a deeper understanding of Lean methodologies. Make the most of these tools to help your organization see rapid improvements to process flow while eliminating waste.  
*Contact hours: 8  
Not financial aid eligible.*

ZLSS-1079 Lean for Healthcare Comprehensive (Online)  
0.8 CEU's  
In the Lean for Healthcare online 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: 8  
Not financial aid eligible.*

ZLSS-1080 WorkOut: GE WorkOut Change Acceleration Process  
1.6 CEU's  
WorkOut is a process for involving large numbers of people simultaneously in process improvement. The WorkOut Process captures the collective creativity of an organization on critical business issues and translates those ideas into action. Work-Outs can be simple, focusing on eliminating bureaucracy and rework or rigorous, using advanced analytical tools. GE invented WorkOut in the late 80s, primarily to eliminate red tape and to encourage employees to get involved and take action. Increasingly, the focus of WorkOut shifted to business processes, then to customers and suppliers, then to change acceleration. By the late 1990s, WorkOut had become the basis for the company's push into Six Sigma and has since served as the foundation for GE's work on digitization and e-business.  
*Contact hours: 16  
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 will combine online modules with in-person classroom sessions to help participants enhance their problem solving effectiveness by applying creative thinking, logic and analysis to solving product and process related problems.  
*Contact hours: 20  
Not financial aid eligible.*

ZLSS-1082 Lean Six Sigma YELLOW BELT for Healthcare (Virtual Online)  
2 CEU’s  
Learn the foundational principles of Lean and Six Sigma and become an informed and active participant in your hospital's improvement efforts. See how Process Improvement disciplines can address the challenges of the healthcare setting to improve patient outcomes, reduce infection rates, increase revenue, and transform workplace culture. Course Requirements: Must have a laptop or desktop that is away from distractions (class times need to be quiet and distraction free) Must have a phone (cell or landline)  
*Contact hours: 20  
Not financial aid eligible.*

ZLSS-1083 Lean Six Sigma GREEN BELT for Healthcare (Virtual Online)  
5.2 CEU’s  
Engage with our Master Black Belts and collaborate with fellow students as you prepare for key support roles in your hospital's improvement projects. Practice the methods of Lean and Six Sigma to improve patient outcomes, reduce infection rates, increase revenue, and transform workplace culture. This course includes both Yellow and Green Belt content. Course Requirements: Must be comfortable with mathematics through college algebra Must have a laptop or desktop that is away from distractions (class times need to be quiet and distraction free) Must have a phone (cell or landline) Must be able to download statistical software, such as SigmaXL Must be comfortable with Microsoft Excel  
*Contact hours: 52  
Not financial aid eligible.*

ZLSS-1088 Lean and the Supply Chain  
0.8 CEU's  
This workshop is focused on the application of concepts and is designed for Lean Six Sigma practitioners and supply chain professionals wishing to collaborate more effectively on continuous improvement activity in the supply chain space.  
*Contact hours: 8  
Not financial aid eligible.*
ZLSS-1089 Safety, Failure Modes and Effect Analysis: Using DMAIC
0.8 CEU's
OSHA mandates that employers provide a safe workplace, and cites Job Hazard Analysis (JHA) as a primary means to identify, address, and remediate all potential safety hazards. The JHA relates to specific processes resident in the workplace, identifies the attendant potential for accident and injury, and provides the means to prevent the occurrence of the safety hazard. Application of specific elements of the Six Sigma Define-Measure-Analyze-Improve-Control (DMAIC) method offers a powerful and innovative way to not only develop the required JHA, but more importantly, provide a viable and dynamic preventative means to ensure employee safety in the workplace.
Contact hours: 8
Not financial aid eligible.

ZLSS-1090 Lean Six Sigma YELLOW BELT for Education
2.6 CEU's
Lean Six Sigma Yellow Belt for Education training is ideal for all individuals within an education environment. Yellow Belts are familiar with Lean Six Sigma methodologies and tools that are necessary to identify opportunities for eliminating waste, reducing costs and improving processes. Yellow Belts have the skills to represent individual departments or organizations as an active member on Lean Six Sigma project teams. This is a blended-learning course: blended-learning reduces time away from home or work and ensures that class time is spent reinforcing learning through hands-on activities and class discussion.
Contact hours: 26
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.

MS Cert Prof Sys Engineer (ZMCP)

ZMCP-1086 Introduction to SQL
3 CEU's
The Introduction to Structured Query Language (SQL) course is a foundations level course that demystifies the language of databases. The course will cover the key concepts of SQL, including the basic structure of relational databases and how to read and write simple SQL statements. This instructor-led course will help you get started with the SQL language by learning how to use SQL to add, delete, edit and view records. Introduction to SQL will also cover how to create SQL statements including SELECT, DELETE, UPDATE and INSERT. If you are new to database management or administration, or need to create customized, personal reports, this introduction course will provide you with a strong foundation in the SQL language.
Contact hours: 30
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.

Marketing (MARK)

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
Introduction to basic principles of marketing involved in selling of goods and services. Focus on marketing mix which includes creation of product, pricing, channels of distribution, and promotion.
Lecture: 3 hours
Prerequisite(s): BADM-1020 Introduction to Business and ECON-2620 Principles of Microeconomics.
OAN Approved: OBU006.
MARK-2020 Principles of Salesmanship
3 Credits
Skill development in techniques used by successful professional sales persons. Sales management also addressed in context of self management and organizational management.
Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing, or concurrent enrollment in INTD-2300 Interior Design Studio I, or departmental approval: comparable knowledge or skills.
MARK-2120 Import/Export Procedures and Documentation
3 Credits
Procedures and documentation required for import and export activities. Includes shipment of goods and payment for foreign sales, rules for importing cargo into the U.S., and Customs regulations and processes.
Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing, or departmental approval: previous coursework and/or experience.

MARK-2260 Sales Promotion and Public Relations
3 Credits
Study of promotion methods and techniques supplementary to advertising and personal selling. Focus on both consumer and trade promotions. Includes publicity and public relations, trade shows and exhibits, point-of-purchase displays, couponing, contests, sweepstakes, rebates and premiums.
Lecture: 3 hours
Prerequisite(s): MARK-2010 Principles of Marketing.

MARK-2270 Principles of Advertising
3 Credits
Introduction to advertising as an 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
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 Masotherapy
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: 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; and 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: 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 curulatory 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 Kellogg 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-2200 Medical Massage  
2 Credits  
Introductory study and overview of theoretical and clinical massage in a medical setting. Demonstrate holistic team approach skills. Demonstrate holistic assessment, plan of care and delivery of massage and touch therapy to the frail and hospitalized patient. 
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, 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 Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II or concurrent enrollment; and MT-235A Massage Therapy Clinic I-A.

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 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; and MT-236A Massage Therapy Clinic II-A.

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 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 masotherapy. 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 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, rational equations, systems of three linear equations in three variables, radical expressions, 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.

MATH-1470 Modern Mathematics for Business and Social Science I
4 Credits
First of two-semester sequence. Includes linear systems, functions, matrix algebra and linear programming techniques as applied to business problems and simplex method. Math of finance and basic theory of probability and statistics.
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 two-semester sequence. Includes fundamentals of differential and integral calculus and applications of these topics to business and economics.
Lecture: 4 hours
Prerequisite(s): MATH-1470 Modern Mathematics for Business and Social Sciences I, or departmental approval: equivalent coursework.
OAN Approved: TM0013

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 appropriate score on Math Placement Test; 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-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 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-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: equivalent coursework. Note: MATH-1200 or 1280 taken prior to Fall 2016, or MATH-1270 taken prior to Summer 2017 will 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  
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: equivalent coursework. 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-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 a three-semester sequence designed for math, science, business, and engineering majors. Focus on conceptual understanding of verbal, numerical, visual, and algebraic representations of functions, their graphs, and operations. Includes limits, continuity, rates of change, derivatives, implicit differentiation of algebraic and trigonometric functions, application of differentials, differentiation, integrals, and application of integration. Emphasizes challenging calculus exercises, problems, projects, cooperative group work, students presentation of one of the course projects, and use of technology: graphing calculators and computers.  
Lecture: 5 hours  
Prerequisite(s): MATH-1540 Trigonometry or MATH-154H Honors Trigonometry, or MATH-1580 Precalculus; 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, business, and engineering majors. Focus on conceptual understanding of verbal, numerical, visual, and algebraic representations of functions, their graphs, and operations. Includes limits, continuity, rates of change, derivatives, implicit differentiation of algebraic and trigonometric functions, application of differentials, differentiation, integrals, and application of integration. Emphasizes challenging calculus exercises, problems, projects, cooperative group work, students presentation of one of the course projects, and use of technology: graphing calculators and computers.  
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-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: 00.
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 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-1620 Calculus II, or departmental approval: equivalent coursework.
OAN Approved: TMM018 & OMT018.

MATH-231H Honors Calculus III
4 Credits
Third of three-semester sequence designed for mathematics, science, business, and engineering majors. Focuses on conceptual understanding of vectors, parametric equations, analytic geometry of space, partial differentiation, and multiple integrals, line and surface integrals. Emphasizes proofs of theorems and solving challenging examples, exercises, and application problems. Strengths development of research projects. Underscores cooperative work, students presentation of one of the course projects, and use of technology: graphics calculators and computers.
Lecture: 4 hours
Prerequisite(s): MATH-162H Honors Calculus II, or high school Honors Calculus II, or departmental approval: equivalent coursework.
OAN Approved: TMM018 & OMT018.

MATH-2410 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-2520 Differential Equations
3 Credits
Includes study of differential equations of first and higher order, simultaneous, linear and homogenous differential equations, solution by power series, Laplace transformations and computer applications.
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-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.  
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, the roles technical drawings play in production, manufacturing and products 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-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.  
OAN Approved: OET010. CTAN Approved: CTMET004.

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 MATH-0965 Intermediate Algebra.

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-1240 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-1630 Industrial Supply Logistics

3 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: 2 hours. Laboratory: 2 hours
Prerequisite(s): MET-1100 Technology Orientation and MATH-1530 College Algebra or concurrent enrollment.

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 drafting 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-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 (PLCs), 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.

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 postprocessing 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

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-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 and TMS036.
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: 2 hours. Laboratory: 3 hours
Prerequisite(s): MATH-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-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-2840 Additive Manufacturing Internship
1-4 Credits
Engage in actual hands-on, on-the-job training using Additive Manufacturing technology in Additive Manufacturing with field experience. 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-1230 Drawing & AutoCAD, or MET-1230 Machine Tools and Manufacturing, or MET-1250 Introduction to Additive Manufacturing, or MET-1260 Product Ideation and Design, or MET-2601 3D Solid Modeling; or departmental approval.

Media Arts and Filmmaking (MARS)

MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media
3 Credits
Focus on the power of story structure in communications. Explore the craft of story telling, whether it be to entertain, teach, motivate, sell or provoke with examples from film, television, literature, commercials, music videos, even video games. Take real-life scenarios and respond to them with arguments constructed by the traditional aspects of drama. Discuss all facets of pre-production. Learn the organizational skills and techniques necessary to create a production notebook used for planning a motion media production.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

MARS-1120 Media Arts and Studies Colloquium
1 Credit
Introduces students to the local producers, strategists and clients in the field of video and interactive communications. Industry professionals representing the broadcasting, commercial production, corporate, non-profit and entertainment industries present specific case histories.
Lecture: 1 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test.

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. CTAN Approved: CTMDA003.

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.

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.
**MARS-2120 Advanced Editing**  
*3 Credits*  
Advanced motion media editing using industry standard, non-linear, editing software and hardware. Preparation for industry recognized certification exam in professional editing software. 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.*

**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 should 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 for 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.

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: OHL009. CTAN Approved: CTPT001 and CTMT001.

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: CTMA1009.

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: CTMA1009.
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: CTMAT008.

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: CTMAT008.

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,hirings, 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.

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; and concurrent enrollment in MA-1503 Administrative Procedures for the Medical Office and departmental approval: admission to Medical Assistant program. CTAN Approved: CTMAT004 and CTMAT005.

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-2010 Medical Terminology II
2 Credits
Terminology utilized by health care 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's 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): MA-1200 Medical Terminology II, or departmental approval: 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.

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: 3 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-2412 Advanced Clinical Medical Assisting Lab. CTAN Approved: CTMAT010.

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.
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): Concurrent enrollment in MA-2410 Advanced Clinical Medical Assisting, MA-1511 Medical Office Procedures, and MA-2980 Medical Assisting Seminar. CTAN Approved: CTMAT011.
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.

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; and departmental approval: admission to Health Career(Nursing Program).

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
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-1850 Medical Laboratory Practicum I
3 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.
Lecture: 1 hour
Other Required Hours: 26.25 hour per week for 8 weeks (210 total hours).
Seminar 2 Hours per week for 8 weeks. Note: Course does not include a lecture hour; listed lecture hour reflects contact time for required seminar.
Prerequisite(s): MLT-1300 Introduction to Blood Collection, or concurrent enrollment, and departmental approval.

MLT-2461 Hematology
3 Credits
An introduction to the theory, principles and procedures used in hematology 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 hematological 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): 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.

Lecture: 1 hours
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-1125 Excel, Data Analysis
2.1 CEUs

This course is designed for advanced Microsoft Office Excel professionals who may work or be interested in the domain of finance, statistics, project analysis, and market analysis including the fields of micro- and macro-economics. Topics include forecasting data using functions, using the data analysis tools, using the financial functions to make investment decisions, examining data using math functions, manipulating data using text and information functions, creating templates and working with the advanced chart options, and managing data in Excel workbooks.

Contact hours: 21
Not financial aid eligible.
ZMSA-1152 Microsoft Tune Up for Professionals
3.5 CEU's
Whether you are new to a field, fresh out of college, or need to increase your efficiency, Microsoft Office 2016 will help you. This 32 hour course will guide you through training on the Microsoft Office 2016 applications: Word, PowerPoint, Outlook, and Excel. As a Tri-C student you will be able to access and download 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
17.5 CEU's
Contact hours: 175
Not financial aid eligible.

ZMSA-1154 Microsoft Word Intensive
3.5 CEU's
Successful candidates for the Microsoft Word 2016 exam will have a fundamental understanding of the Word environment and the ability to complete tasks independently. They will demonstrate the correct application of the principle features of Word 2016 by creating and editing 2- to 3-page documents for a variety of purposes and situations. Document examples include professional-looking reports, multi-column newsletters, résumés, and business correspondence. This week long course guides a student from a basic Microsoft Word user through a fundamental understanding of completing tasks independently in the Word environment and the ability to complete tasks independently. Exam 77-725
Contact hours: 35
Not financial aid eligible.

ZMSA-1155 Microsoft Outlook Intensive
3.5 CEU's
Successful candidates will create and edit professional-looking email messages, maintain calendars across time zones, and schedule tasks for a variety of purposes and situations. Candidates will use Outlook 2016 to enhance professional correspondence, create calendars, and schedule appointments. Application examples include coordinating building resources, sending messages for marketing campaigns, planning staff meetings, and assigning meeting action items. This week long course guides a student from a basic Microsoft Outlook user through a fundamental understanding of completing tasks independently in the Outlook environment and the ability to complete tasks independently. Exam 77-731
Contact hours: 35
Not financial aid eligible.

ZMSA-1156 Microsoft PowerPoint Intensive
3.5 CEU's
Successful candidates will have a fundamental understanding of the PowerPoint environment and demonstrate the correct application of PowerPoint 2016. Candidates create, edit, and enhance presentations and slideshows. Presentation examples include professional-grade sales presentations, employee training, instructional materials, and kiosk slideshows. This week long course guides a student from basic PowerPoint user through innovative instruction and guided practice to prepare for the PowerPoint Microsoft Office Specialist 2016 certification test. Exam 77-729
Contact hours: 35
Not financial aid eligible.

ZMSA-1157 Microsoft Excel Intensive
3.5 CEU's
This week long course guides a student from a basic Microsoft Excel user through innovative instruction and guided practice to prepare for the Excel Microsoft Office Specialist 2016 certification test. Exam 77-727. Successful candidates for the Microsoft Office Specialist Excel 2016 certification exam will have a fundamental understanding of the Excel environment and the ability to complete tasks independently. They will know and demonstrate the correct application of the principle features of Excel 2016. Candidates will create and edit a workbook with multiple sheets, and use a graphic element to represent data visually. Workbook examples include professional-looking budgets, financial statements, team performance charts, sales invoices, and data-entry logs.
Contact hours: 35
Not financial aid eligible.

ZMSA-1160 Microsoft Word 2016
2.1 CEU's
Microsoft Office Specialist certification is the only official Microsoft-recognized certification for Microsoft Office globally. This course prepares students to take the Word 2016 certification Exam 77-725 and the test is included in the tuition. This course is offered at several different times and locations to accommodate all learner's needs. Please check the schedule for offerings this year.
Contact hours: 21
Not financial aid eligible.

ZMSA-1161 Microsoft Excel 2016
2.1 CEU's
Successful candidates for the Microsoft Office Specialist Excel 2016 certification exam will have a fundamental understanding of the Excel environment and the ability to complete tasks independently. They will know and demonstrate the correct application of the principle features of Excel 2016. Candidates will create and edit a workbook with multiple sheets, and use a graphic element to represent data visually. Workbook examples include professional-looking budgets, financial statements, team performance charts, sales invoices, and data-entry logs. Microsoft Office Specialist certification is the only official Microsoft-recognized certification for Microsoft Office globally. This course prepares students to take the Excel 2016 Certification exam 77-727 and the test is included in the tuition.
Contact hours: 21
Not financial aid eligible.
ZMSA-1162 Microsoft Outlook 2016  
2.1 CEU’s  
Microsoft Office Specialist certification is the only official Microsoft-recognized certification for Microsoft Office globally. This course prepares students to take the Outlook 2016 certification exam 77-731 and the test is included in the tuition. This course is offered at several different times and locations to accommodate all learner’s needs. Please check the schedule for offerings this year.  
Contact hours: 21  
Not financial aid eligible.

ZMSA-1163 Microsoft PowerPoint 2016  
2.1 CEU’s  
Microsoft Office Specialist certification is the only official Microsoft-recognized certification for Microsoft Office globally. This course prepares students to take the PowerPoint 2016 certification exam 77-729 and the test is included in the tuition. This course is offered at several different times and locations to accommodate all learner’s needs. Please check the schedule for offerings this year.  
Contact hours: 21  
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-1100 Music For Elementary Education  
3 Credits  
Designed to orient elementary teachers to role of music in growth and development of children. Emphasis on creating musical environment in elementary school classroom. Study of young voice, basic theory, piano keyboard, music symbols and terms, and use of elementary classroom instruments.  
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.  
OAN Approved: TMAH.

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): MUS-1200 Music Reading Skills, or departmental approval.

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, and sight-reading skills. Development of standard repertoire including selected solo and method literature for first semester. End of semester performance jury 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, rhythm control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for second semester. End of semester performance jury 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: OAH022 (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 of study 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-1500 Choir
1 Credit
Performance class with concentration on standard repertoire, both
sacred and secular, accompanied and a cappella for mixed voices. 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.
OAN Approved: OAH022 (1 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 (2 of 4 courses, any 1 of the 4 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 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.
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.
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 4 courses, either may 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-1580 Technology Tools II
2 Credits
Designed to give music students practical knowledge and skills in use of
current computer, MIDI (Musical Instrument Digital Interface), and
electronic instrument technologies for application in music theory,
arranging, composition and performance. Includes advanced notation
and sequencing editing techniques, digital audio recording and MIDI
studio organization.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1570 Technology Tools I, or departmental approval.
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): MUS-1210 Introduction to Music Theory. 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
Introduction 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, hybrid modes and their practical applications, chord construction and notation, chordscale 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-1600 Traditional Theory I.

MUS-1670 Jazz Performance and Improvisation I
2 Credits
Improvisation within jazz style and presentation as performance. Investigates essential relationship of blues, American standard song and swing rhythm as central to character of jazz. Memorization of standard repertoire.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1210 Introduction to Music Theory, and audition.

MUS-1680 Jazz Performance and Improvisation II
2 Credits
Improvisation within jazz style and presentation as performance. Includes modal combinations and chord change sequences, scale-tone 7th, harmonic movement within blues and standard song, phrasing, paraphrasing, playing in various keys and memorization of standard repertoire.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1670 Jazz Performance and Improvisation I.

MUS-1720 Arranging I
2 Credits
Writing and arranging for the modern rhythm section including piano (keyboards), 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 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.

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-1970 Music Seminar  
1 Credit  
Discussion of current topics related to music careers including presentations, recitals and clinics, music academic and career exploration. May be repeated for an accrued maximum of six credits.  
Other Required Hours: 1 seminar hour per week.  
Prerequisite(s): Departmental approval.

MUS-2030 British Invasion  
2 Credits  
Survey of influential and representative works and artists of British Invasion beginning in 1964 including the Beatles, Who, Rolling Stones, Kinks, and their contemporaries. Aesthetics, terminology, technique, style, instrumentation, lyrics, and technology.  
Lecture: 2 hours  
Prerequisite(s): MUS-1030 Survey of Rock and Roll.

MUS-2130 Music Production for Video and Film  
3 Credits  
Using tools of modern MIDI studio to write and produce appropriate musical score for video and film. Topics include music scoring techniques and sound design, role of music in advertising and film industries, and communicating with client to determine musical direction.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): MUS-1140 MIDI Technology II.

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-1510 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. End of semester performance jury 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. End of semester performance jury 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 their 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-1470 Applied Music II, or departmental approval. 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-2500 Music History and Literature I
3 Credits
Chronological study of history and development of European classical music from origins through 18th century. Detailed attention to selected pieces from Medieval, Renaissance, Baroque, and Classical periods.
Lecture: 3 hours
Prerequisite(s): MUS-1620 Traditional Theory II.
OAN Approved: TMAH.

MUS-2510 Music History and Literature II
3 Credits
Chronological study of history and development of European classical music from 19th century through present time. Detailed attention to selected pieces.
Lecture: 3 hours
Prerequisite(s): MUS-1620 Traditional Theory II.
OAN Approved: TMAH.

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-2530 Jazz History II
2 Credits
Chronological study of history and development of modern jazz from Bebop through present time. 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-2550 Jazz History Listening II
1 Credit
Through directed, analytical and comparative listening experiences, students gain detailed knowledge of and familiarity with selected works of Modern Jazz masters from Bebop (1940s) to the present. A listening laboratory and aural training course, this is a companion and supplement to MUS-2530 Jazz History II.
Laboratory: 2 hours
Prerequisite(s): MUS-1650 Jazz Theory I, and concurrent enrollment in MUS-2530 Jazz History II, 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 selected pieces 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. Detailed attention to selected pieces.
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 II.
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-2660 Jazz Theory III
2 Credits
Third level study of theoretical foundations of jazz. Includes modal structures, rhythm changes and substitutions, composition and improvisation, implications of lyrics on structure and articulation, and analysis of transcribed solos and compositions from jazz repertoire, including American standard song.
Lecture: 2 hours
Prerequisite(s): MUS-2650 Jazz Theory II.

MUS-2670 Jazz Performance and Improvisation III
2 Credits
Third level study of improvisation within jazz style and presentation as performance. Includes phrasing, minor ii-V-i, modal minor, chord structures and common progressions in all keys, and memorization of standard repertoire.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-1680 Jazz Performance and Improvisation II.

MUS-2680 Jazz Performance and Improvisation IV
2 Credits
Fourth level study of improvisation within jazz style and presentation as performance. Includes performance of accumulated repertoire, blues composition, refined group playing and performance of memorized standard repertoire in all keys.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): MUS-2670 Jazz Performance and Improvisation III.

MUS-2710 Arranging II
2 Credits
Building on the rhythm section, this study concentrates on writing for trumpet, trombone and saxophone individually, in combination and as instrumental families. Ranges, tonal color, combinations in the context of an arrangement are investigated. Further development of skills introduced in Arranging I.
Lecture: 2 hours
Prerequisite(s): MUS-1720 Arranging I, or departmental approval.

MUS-2720 Arranging III
2 Credits
Development of the linear approach of multiple horn scoring, focusing on backgrounds, supporting lines, and contrapuntal devices as well as melodic presentation, further development of the skills introduced in Arranging II. Elements of arranging for the large ensemble and studio orchestra will be introduced.
Lecture: 2 hours
Prerequisite(s): MUS-2710 Arranging II, or departmental approval.

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)

ZNDT-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.

ZNDT-1003 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.
ZNDT-1004 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, evaluate liquid penetrant indications, interpret standards and specifications and inspect welds, castings, forgings and machined components.

Contact hours: 32
Not financial aid eligible.

ZNDT-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.

ZNDT-1006 Nondestructive Testing - Radiographic Inspection (RT) Level 1
4.2 CEU's
This course introduces radiographic principals, terms, definitions, and basic theory. Topics covered give an understanding of how an X-ray tube generates X-radiation, use of X-ray film, film speed, film processing, digital imaging and identification of discontinuities.

Contact hours: 42
Not financial aid eligible.

ZNDT-1007 Nondestructive Testing - Radiographic Inspection (RT) Level 2
4.2 CEU's
This course continues the instruction 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.

ZNDT-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.

ZNDT-1009 Nondestructive Testing - Ultrasonic Inspection (UT) Level 2
4.2 CEU's
This course continues the instruction introduced in Ultrasonic Inspection (UT) Level 1. Emphasis will be placed on the use of angle beam testing to locate and size welding flaws as well as immersion inspection principles. 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 industry, construction industry, manufacturing industry, as well as aircraft inspection will be performed.

Contact hours: 42
Not financial aid eligible.

ZNDT-1014 Nondestructive Test 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: .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-1602 Nuclear Radiopharmacy and Pharmacology
4 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.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to program.

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-1602 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 ad 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-1602 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 NMED-130L Nuclear Medicine Laboratory I and NMED-1501 Radiation Physics and NMED-1602 Nuclear Radiopharmacy and Pharmacology; 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 analyze 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. Examine radionuclides used in therapy including characteristics and production. Emerging technologies and clinical trials will be explored.
Lecture: 1 hour
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: 36 hours per week for 10 weeks (360 hours per semester).
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: 36 hours per week for 16 weeks (576 hours per semester).
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: 36 hours per week for 16 weeks (576 hours per semester).
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 enjoys helping people, the STNA position is for you. STNAs work in a variety of health care settings to improve their patients’ well being by assisting them with personal care and monitoring progress with their recovery goals. STNAs work as Care Partners, Patient Care Assistants, Caregivers, Clinical Assistants, Home Health Aides, Resident Assistants and more. Upon completion of your training, you will be eligible to take the state competency exam and have a certificate in CPR for the Healthcare Provider. Online pre-testing practice is offered. The State exam takes place approximately two to three weeks after the conclusion of the program and is included in the cost of the program.

Contact hours: 108
Not financial aid eligible.

ZNAT-1006 Train the Trainer: Become an STNA Instructor
3.2 CEU’s

This 32-hour course is designed to prepare nurses to coordinate and/or teach the ODH state-approved Nurse Assistant Training Competency and Evaluation Program (NATCEP).

Contact hours: 32
Not financial aid eligible.

ZNAT-1007 STNA Open Lab
20 CEU’s

This course is a dual state tested nurse aid and patient care assistant curriculum. This course prepares the student to work in either a long term care environment or an acute care hospital environment as a nurse aid.

Contact hours: 200
Not financial aid eligible.

ZNAT-1013 State Tested Nursing Assistant - Accelerated
8.8 CEU’s

This course meets the standards and guidelines set forth by the Ohio Department of Health for training as a state tested nurse aide. After successful completion of this course, students will be eligible to take the Ohio Department of Health nurse aide examination for certification as a State Tested Nurse Aide.

Contact hours: 88
Not financial aid eligible.

Nursing (NURS)

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.

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.

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.

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; PSY-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: 1.3 hour
Other Required Hours: 10.7 Clinical Lab hours per week.
Prerequisite(s): NURS-2300 Specialized Health Care and departmental approval.

Occupational Therapy Assisting Technology (OTAT)

OTAT-1300 Occupational Therapy Principles
2 Credits
Overview of history, development, philosophy, theory and practice of occupational therapy profession. Discussion of role and responsibilities of occupational therapy assistant. Study of models of health, illness, wellness, therapeutic and professional relationships, exploration of cultural, ethical and legal issues in health care. Roles and education of occupational therapy personnel, and professional organizations.
Lecture: 2 hours
Prerequisite(s): None.

OTAT-1310 Task Analysis
2 Credits
Occupational therapy practice uses activities and tasks in achieving therapeutic goals in treatment and rehabilitation of persons with occupational performance dysfunction resulting from disease or disability. Activities and tasks used in therapy to facilitate communication, develop relationships, increase self esteem, and assess and develop specific sensory, motor, psychological, social, and cognitive skills for learning, organizing work, and solving problems.
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 individuals 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 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 serving 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 agency 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): OTAT-2330 Techniques in Physical Disabilities, OTAT-2860 Practicum III, and departmental approval.

OTAT-1980 Therapeutic Use of Self
2 Credits
The student will learn the art of relating to others through experiential activities, self-assessments and role playing activities to gain practical experience in initiating and responding to communications with a flexible, authentic and confident approach
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 develop-mental 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 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. Assignment 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.

Online Professional Development Courses (ZONL)

ZONL-1001 Introduction to PC Troubleshooting -Online
2.4 CEU's
Intro to PC Troubleshooting takes you step by step through the typical hardware and operating system problems encountered by technicians, teaching troubleshooting techniques to decipher any problem, and giving you the skills you need to solve them. This course shows you how to maintain and optimize a Windows PC.
Contact hours: 24
Not financial aid eligible.

ZONL-1007 Creating Web Pages I - Online
2.4 CEU's
Create and post your very own Web site on the Internet in this extensive, hands-on, six-week workshop. Learn about the capabilities of the World Wide Web and the fundamentals of Web design. Plan content, structure/ layout, format text, and build links between the pages. Also covered will be how to add color, backgrounds, graphics, tables, hot buttons, and animation.
Contact hours: 24
Not financial aid eligible.
ZONL-1047 Introduction to Networking - Online
2.4 CEU's
Introduction to Networking explains computer networking basics in terms you can easily understand, using concepts common to everyday, non-computing experience. A brief introduction to networking history provides context, explaining how networks became so important to businesses and individuals. The course emphasizes networking fundamentals, explaining the software and hardware that makes networking possible. The course stresses understanding how and why networks work, rather than focusing on memorization of terms or numbers.
Contact hours: 24
Not financial aid eligible.

ZONL-1055 Introduction to SQL - Online
2.4 CEU's
Learn the key concepts of Structured Query Language (SQL). Basic structure of relational databases and how to read and write simple and complex SQL statements and advanced data manipulation techniques are covered in this course.
Contact hours: 24
Not financial aid eligible.

ZONL-1056 Introduction to Oracle - Online
2.4 CEU's
Learn how to use the Oracle database management system to plan, organize, and manage your data. Introduction to Oracle will provide you with a practical hands-on approach to relational databases concepts and Oracle's database management system. This course will introduce you to the Structured Query Language (SQL), Oracle's SQL*Plus, and other valuable tools used to develop, manage, and reference an Oracle database.
Contact hours: 24
Not financial aid eligible.

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-1079 Introduction to Java Programming - Online
2.4 CEU's
Learn the basics of computer programming and write programs, integrate input and output, calculations, decision making, and loops using Java programming.
Contact hours: 24
Not financial aid eligible.

ZONL-1083 Introduction to C++ Programming - Online
2.4 CEU's
Learn how to program in C++. No programming experience is required. Topics include Data Types and Computer Memory, Storing Data in Variables, Using Arrays, and more.
Contact hours: 24
Not financial aid eligible.

ZONL-1082 Intermediate Oracle - Online
2.4 CEU's
PL/SQL is Oracle's procedural language extension to Structured Query Language (SQL). Gain hands-on experience with Oracle's PL/SQL programming language. Learn the building blocks and core features of PL/SQL, including expressions, various iterations, and built-in functions.
Contact hours: 24
Not financial aid eligible.

ZONL-1103 Introduction to C# Programming, - Online
2.4 CEU's
Learn the fundamentals of computer programming with C#, the in-demand and incredibly useful programming language that incorporates the best features of Visual Basic, C++, and Java.
Contact hours: 24
Not financial aid eligible.

ZONL-1107 Fundamentals of Supervision and Management - Online
2.4 CEU's
This course will help you master the basics of business by learning the language of management. Learn the skills required to delegate responsibility and motivate your employees, solve problems and resolve conflicts, manage time, and understand how to influence and direct other people's performance.
Contact hours: 24
Not financial aid eligible.

ZONL-1108 Fundamentals of Supervision and Management II - Online
2.4 CEU's
Learn how to be a more effective manager or supervisor. Master the basics of communicating effectively, and learn tools for developing your own interpersonal skills. In this course, you will learn traits, which include emotional intelligence, the need for power, conscientiousness, agreeableness, and more.
Contact hours: 24
Not financial aid eligible.

ZONL-1111 Distribution and Logistics Management - Online
2.4 CEU's
Distribution and logistics management is a critical company function. Professionals in this field play a key role in fulfilling customer demands, ordering and managing inventory, controlling inbound and outbound shipments, reducing costs, saving time, and meeting company objectives. This course will not only show you how to create and operate a logistics function, but it will also show you how to achieve success through a combination of strategies and tactics.
Contact hours: 24
Not financial aid eligible.

ZONL-1126 Accounting Fundamentals II - Online
2.4 CEU's
While it is true that accounting professionals are scarce, those with corporate accounting experience are even rarer. This course will build on the knowledge you gained in our Accounting Fundamentals course to provide you with a solid understanding of corporate accounting practices. You'll be able to analyze transactions and prepare various corporate financial reports. You'll also gain practical experience working with dividends, plant assets, depreciation, accrued revenue and expenses, retained earnings, stockholders' equity, and more.
Contact hours: 24
Not financial aid eligible.
ZONL-1204 Introduction to PHP and MySQL -Online
2.4 CEU's
Learn how to create an interactive Web site, allowing visitors to post and retrieve information provided by you or your site's visitors. Learn how to create dynamic Web pages using the PHP programming language and the MySQL database server in this six-week online course.
Contact hours: 24
Not financial aid eligible.

ZONL-1218 Intermediate C# Programming -Online
2.4 CEU's
Build upon your current knowledge of programming logic by writing Graphical User Interface (GUI) applications in the C# programming language. This course will show you how to write professional looking applications with many of the common GUI controls, such as buttons, labels, text boxes, check boxes, and radio buttons.
Contact hours: 24
Not financial aid eligible.

ZONL-1370 Introduction to ASP.NET -Online
2.4 CEU's
Learn how to use Microsoft's Visual Web Developer to create exciting, interactive, and polished Web sites with ASP.NET. Develop a community-based Web site that allows users to register, log in, create and update profiles, and post messages to a forum using ASP.NET's membership features.
Contact hours: 24
Not financial aid eligible.

ZONL-1437 Intermediate PHP and MySQL -Online
2.4 CEU's
Learn how to create an interactive online store complete with an online catalog of products, allowing customers to browse the catalog to select items, place them in a shopping cart, and complete an order. In this six-week online course, you'll see how to create a commercial online store using the PHP programming language and the MySQL database server.
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-1527 Intermediate SQL -Online
2.4 CEU's
Expand your knowledge of Structured Query Language (SQL), the industry standard database programming language. Learn advanced techniques for updating various types of data stored in tables.
Contact hours: 24
Not financial aid eligible.

ZONL-1553 Introduction to Photoshop CS5 -Online
2.4 CEU's
You'll get detailed, step-by-step instructions from an expert and columnist for Photoshop User magazine who has twice been nominated for the Photoshop Hall of Fame. You'll have no trouble following each step—even if you've never used a computer for graphics before. And you'll have lots of fun putting your new skills into action in this project-oriented course.
Contact hours: 24
Not financial aid eligible.

ZONL-1554 Introduction to Programming -Online
2.4 CEU's
In this course, learn to use Just BASIC, a free Windows programming language, to create stand-alone applications for professional or personal use. You will learn how to work with graphical user interfaces, controls, variables, arrays, conditional logic, and loops, and examine subroutines, functions, and debugging.
Contact hours: 24
Not financial aid eligible.

ZONL-1556 Teaching Smarter With SMART Boards -Online
2.4 CEU's
Learn how to create outstanding presentations with SMART Board and SMART Notebook technology. Techniques such as creating your own SMART board lessons, blending text, videos, and graphics, and more are covered in this course. Windows Operating System Pentium III 750 MHz processor 512 MB RAM recommended 250 MB of free hard disk space for minimum installation (1000 MB for full installation with Gallery collections) Note: You will receive instructions in Lesson 3 to download the SMART software. If you will be using the 30-day free trial offer, please do not download it prior to Lesson 3. This course was written for the Windows Operating System. There is similar SMART software available for Mac O/S X. If you take this course and are using a Mac, please be advised there are noticeable differences between the Windows version and the Mac version.
Contact hours: 24
Not financial aid eligible.

ZONL-1564 Creating WordPress Websites -Online
2.4 CEU's
In this course, you'll get hands-on experience with this powerful tool as you create your own WordPress com site and blog, build an attractive, sophisticated blog or website without having to learn any special coding.
Contact hours: 24
Not financial aid eligible.

ZONL-1573 Intermediate Microsoft Excel 2010 -Online
2.4 CEU's
Take your Excel skills to the next level! Master charting, PivotTables, Slicers, Sparklines, and other advanced features of Microsoft Excel 2010.
Contact hours: 24
Not financial aid eligible.

ZONL-1576 Advanced Web Pages -Online
2.4 CEU's
Learn to write HTML code for page content and CSS code for page styling. Master cutting-edge techniques that take advantage of HTML5 and CSS3, the latest versions of the languages used to create modern 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-1584 Creating a Successful Business Plan -Online
2.4 CEU's
Turn your business ideas into a solid plan for financing and long-term success. Committing your idea to paper in the form of a business plan not only increases your chances of obtaining financing; it also keeps your business strategically focused.
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-1588 Creating WordPress Websites II -Online
2.4 CEU's
Learn to build content management websites and blogs with WordPress.org, the world's most popular Web page publisher.
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-1611 Introduction to CorelDRAW X5 - Online
2.4 CEU's
Unleash your creative genius! Learn to draw with confidence using CorelDRAW to design professional newsletters, greeting cards, Web graphics, logos, and exquisite art created from your own photos. In these lessons, you'll delve into the basics of graphic design as you learn about line and shape tools, color fills, layers, text tools, page layout, templates and import and export functions. In addition, you'll discover how to apply special effects including shadows, transparencies, 3D effects, distortions, and PowerClips. Whether you're designing for business or pleasure, this course will give you all the skills you need to create images of the highest quality.
Contact hours: 24
Not financial aid eligible.

ZONL-1615 Introduction to Adobe Acrobat X - Online
2.4 CEU's
Learn important features such as creating images, adding pages, changing text, and more using Acrobat X Pro.
Contact hours: 24
Not financial aid eligible.

ZONL-1619 Introduction to Python 3 Programming - Online
2.4 CEU's
Learn how to create basic programming structures including decisions and loops using Python 3 Programming. Advanced topics such as object-oriented programming with classes and exceptions are also covered.
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-1698 Introduction to Photoshop CS6 - Online
2.4 CEU's
Adobe Photoshop CS6 is a powerful software solution providing support and specialized editing tools for digital photographers and graphic artists. Learn techniques to edit and enhance digital images, cropping, rotating, and sizing images, add text, retouch, and even clone away unwanted elements from images.
Contact hours: 24
Not financial aid eligible.

ZONL-1699 Intermediate Photoshop CS6 - Online
2.4 CEU's
Take your Photoshop skills to the next level by exploring more advanced features in Photoshop such as non-destructive editing, creating reusable templates, and using Smart Objects.
Contact hours: 24
Not financial aid eligible.
ZONL-1701 Advanced Microsoft Excel 2010 - Online 2.4 CEU's
Any proficient Microsoft Excel user will agree that the program is a powerful analytical tool. Wouldn't it be great to learn how to effectively use all the advanced Excel features? In this practical and information-packed course, you'll see how to maximize this program's functions and capabilities. Most organizations rely heavily on Excel to consolidate, analyze, and report financial information. Your company is probably no exception. By learning these advanced techniques, you can become more valuable to your organization.
Contact hours: 24
Not financial aid eligible.

ZONL-1707 Video Game Design and Development Certificate - Online 50 CEU's
The Video Game Design and Development online training program is the place to start if you're seeking a professional career as a video game designer and developer. This program is also well-suited for enthusiastic amateurs and gamers looking to explore this exciting field as a recreational endeavor.
Contact hours: 500
Not financial aid eligible.

ZONL-1716 Communication & Professional Practice - Online 4 CEU's
The professional home inspector is required, both verbally and in writing, to describe the inspection process and communicate inspection findings to the client. It is important that the home inspector be able to communicate clearly and effectively to ensure that clients understand the inspection results and the report. Students develop their oral and written communication skills, and learn the reporting requirements and proper conduct for a professional home inspector.
Contact hours: 40
Not financial aid eligible.

ZONL-1732 Professional Technical Writing - Online 9.6 CEU's
In this course, you'll learn how to design and create technical manuals and reports through project-based scenarios using a systematic writing process. You'll learn how to write and revise technical reports and software manuals (two key technical writing formats). You will also get the chance to practice your technical writing skills by completing four hands-on assignments.
Contact hours: 96
Not financial aid eligible.

ZONL-1743 Introduction to CSS3 and HTML5 - Online 2.4 CEU's
Learn how to create state-of-the-art Web sites using modern CSS3 and HTML5 techniques.
Contact hours: 24
Not financial aid eligible.

ZONL-1745 SharePoint Administrator Complete Skills - Online 0.8 CEU's
This eight-hour course provides the knowledge and skills to create, configure and manage Web applications and site collections in SharePoint 2010.
Contact hours: 8
Not financial aid eligible.

ZONL-1750 Creating Mobile Apps with HTML5 2.4 CEU's
Build your first mobile app using HTML5. In this course, you'll learn how to imagine, design, build, and optimize a cross-platform mobile app using the very latest HTML5 standards.
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-1760 SharePoint 2013 Essentials - Online 0.6 CEU's
The Microsoft SharePoint 2013 Essentials course introduces the new features and functionality of SharePoint 2013. It focuses on enabling users to perform common day-to-day tasks when working with SharePoint 2013.
Contact hours: 6
Not financial aid eligible.

ZONL-1769 Intermediate Microsoft Excel 2013 2.4 CEU's
Take your Excel skills to the next level! Master charting, PivotTables, Slicers, Sparklines, and other advanced features of Microsoft Excel 2013.
Contact hours: 24
Not financial aid eligible.

ZONL-1771 Intermediate QuickBooks 2014 2.4 CEU's
This course is designed for those QuickBooks users who have a good grasp on the basics or have successfully completed the Introduction to QuickBooks course. Learn many of the advanced features and applications using QuickBooks 2014.
Contact hours: 24
Not financial aid eligible.

ZONL-1772 Advanced CSS3 and HTML5 2.4 CEU's
The Advanced CSS3 and HTML5 online course will help you gain valuable skills essential to creating modern websites.
Contact hours: 24
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-1781 Introduction to Google Analytics
2.4 CEU's
The course guides you step by step, report by report, through the major parts of the Google Analytics interface. Learn to use Google Analytics to make the most of your online traffic.
Contact hours: 24
Not financial aid eligible.

ZONL-1783 Introduction to InDesign CS6
2.4 CEU's
Get hands-on desktop publishing training and learn how to design and create professional-quality letterhead, business cards, brochures, PDF files that play movies, and more in InDesign CS6.
Contact hours: 24
Not financial aid eligible.

ZONL-1784 Introduction to JavaScript
2.4 CEU's
Add interactivity to your pages by creating features such as buttons, picture carousels, and collapsible panels to your Web pages with JavaScript.
Contact hours: 24
Not financial aid eligible.

ZONL-1786 Introduction to Lightroom 5
2.4 CEU's
Learn how to prepare, edit, organize photos quickly and effectively, and more using Adobe Photoshop Lightroom 5.
Contact hours: 24
Not financial aid eligible.

ZONL-1787 Introduction to Microsoft Excel 2013
2.4 CEU's
Introduction to Microsoft Excel 2013 will teach you dozens of shortcuts and tricks for setting up fully formatted worksheets quickly and efficiently. Learn how to use the function wizard to quickly and automatically calculate statistics, loan payments, future value, and more. Get tips on sorting and analyzing data, designing custom charts and graphs, creating three-dimensional workbooks, building links between files, endowing worksheets with decision-making capabilities, and automating frequently-repeated tasks with macros and buttons. This informative course covers the new Quick Analysis, Flash Fill, and charting capabilities available in Excel 2013.
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-1802 Photoshop Elements 12 for the Digital Photographer
2.4 CEU's
Learn techniques for editing images, fixing flaws, enhancing the final product, creating simple art projects, preparing images for email and the Web, organizing your images, and more using Adobe Photoshop Elements 12.
Contact hours: 24
Not financial aid eligible.
ZONL-1831 Microsoft SharePoint 2013 Certification Training
8.2 CEU’s
This program will provide you with the skills you need to work within and manage SharePoint sites. Begin with an introduction to SharePoint versions, layouts, and navigation, in addition to SharePoint basics such as list and library views. Then learn to manage sites and page content, including wiki pages. Practice working within forms libraries, creating InfoPath forms, and managing site columns and content types. Finally, experience SharePoint integration with Office applications, manage SharePoint site permissions, and participate in user communities. During the second part of the program, you will learn the fundamentals of managing SharePoint sites. You will also learn business connectivity services, information management policies, and the organization of content using settings and rules. With these new skills, manage comprehensive sections on the Document ID Service, document sets, publish to a server, and configure and consume site search results.
Contact hours: 82
Not financial aid eligible.

ZONL-1832 Understanding the Cloud - Online
2.4 CEU’s
Gain a clear understanding of IaaS, SaaS, PaaS, big data, cloud infrastructure, and the different types of clouds (public, private, and hybrid), and more in this course.
Contact hours: 24
Not financial aid eligible.

ZONL-1833 Using Social Media in Business - Online
2.4 CEU’s
This course will give you a solid foundation and thorough understanding of what social media is and how you can use it to grow your business. Learn about the five most popular social media platforms—Facebook, Twitter, LinkedIn, Pinterest, and Google+. Gain techniques for measuring and tracking your social media success.
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-1838 Intro to QuickBooks 2015
2.4 CEU’s
Learn to manage the financial aspects of a small business quickly and efficiently using QuickBooks. QuickBooks is designed especially for the small-to-midsized business owner who needs a fully functional accounting system that’s also easy to use.
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-1849 Intermediate QuickBooks 2015
2.4 CEU’s
This course is designed for those QuickBooks users who have a good grasp on the basics or have successfully completed the Introduction to QuickBooks course. Learn many of the advanced features and applications using QuickBooks 2015.
Contact hours: 24
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-1851 Microsoft Excel 2013 Certification Training
7 CEU’s
Through this Excel training, you will learn essential skills to create and edit basic worksheets and workbooks. You will learn advanced formulas, lists, and illustrations. You will then advance to adding charts, complex formatting, styles, and pivot tables. In the advance stages of the program, you will audit and analyze worksheet data to identify trends and progress. You will also strategically use data tools, collaborate with others, and create and manage macros. The Microsoft Excel 2013 Certification Training program teaches students skills in Microsoft Excel 2013 and prepares them for the Microsoft Office Specialist (MOS) Certification Exam 77-420.
Contact hours: 70
Not financial aid eligible.


ZONL-1852 Microsoft Outlook 2013 Certification Training  
4.5 CEU's

The Microsoft Outlook 2013 Certification Training program teaches you the necessary skills to work in Outlook 2013, while preparing you for the Microsoft Office Specialist (MOS) Certification Exam 77-422. You will learn to use the ribbon, tabs, groups, and commands, work with the backstage view, set up accounts, create messages for a variety of purposes, and work with calendars and contacts. The program will also provide you with the ability to create tasks and notes, manage signatures and themes, toggle between inboxes using filtering, search folders, and archive.  

Contact hours: 45  
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-1854 Microsoft Word 2013 Certification Training  
7 CEU's

The Microsoft Word 2013 Certification Training program also prepares you for the Microsoft Office Specialist (MOS) Certification Exam 77-418. This online training program is presented in a step-by-step manner, enabling you to learn by completing readings, hands-on exercises and watching video presentations. The program also includes quizzes and exams, so your skills are regularly assessed.  

Contact hours: 70  
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-1856 Intermediate Microsoft Access 2013  
2.4 CEU's

Do you want to take your Microsoft Access 2013 skills to the next level? In this course, you'll learn how to use this program's advanced features to build a fully functional database from scratch.  

Contact hours: 24  
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 411: 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-1863 Introduction to Microsoft Access 2013 2.4 CEU's
Learn how to organize, store, edit, manage, report, and more using Microsoft Access 2013
Contact hours: 24
Not financial aid eligible.
ZONL-1867 Advanced Microsoft Excel 2016 2.4 CEU's
Learn how to effectively advanced features in Microsoft Excel 2016. Topics include data tables, creating timelines, calculating fields, importing external data, and more.
Contact hours: 2.4
Not financial aid eligible.
ZONL-1869 Computer Skills for the Workplace 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-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-1871 Introduction to Microsoft Excel 2016 2.4 CEU's
This course will teach you shortcuts and tricks for setting up fully formatted worksheets quickly and efficiently. Get tips on sorting and analyzing data, designing custom charts and graphs, creating three-dimensional workbooks, building links between files, endowing your worksheets with decision-making capabilities, and automating frequently-repeated tasks with macros and buttons. This informative course covers Quick Analysis, Flash Fill, and powerful charting capabilities available in Microsoft Excel 2016.
Contact hours: 24
Not financial aid eligible.
ZONL-1872 Intermediate Microsoft Excel 2016 2.4 CEU's
Take your Excel skills to the next level! Master charting, PivotTables, Slicers, Sparklines, and other advanced features of Microsoft Excel 2016.
Contact hours: 24
Not financial aid eligible.
ZONL-1873 Introduction to Microsoft Access 2016 2.4 CEU's
Learn how to organize, store, edit, manage, and report on hundreds of thousands of records using Microsoft Access 2016. Start with the basics of database concepts and structure, and learn to build and customize tables to store data. Relational databases, building forms, generating reports, and more are covered in this course.
Contact hours: 24
Not financial aid eligible.
ZONL-1874 Intermediate Microsoft Access 2016 2.4 CEU's
Master more advanced techniques for this powerful database program, including importing Excel spreadsheets as tables, creating query calculations to crunch numbers, and using Visual Basic to automate common tasks.
Contact hours: 24
Not financial aid eligible.
ZONL-1875 Introduction to Microsoft Word 2016 2.4 CEU's
Learn to use the basic features of Word 2016 (now available through Office 365) to type, edit, format, spell check, and print professional-looking documents, letters, and reports.
Contact hours: 24
Not financial aid eligible.
ZONL-1876 Intermediate Microsoft Word 2016 2.4 CEU's
Learn how to use the more advanced features of Microsoft Word 2016 (now available through Office 365) including how to add graphics, use templates, and merge data.
Contact hours: 24
Not financial aid eligible.
ZONL-1877 Introduction to Microsoft PowerPoint 2016 2.4 CEU's
Learn how to use Microsoft PowerPoint 2016 (now available through Office 365) to create professional-looking presentations using slide and layout masters. Embellish your slides with pictures, shapes, WordArt, and SmartArt, as well as multimedia effects such as animations, slide transitions, audio, video, and text and object hyperlinks. Learn new features such as "Tell Me" (an enhanced Help feature).
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-1879 Intro to QuickBooks 2016
2.4 CEU's
Gain control of the financial accounting of your business using this powerful software program, including how to create statements, invoices, track payables and receivables, create estimates, and generate reports.
Contact hours: 24
Not financial aid eligible.

ZONL-1880 Intermediate QuickBooks 2016
2.4 CEU's
Master QuickBooks' more advanced functions, such as exporting and importing list data, using batch invoicing to create multiple invoices, and managing journal entries.
Contact hours: 24
Not financial aid eligible.

ZONL-1881 CompTIA™ A+ Certification Training
23 CEU's
This program will prepare you for CompTIA A+ certification. You can earn this certification after you pass two exams. The CompTIA A+ Certification Exam 220-901, covers the foundational hardware knowledge a PC support technician should know. The CompTIA A+ Certification Exam 220-902 covers the operating system, virtualization, mobile device management and hardware troubleshooting skills. To enroll in this program, you should have basic knowledge of computer hardware and operating systems—for example, how to power up and log on to a machine, how to use a mouse and keyboard, and basic Microsoft Windows navigation skills.
Contact hours: 230
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-1883 CompTIA™ Security+ Certification Training
8 CEU's
Gain the skills you need to be a security professional, and prepare to take the CompTIA™ Security+ certification exam, as you master the basics of system security, network infrastructure, access control, and organizational security. Once you complete this program, you’ll be proficient in basic security concepts such as attacks and mitigation, security applications, risk assessment, disaster recovery and incident response, cloud computing, mobile devices, BYOD and SCADA, in addition to vulnerability assessment.
Contact hours: 80
Not financial aid eligible.

ZONL-1884 Advanced Grant Proposal Writing
2.4 CEU's
Become proficient in the proposal format used by the vast majority of public foundations. Gain a full understanding of the criteria funders use to determine whether your grant proposal gets funded or rejected. Learn about the importance of obtaining community and political support before submitting a proposal to any government agency. A variety of formatting techniques will be mentioned in this course, including buzzwords, fonts, and graphics.
Contact hours: 24
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-1886 Administrative Professional with Microsoft Office 2016
Master voucher
4.5 CEU's
Students should be familiar with using a personal computer, mouse, and keyboard. They should be comfortable in a Windows environment, and have the ability to launch and close activities and navigate to information stored on the computer. They should also have an ability to manage files and folders.
Contact hours: 45.5
Not financial aid eligible.

ZONL-2003 A to Z Grantwriting - Online
2.4 CEU's
A to Z Grant Writing is an invigorating and informative course that will equip you with the skills and tools you need to enter the exciting field of grant writing. You’ll learn how to raise needed funds by discovering how and where to look for potential funders who are a good match for your organization. You’ll also learn how to network and develop true partnerships with a variety of funders, how to organize a successful grant-writing campaign, and how to put together a complete proposal package.
Contact hours: 24
Not financial aid eligible.

ZONL-2023 Fundamentals of Technical Writing -Online
2.4 CEU's
This course will teach you the skills you need to succeed as a technical writer. Learn how to translate complex information into easily understood language. This course provides tips of successful technical writers, including technical writing conventions, interviewing skills, desktop publishing and formatting techniques, key tips for developing graphics and templates, documentation management, and how to publish documents both on paper and electronically.
Contact hours: 24
Not financial aid eligible.
ZONL-2026 Stocks, Bonds, and Investing: Oh, My! -Online
2.4 CEU's
Looking for a good solid class in the basics of stocks, bonds, finance, and investing? Learn about the stock markets, 401k plans, retirement, personal financial issues, and more in this course.
Contact hours: 24
Not financial aid eligible.

ZONL-2047 The Analysis and Valuation of Stocks -Online
2.4 CEU's
The Analysis and Valuation of Stocks is a comprehensive course designed to show you how to research and value stocks. Topics covered in the course include reading financial statements, calculating financial ratios, industrial comparisons, and pricing techniques.
Contact hours: 24
Not financial aid eligible.

ZONL-5059 Project Management Fundamentals
2.4 CEU's
Gain the skills needed to succeed in the fast-growing field of project management. Learn the critical concepts needed to plan, implement, control and close any type of project. In this six-week course, an experienced Project Management Professional will help you master the essentials of project management. Topics covered include project politics and ethics, project measurements, project closure, and more.
Contact hours: 24
Not financial aid eligible.

ZONL-5060 Project Management Applications
2.4 CEU's
Learn essential quantitative and qualitative project management applications in this course. Gain experience with project software, statistics, change management, processes, estimating, project planning, control and data analysis tools. Topics include Earned Value Performance Measurement, Gantt Charts, Network Scheduling, Work Breakdown Structure, and Cost-Volume Analysis, and more.
Contact hours: 24
Not financial aid eligible.

ZONL-6009 Accounting Fundamentals I - Online
2.4 CEU's
Learn the basics of double-entry bookkeeping, while also learning how to analyze and record financial transactions and prepare various financial reports at the end of the fiscal period. Accounts receivable, accounts payable, payroll procedure and more are covered.
Contact hours: 24
Not financial aid eligible.

ZONL-7022 Effective Business Writing -Online
2.4 CEU's
Do you have a nagging suspicion that a small improvement in your writing skills might also improve your career prospects? Don't let small gaps in your business writing skills prevent you from reaching your full potential. By the end of this course, you'll know the secret to developing powerful written documents that immediately draw readers in and keep them motivated to continue until your very last, well-chosen word.
Contact hours: 24
Not financial aid eligible.

ZONL-7031 Microsoft Excel 2016 Certification Training
7 CEU's
In this program, students will learn to use all of the features in Microsoft Word 2016 and be prepared to take the Microsoft Office Specialist certification exams. There is a core exam and an expert exam for Word. Being a MOS Certified Word user proves to employers the student is ready to work in Word. According to Microsoft Learning's site, individuals with a MOS certification in a specific program can earn higher salaries than their non-certified peers: https://www.microsoft.com/en-us/learning/mos-certification.aspx. Upon completion of this program you will be prepared for the Microsoft Office Specialist Certification exams 77-725 and 77-726 (Word) and you will receive exam vouchers for each exam. This program is entirely online and is completed at your own pace. When you register, you receive six (6) months to complete this program.
Contact hours: 70
Not financial aid eligible.

ZONL-7032 Professional Bookkeeping with QuickBooks 2017 (Software Included)
12 CEU's
Prepare for a career in the high-demand field of bookkeeping as you master QuickBooks 2017—the leading financial software tool for small businesses. Hands-on activities will help you learn skills including handling accounts receivable and accounts payable, accounting for fixed assets and recording, and maintaining inventory accounts. In addition, you will gain the knowledge you need to ensure that your accounting methods meet all legal standards.
Contact hours: 120
Not financial aid eligible.

ZONL-7033 Microsoft Word 2016 Certification Training
3.5 CEU's
Description In this program, students will learn to use all of the features in Microsoft Word 2016 and be prepared to take the Microsoft Office Specialist certification exams. There is a core exam and an expert exam for Word. Being a MOS Certified Word user proves to employers the student is ready to work in Word. According to Microsoft Learning's site, individuals with a MOS certification in a specific program can earn higher salaries than their non-certified peers: https://www.microsoft.com/en-us/learning/mos-certification.aspx. Upon completion of this program you will be prepared for the Microsoft Office Specialist Certification exams 77-725 and 77-726 (Word) and you will receive exam vouchers for each exam. This program is entirely online and is completed at your own pace. When you register, you receive six (6) months to complete this program.
Contact hours: 35
Not financial aid eligible.
ZONL-7034 Microsoft Outlook 2016 Certification Training
3.5 CEU's
Successful candidates will create and edit professional-looking email messages, maintain calendars across time zones, and schedule tasks for a variety of purposes and situations. Candidates will use Outlook 2016 to enhance professional correspondence, create calendars, and schedule appointments. Application examples include coordinating building resources, sending messages for marketing campaigns, planning staff meetings, and assigning meeting action items. Objective Domains Manage the Outlook Environment for Productivity Microsoft Office Specialist certification is the only official Microsoft-recognized certification for Microsoft Office globally. Exam 77-731 MOS 2016 certification exams introduce a new performance-based format for improved testing of a candidate’s knowledge, skills and abilities using the MOS 2016 programs: • MOS 2016 exam task instructions generally do not include the command name as in previous versions. Contact hours: 35
Not financial aid eligible.

ZONL-7035 Administrative Professional with Microsoft Office 2016
Master
45.5 CEU's
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. You will also learn Microsoft Office 2016 software and be prepared to sit for the Microsoft Certification Exams 77-727 and 77-728 (Excel), 77-725 and 77-726 (Word), 77-729 (PowerPoint), and 77-731 (Outlook). Contact hours: 455
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.

Operating Systems/Maintenance (ZOPS)

ZOPS-1001 A+ Fast Track
7 CEU’s
This course focuses on A+ exam objectives for the Computing Technology Industry Associate (CompTIA) and is designed for those responsible for the installation, upgrade, repair, configuration, and troubleshooting of PC systems hardware and software. Participants will demonstrate their ability to diagnose, maintain, and perform minor repairs on PC systems and peripherals in our specially designed hardware and software labs. You will learn the essential competencies required to provide technical support. Contact hours: 70
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, surfaced, 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-1410 Mechanical Optics I
2 Credits
Introduction to ophthalmic laboratory procedures. Abrasive cutting, lapping, surface inspection, and calculations for prisms and spheres. Care of laboratory equipment. Lecture: 1 hour. Laboratory: 3 hours Prerequisite(s): Departmental approval: admission to program.

OPT-1420 Mechanical Optics II
2 Credits
Apply knowledge of the production flow, equipment use, and materials used in an optical finishing laboratory. Basic laboratory concepts and manipulative skills required to make a pair of multifocal vision eyewear. Includes topics on laboratory safety, personal safety, application of machine and instrument maintenance. Lecture: 1 hour. Laboratory: 3 hours Prerequisite(s): OPT-1410 Mechanical Optics I.

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-1620 Contact Lens II  
3 Credits
Principles of operation and design of instruments applicable to fitting of contact lenses. Optical principles and materials applicable to design processes and relationship to physical condition and structure of eye in its abnormal state.
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): OPT-1610 Contact Lens I.

OPT-1710 Introduction to Patient Care  
3 Credits
Introduces students to Metric conversion, basic optics, lensometry, refractions, tonometry, and the fundamentals of microbial control.
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 Ophthalmological 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-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 learned ophthalmic assisting techniques in a clinical setting. Emphasis on records keeping, preliminary examination of the eye, cleaning and disinfection of equipment, ophthalmic pharmacology, and professionalism.
Other Required Hours: Directed Practice: 30 hours per week for the duration of 16 weeks.
Prerequisite(s): Concurrent enrollment in OPT-1720 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 hour  
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 hour  
Prerequisite(s): Departmental approval.

OPT-2701 Refractometry  
3 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: 2 hours. 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 hour  
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 OPT-2971 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. Use of more advanced skills and management techniques, payroll, hiring, termination skills, and labor relations. Discussions on 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)

ZSTA-1010 Myers-Briggs Type Indicator (MBTI) for the Individual
0.4 CEU's
The nationally recognized Myers-Briggs Type Indicator (MBTI) is used to help participants understand differences and find new ways of working more effectively with each other. Prior to the workshop participants will complete an online inventory. Participants will understand their personality preferences and how they relate to and work with other styles. As a result participants will gain clarification about their preferences and behaviors and how to modify their approach when working with others.
Contact hours: 4
Not financial aid eligible.

Paralegal Studies (PL)

PL-1001 Introduction to Paralegal Profession
3 Credits
Introduction to the practical aspects of working within the paralegal field. Instruction includes the legal status of paralegals, ethical constraints placed upon those in the legal profession, sources of American law, an overview of the U.S. legal system, legal settings, and paralegal skills, including organizational skills and attention to detail, with particular emphasis on legal writing. Students are encouraged to begin professional development, including membership in paralegal organizations.
Lecture: 3 hours
Prerequisite(s): None.

PL-1010 Introduction to Legal Writing
2 Credits
Introduces paralegal students to a systematic approach to legal writing, including grammar and word usage. Categories of legal writing will include client letters, private documents, and pleadings.
Lecture: 2 hours
Prerequisite(s): None.

PL-1300 Civil Procedures
3 Credits
Examine Rules of Courts which govern civil lawsuits, with emphasis on the Ohio Rules of Civil Procedure. Analyze and apply rules pertaining to commencement of action, service, motion practice, discovery issues (including Federal Rules pertaining to e-Discovery), and appellate practice. Students begin portfolio of legal documents developed throughout program of study. Survey alternatives to litigation such as arbitration, negotiation, and mediation.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I; and PL-1001 Introduction to Paralegal Profession or concurrent enrollment.

PL-1400 Basic Legal Research and Writing
3 Credits
Introduces paralegal students to a systematic approach to legal writing, including grammar and word usage. Categories of legal writing will include client letters, private documents, and pleadings.
Lecture: 2 hours
Prerequisite(s): None.

PL-1460 Worker's Compensation Law
3 Credits
[Cross-listed with BADM-1460. Credit can only be 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.
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): IT-1010 Introduction to Microcomputer Applications, or departmental approval: equivalent experience or skills.

PL-1600 Alternative Dispute Resolution
2 Credits
Description and overview of variety of dispute resolution mechanisms including litigation, voluntary arbitration, court-annexed or mandatory arbitration, negotiation and mediation, in order to demonstrate their interrelationships and use in the American legal system. Paralegal involvement discussed in context of each of these techniques.
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
Introduces students to immigration law as an integral part of the administrative process affecting a multitude of socio-economic and geo-political disciplines in the United States and abroad. Reviews substantive immigration law and procedures as it relates to non-immigrants and immigrants.
Lecture: 3 hours
Prerequisite(s): PL-1000 Introduction to Paralegal Profession.

PL-1720 Elder Law & Estate Planning
3 Credits
Introduction to the paralegal concepts and documents used in pre-death estate planning and issues in regards to the elderly. Wills, Trusts, Powers of Attorney, the unified gift/estate tax, gifting options, Social Security, and the methods and advantages/disadvantages of avoiding probate. Covers the documentation regarding guardianship, living wills, and healthcare powers of attorney, along with medical and care options of the elderly, including Medicare options and Medicaid.
Lecture: 3 hours
Prerequisite(s): PL-1000 Introduction to the Paralegal Profession, or concurrent enrollment; and ENG-1010 College Composition I, or concurrent enrollment; or departmental approval: permission from program manager.

PL-1730 Criminal Law for Paralegals
3 Credits
Introduction to the American Criminal Justice System and the role of the paralegal in that system. Criminal law and procedure will be explored along with legal documents relevant to criminal law practice.
Lecture: 3 hours
Prerequisite(s): PL-1000 Introduction to Paralegal Profession, or concurrent enrollment; and, ENG-1010 College Composition I, or concurrent enrollment; or departmental approval: permission from program manager.

PL-1815 Special Topics: Administrative Law for Paralegals
3 Credits
This course provides a basic survey in state and federal administrative law. Students will study the jurisdiction, powers, and responsibilities of selected administrative agencies and explore the role of the paralegal in the preparation of agency reviews and administrative hearings.
Lecture: 3 hours
Prerequisite(s): PL-1000 Introduction to the Paralegal Profession and ENG-1010 College Composition.

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-2000 Law Office Administration
2 Credits
Fundamentals of law office management and organization. Includes basic principles and structure of management, employment opportunities for paralegal, accounting systems, marketing issues, administrative and substantive systems in law office, and law practice technology.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): Departmental approval, or admission to program.

PL-2030 Legal Nurse Consulting
2 Credits
Study of functions of Legal Nurse Consultant and exploration of career opportunities available. Focus on applicable principles of medical and legal ethics and how to apply them to professional situations.
Lecture: 2 hours
Prerequisite(s): Departmental approval.

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. Collect and prepare evidence according to Ohio and Federal rules of evidence.
Lecture: 4 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.
PL-2330 Advanced Medicolegal Research
3 Credits
Lexis, med-line, and internet research. Emphasis on legal and medical resources using legal and medical databases on-line, including the internet. Focuses on medical research used in determining appropriate standards of care and medical research tools.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PL-2030 Legal Nurse Consulting, and PL-1400 Basic Legal Research and Writing.

PL-2400 Computer Assisted Legal Research
3 Credits
Advancement of skills learned in Basic Legal Research & Writing 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, locate authority and law-related resources on the Internet. Utilize legal specialty Internet resources as well as LEXIS® and/or Westlaw®. Prepare an appellate brief, using Ohio Citation format.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, PL-2430 Medical Record Review and Analysis or concurrent enrollment.

PL-2410 Intellectual Property
3 Credits
Overview of intellectual property, including review of basics of personal property law, contract law and how and why each relates to ownership and transfer of intellectual property. Examination of trade secrets, patents, trademarks and service marks, and copyrights. Discussion of what is protected, duration of protection, fair use doctrine, and theft of service statutes.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2420 Probate Law
3 Credits
Study common forms of estate administration with focus on study of Ohio Probate Code relating to post-mortem estate administration. Define procedure for estate administration including discovery and determination of assets, appointment of fiduciary, taxation and transfer of property from decedent to beneficiaries. Define modes of property ownership.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2430 Medical Record Review and Analysis
4 Credits
Study of production and preparation of medical record summaries. Focus on performance of investigative functions and witness preparation. Includes identifying standards of care, accessing, interpreting, and summarizing medical records, and interviewing clients, medical witnesses and experts. Lab component offers variety of computer and professional experience. Continued development of professional portfolio.
Lecture: 3 hours. Laboratory: 2 hours
Prerequisite(s): PL-2301 Torts and Evidence, and PL-2330 Advanced Medicolegal Research 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-1400 Basic Legal Research and Writing.

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-1400 Basic Legal Research and Writing.

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. The student will learn the basics of Ohio juvenile law, and how to analyze juvenile issues. Students will survey and discuss 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-1400 Basic Legal Research and Writing.

PL-2530 Marketing and Management for the Legal Nurse
1 Credit
Development of skills necessary to be independent consultant. Focus on marketing techniques, client development, case management, billing, promotional tools, and tax implications for legal nurse consultant.
Lecture: 1 hours
Prerequisite(s): PL-1300 Civil Procedure, PL-2430 Medical Record Review and Analysis or concurrent enrollment.
PL-2540 Family Law
3 Credits
Basic principles and trends in Family Law including marriage, annulment, dissolution, divorce, child support, child custody, visitation, paternity, surrogacy 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.
Lecture: 3 hours
Prerequisite(s): PL-1300 Civil Procedure.

PL-2560 Advanced Litigation
3 Credits
Preparation of case for litigation using creation of trial notebook and mock trial. Students 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 Courses 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-2990 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, mock interviews and advanced research and writing assignments.
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-1016 Job Link Job Readiness Services
3 CEU’s
This course provides ongoing resume review, job placement assistance and follow up services. Students also receive job referrals and information on career fairs hosted by the college and within the community
Contact hours: 30
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 Healthcare Environment (PHE)
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 Adv Comp Edge (CACE) 30
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 Healthcare Environment (PHE) - 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.

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 technicians 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

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-1750 Medication Calculations
1 Credit

Applications and activities to build skills in medication calculations, conversions, and measurements for pharmacy, nursing, and allied health. Includes metric system, formula manipulation, solving algebraic equations and systems, children’s dosages, body surface area (BSA), and weight-based dose calculations. 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 hour  
**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: CTPT001.  

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: CTPT001.  

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.  
**Prerequisite(s):** PHM-1860 Pharmacy Technology Practicum I, PHM-2701 Current Topics in Pharmacy Practice or concurrent enrollment, and departmental approval. CTAN Approved: CTPT001.  

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**
Principles of critical and creative thinking with emphasis on practical applications using theories to improve the quality of mindfulness. Incorporation of skilful analysis, assessment and communication in the problem-solving process.  
**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.

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 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.

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-0990 Language Fundamentals II, or appropriate score on English Placement Test, or departmental approval.
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
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-0990 Language Fundamentals II, or appropriate score on English Placement Test.
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.

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-0990 Language Fundamentals II, or appropriate score on English Placement Test.
OAN Approved: TMAH.

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 themerelated 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 a 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-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.

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.

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-1110 Intermediate Step Aerobics
1 Credit
Emphasizes aerobic dance movements utilizing a step with emphasis on individual performance levels. Students should have step aerobics experience and knowledge of basic step movements and terminology.
Laboratory: 2 hours
Prerequisite(s): Department approval: comparable skills.

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-1130 Archery
1 Credit
Instruction and practice for skill development, safety procedures, equipment care and value as a lifetime activity.
Laboratory: 2 hours
Prerequisite(s): None.

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 game of golf and improving already learned 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.

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 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-1390 Horsemanship
1 Credit
Instruction and practice for skill in the basics of horseback riding at the walk, trot, canter and trail riding. Basic knowledge of riding equipment, the tack (western), parts and health management of the horse.
Laboratory: 2 hours
Prerequisite(s): None.
PE-1400 Whitewater Rafting  
2 Credits  
Introduction to outdoor activities including instruction and participation in specific areas such as whitewater rafting, canoeing, or sailing. 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 specific areas such as 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 dyhana (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-1801 Special Topics: Disc Golf  
1 Credit  
Disc Golf players use golf discs and aim for a Disc Pole Hole, a pole extending up from the ground with chains and a basket where the disc lands. The object of the game is to complete each hole in the fewest number of throws, starting from a tee area and finishing at the Disc Pole Hole. Generally, a course is 9 or 18 Disc Pole Holes long. Players start at one and complete the course in order, playing through to the last hole. The player with lowest total cumulative score wins.  
Laboratory: 2 hours  
Prerequisite(s): None.

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-1808 Special Topics in Meditation Techniques  
1 Credit  
Various meditation techniques will be taught, including mindfulness, walking, body scan and mantra.  
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 neuro-myo-fascial system. The course will provide assessments to identify neuro-muscular 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-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.

PE-2100 Personal Training
2 Credits
Preparation to pass typical national examination for certification as a personal trainer. Covers anatomy, physiology, biomechanics, strength and fitness theory, performance and weight management, exercise programming, and developing a client base.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): PE-1000 Personal Fitness, or departmental approval: based on comparable experience. (First Aid and CPR certificates are required by most personal training accrediting bodies.)

Physical Science (PSCI)

PSCI-1010 Astronomy
3 Credits
[This course is cross-listed as PHYS-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.

PSCI-101L Astronomy Laboratory
1 Credit
[This course is cross-listed as PHYS-101L. Credit can only be earned once for either course.] 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 Chemistry
3 Credits
[This course is cross-listed as CHEM-1010. Credit can only be earned once for either course.] Survey of chemistry as related to environment, health and nutrition, and application of chemical knowledge that affect quality of life. Basic concepts and applications of chemistry: consumer chemistry, periodicity, acids and bases, medicines and drugs, pollution, and conservation. 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; or departmental approval.
OAN Approved: TMNS.

PSCI-102L Chemistry Laboratory
1 Credit
[This course is cross-listed with CHEM-100L. Credit can only be earned once for either course.] 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): PSCI-1020 Chemistry or concurrent enrollment.
OAN Approved: TMNS.

PSCI-1030 Earth
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 environment. Earths 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
1 Credit
[This course is cross-listed as ESCI-103L. Credit can only be earned once for either course.] 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 hours
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 of physical therapist assistant in relation to physical therapist. Survey of physical therapy treatment procedures. Legal and ethical responsibilities relating to health care service. Discussion of stress, its symptoms and behaviors as related to physical therapy.
Lecture: 2 hours
Prerequisite(s): EN-1010 College Composition I, or EN-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: 3 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-1311 Fundamentals of Physical Therapy
2 Credits
Lecture: 1.5 hours. Laboratory: 1.5 hours
Prerequisite(s): PTAT-1300 Functional Anatomy and HTEC-1000 Introduction to Patient Care, 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 hours. Laboratory: 1.5 hours
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-1311 Fundamentals of Physical Therapy, and BIO-2341 Anatomy and Physiology II, and departmental approval.
PTAT-1411 Physical Therapy Procedures
3 Credits
Physical Therapy procedures, emphasizing treatment utilizing physical agents. Use and application of modalities that emanate from electromagnetic and acoustic spectra.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting, PTAT-1300 Functional Anatomy, and PTAT-1311 Fundamentals of Physical Therapy, and departmental approval.

PTAT-1420 Therapeutic Exercise
3 Credits
Physical therapy techniques and principles utilized in therapeutic exercise.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PTAT-1300 Functional Anatomy, and PTAT-1311 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-1311 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
Special considerations of physical therapy approaches, role, and procedures regarding infants and children. Normal 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
Special considerations of physical therapy approaches, role, and procedures regarding the older adult population. Statistics, myths, and legislation regarding aging population. 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. 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. Other required hours: Clinical Practicum: 240 hours per semester (40 hours per week for 8 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. 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-1410 Physical Therapy Procedures or concurrent enrollment, and departmental approval.
PTAT-2970 Practicum Seminar
1 Credit
Integration of knowledge and skills acquired in academic coursework and clinical practicum. Clarify role and function of the physical therapist assistant in preparation for licensure and entry into the workforce.

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.

Physician Assistant (PA)

PA-1200 History and Physical Exam Techniques I
3 Credits
Introduction to skills required for patient-practitioner communication and development of therapeutic interpersonal relations including obtaining and recording the complete medical history with selected portions of the physical exam. Emphasis on cultural diversity influences in therapeutic relationships, patient counseling and/or patient education techniques along with instruction in proper documentation of historical and physical findings.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Departmental Approval: Admission to Physician Assistant program.

PA-1210 History and Physical Exam Techniques II
3 Credits
Instruction, study, and practice of skills required for conduction of a complete physical examination using appropriate equipment, techniques and accurate medical terminology to document findings. Instruction in identification and documentation of normal and abnormal anatomical structures, body system physiology, pathological conditions, symptoms of disorders, clinical findings and provision of appropriate patient education.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1222 Basic Technical and Surgical Skills II
2 Credits
Presentation and discussion of fundamental technical and surgical clinical skills required of Physician Assistant in diagnostic and therapeutic management of primary care and surgical patients. Focus on basic bedside procedures.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1232 Advanced Technical & Surgical Skills
2 Credits
Presentation, discussion, and practice of advanced surgical skills in the preparation of patients for surgery, and to assist physicians in performing procedures in surgery, the emergency room, hospital, office and clinic.

Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1240 Clinical Anatomy
4 Credits
Study of clinical anatomy of the human body with emphasis on important anatomical landmarks required in the physical evaluation of the patient and anatomical relationships of structures to each other. Includes anatomical components of body systems, blood and nerve supply to organs and body regions. Common pathological processes and topical landmarks related to common surgical procedures are covered.

Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1250 Clinical Pharmacology
4 Credits
Application of the principles of pharmacodynamics to calculate drug doses, write and interpret legal and accurate prescriptions for medical conditions.

Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1350 Electrocardiography
1 Credit
Designed to allow students to recognize and interpret electrocardiography (ECG) tracings and their clinical significance. Includes application of Advanced Cardiovascular Life Support (ACLS) treatment protocols, patient education and communication with other health care professionals utilizing appropriate medical terminology as it relates to the cardiac conduction system. Techniques of 12-lead EKG recording and interpretation presented.

Laboratory: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1360 Adjuncts to Diagnosis
3 Credits
Introduction to diagnostic and therapeutic procedures utilized to evaluate pulmonary, abdominal, cardiac, skeletal, genitourinary, neurological, and vascular systems. Includes laboratory, radiography, and respiratory methods and techniques, their indications and general principles of interpretation.

Lecture: 3 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1370 Behavioral Medicine
2 Credits
Focus on the detection and treatment of psychological symptoms and syndromes including stress, abuse (domestic, child and elder), violence, substance abuse through basic patient counseling, assessment of risk factors, pharmaceutical therapy, patient education and/or appropriate patient referrals. Emphasis on cultural sensitivity and strategies to identify and ease patient reaction to illness (psychological/organic) and end of life issues with the application of those strategies to overcome resistance, encourage therapeutic cooperation and assistance in decreasing health risk behaviors.

Lecture: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.
PA-1550 Physician Assistant Profession
1 Credit
Introduction to the Physician Assistant (PA) profession, including information about the history of the profession, the American Academy of Physician Assistants’ (AAPA) Code of Ethics, credentialing and recertification requirements of the PA profession, the PA professional’s role in health care delivery and reimbursement systems, relationship with the supervising physician and other health care professional; information about legislation and governing bodies that affect the profession. Use of appropriate referral sources when patient management is outside scope of PA practice.
Lecture: 1 hour
Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1590 Introduction to Clinical Medicine
2 Credits
Presentation of medical problems and diseases encountered in primary care practice including etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications of diseases. Differential diagnosis of related or similar disease processes included.
Lecture: 2 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1600 Clinical Medicine I
4 Credits
Presentation of medical problems and diseases of the head, eyes, nose, oral cavity/throat (HEENT) respiratory and cardiovascular systems encountered in primary care practice. Topics include etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications of the HEENT, respiratory and cardiovascular systems.
Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I or concurrent enrollment.

PA-1610 Clinical Medicine II
4 Credits
Medical problems and diseases encountered in primary care practice, emphasizing musculoskeletal, neurological, dermatological, genitourinary and gastrointestinal systems. Discussion of the etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management and potential complications included.
Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1620 Clinical Medicine III
4 Credits
Presentation of medical disorders and problems of obstetrics, gynecology and pediatrics with emphasis on age appropriate and culturally diverse patient clinical presentations. Includes recognition, descriptions and research of disease processes based on signs and symptoms, differential diagnoses with identification and utilization of appropriate diagnostic tools and development of a therapeutic plan and preventive medicine.
Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1820 Independent Study/Research in Physician Assistant
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.

PA-2302 Patient Management
2 Credits
This course will provide the student with instruction in patient management by providing the tools for selection and interpretation of diagnostic and therapeutic procedures, correlation of medical history and physical examination data, and integration of diagnostic skills through simulated case studies and problem solving activities.
Lecture: 1 hour. Laboratory: 3 hours
Prerequisite(s): PA-1610 Clinical Medicine II, and PA-1250 Clinical Pharmacology, and departmental approval: admission to the Physician Assistant program.

PA-2501 Emergency Medicine
4 Credits
Provides an overview of potentially life-threatening illnesses and injuries encountered in emergency situations or in the critically ill patient. Provides the physician assistant student with the essentials of assessment and management for the initial evaluation, stabilization, assessment, management and treatment, patient education, disposition and follow-up of an acutely ill patient requiring expeditious medical, surgical, or psychiatric attention, including awareness of special considerations and cultural diversity of patient populations.
Lecture: 4 hours
Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-2611 Preparation for Practice
2 Credits
Self-assess knowledge and skills to determine medical knowledge gaps, development a personal learning plan and prepare for the Physician Assistant National Certification Exam (PANCE). Additionally, strategies for the planning, development and presentation of a health education to the community along with development of strategies for participation in Continuing Medical Education (CME) and the Physician Assistant National Recertifying Exam (PANRE) and maintenance of licensure for practice as a Physician Assistant.
Lecture: 2 hours
Prerequisite(s): Departmental approval: admission to the Physician Assistant program, PA-1600 Clinical Medicine I, and PA-1610 Clinical Medicine II, and PA-1620 Clinical Medicine III.

PA-2820 Advanced Independent Study/Research in Physician Assistant
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.
PA-2942 Field Experience I
4 Credits
Supervised field experience in clinical health care settings designed to emphasize the role of the Physician Assistant to primary care physicians. Students assigned to clinical rotations, under direct supervision of medical personnel, gain exposure to professional practice. Students at the beginning of clinical training should demonstrate beginning assessment skills. As clinical experience continues, the student should demonstrate intermediate to advanced skills, and assume increased individual responsibility as member of medical team. Modular courses PA-294A, PA-294B, PA-294C and PA-294D together will also meet requirements for this course.
Other Required Hours: Field experience: 640 hours (160 hours per rotation.)
Prerequisite(s): PA-2301 Patient Management and concurrent enrollment in PA-2972 Field Experience Seminar I or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2952 Field Experience II
4 Credits
Supervised field experience in clinical health care settings with emphasis on the role of Physician Assistant to primary care physicians. Assignment to clinical rotations, under direct supervision of medical personnel for exposure to professional practice and practical enhancement of beginning patient assessment skills for clinical experience and advancement to intermediate and advanced patient assessment skills with assumption of increased individual responsibility as member of medical team.
Other Required Hours: Field experience: 640 hours (160 hours per rotation.)
Prerequisite(s): PA-2301 Patient Management and concurrent enrollment in PA-2972 Field Experience Seminar I or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2960 Field Experience III
2 Credits
Supervised field experience in clinical healthcare settings designed to emphasize the role of Physician Assistant to primary care physicians. Students assigned to clinical rotations, under direct supervision of medical personnel, gain exposure to professional practice and clinical assessment skills.
Prerequisite(s): PA-2942 Field Experience I.

PA-2972 Field Experience Seminar I
1 Credit
Pre and post rotational on campus seminars. Integrates concepts and knowledge gained from field experience rotations into total learning process. Focus on patient and professional communication, various professional practice issues and topics, and lifelong learning.
Other Required Hours: Seminar: 15 hours per semester.
Prerequisite(s): PA-1620 Clinical Medicine III.

PA-2982 Field Experience Seminar II
1 Credit
Capstone course in Physician Assistant. Post rotational on campus seminars. Integrates concepts and knowledge gained from field experience rotations into total learning process. Focus on patient and professional communication, various professional practice issues and topics, and lifelong learning.
Other Required Hours: Seminar: 15 hours per semester.
Prerequisite(s): Concurrent enrollment in PA-2942 Field Experience I, or PA-2952 Field Experience II, or concurrent enrollment.

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.

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.

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 of basic structure and properties of materials related to opticianry. Includes structure, density, conductivity, and effects of mechanical forces on materials. Special emphasis given to nature and theory of light and application to ophthalmic optics. Demonstrations by use 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
Physics for students majoring in science or engineering. Kinematics and dynamics in one, two, and three dimensions. Conservation laws (energy, momentum, angular momentum), gravitation, simple harmonic motion, heat and thermodynamics. Emphasis on problem-solving using algebra and calculus.
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
Second semester course for students majoring in science or engineering. Electricity and magnetism, light and optics, waves in elastic media, sound.
Lecture: 4 hours. Laboratory: 3 hours
Prerequisite(s): PHYS-2310 General Physics I, and MATH-1620 Calculus II, or departmental approval.
OAN Approved: TMNS, OSC017, and OSC022 (1 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-1330 Plant Propagation  
2 Credits
Introduction to the techniques used to create new food and ornamental plant crops.
Lecture: 1 hour. Laboratory: 3 hours  
Prerequisite(s): None.

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): None.

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: 2 hours. Laboratory: 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.

PST-1420 Landscape Practices  
3 Credits
Study of and practical experience in proper techniques of landscape installation and maintenance. Specifications of American Nursery Association standards emphasized. Diagnosis and resolution of plant problems considered.
Lecture: 2 hours. Laboratory: 3 hours  
Prerequisite(s): None.

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-1431 Graphics for Landscape Design and Construction, 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-1010 Introduction to Microcomputer 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, aeration, 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 Agriculture 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
Understanding the critical roles soil plays in horticulture, agriculture, and construction. Emphasis on soil testing, analysis, and building healthier soils.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): PSCI-1020 Chemistry or CHEM-1000 Everyday Chemistry, 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, and 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, 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): None.
OAN Approved: TMSBS and OSS011.

Police Academy (ZPOL)

ZPOL-1003 Basic Police Academy Update
9.3 CEU's
Basic Police Academy Update training is mandated training for sworn police officers who have been authorized by OPOTC for a certain number of hours to gain OPOTC certification as a peace officer in Ohio.
Contact hours: 93
Not financial aid eligible.
**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-1040 Introduction to Peace and Conflict Studies**  
**3 Credits**  
Introduction to the field of conflict analysis and resolution and 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. Specific conflict situations will also be approached through models of sociocultural dynamics.  
**Lecture: 3 hours**  
**Prerequisite(s):** ENG-1010 College Composition I or concurrent enrollment; or eligibility for ENG-101H Honors College Composition I; or departmental approval; permission from instructor.

**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-2030 Comparative Politics**  
**3 Credits**  
Examination of selected industrialized democracies including the United Kingdom, France, and Germany; transitional states including Russia; and developing nations including Mexico, Nigeria and Laos; and finally the theocratic regime in Iran. Explores the ideologic 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.  
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 play. 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 subfields of security and political economy.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.
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 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 interdisciplinary 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.

POL-2120 Women and Politics
3 Credits
This course is cross-listed as WST-2010. 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.

POL-2130 Politics of Race
3 Credits
Analysis of minority group interactions within the American political system. Focus on the strategies employed both within and outside government to achieve political ideals and their roles and political behaviors in national, state, and local levels.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I.

POL-2140 Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning
3 Credits
This course will integrate theories and skills in Peace Studies and Conflict Management with service learning. Students will gain practical experience, serve their community, and engage with issues surrounding the promotion of social justice, social service, or conflict management at local, regional, national, or international levels. A minimum of 40 hours of service learning required over the course of the semester.
Lecture: 3 hours
Prerequisite(s): POL-1040 Introduction to Peace and Conflict Studies, and POL-2040 Conflict Resolution Skills.

POL-2150 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-2160 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-2170 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 subfields of security and political economy.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.
OAN Approved: TMSBS and OSS012.

POL-2180 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 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-2190 Terrorism and Counterterrorism
3 Credits
An interdisciplinary 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.

POL-2200 Women and Politics
3 Credits
This course is cross-listed as WST-2010. 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.

POL-2210 Politics of Race
3 Credits
Analysis of minority group interactions within the American political system. Focus on the strategies employed both within and outside government to achieve political ideals and their roles and political behaviors in national, state, and local levels.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I.

POL-2220 Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning
3 Credits
This course will integrate theories and skills in Peace Studies and Conflict Management with service learning. Students will gain practical experience, serve their community, and engage with issues surrounding the promotion of social justice, social service, or conflict management at local, regional, national, or international levels. A minimum of 40 hours of service learning required over the course of the semester.
Lecture: 3 hours
Prerequisite(s): POL-1040 Introduction to Peace and Conflict Studies, and POL-2040 Conflict Resolution Skills.

POL-2230 Special Topics: The American Presidency
3 Credits
The 2008 US presidential election promises to be one of the most interesting and contested elections in recent history. The facts that the country is deeply divided along ideological lines, is at war, and there is no incumbent or Vice President in the race greatly increases the need for a scholarly study of the presidency at this time.
Lecture: 3 hours
Prerequisite(s): None.

POL-2240 Special Topics: Black Political and Social Thought
3 Credits
A survey of the main themes and cultural assumptions of political and social thought from ancient to pre-colonial Black Africa, and a comparison with western ancient and medieval political philosophy. Application of philosophy to historical events and current political issues such as gender, class, war and rebellion, economics, and popular culture.
Lecture: 3 hours
Prerequisite(s): ENG-1010 College Composition I.
POL-2820 Advanced Independent Study/Research in Political 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.

POL-282H Honors Advanced 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.

Practical Nursing (PNUR)

PNUR-1200 Physical Assessment for the Practical Nurse
2 Credits

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): 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-1210 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 PNUR-1210 Fundamentals of Practical Nursing; and concurrent enrollment in PNUR-1200 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 PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in BIO-1050 Human Biology Laboratory; and concurrent enrollment in PNUR-1330 Nursing Management of Adults II.

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 Practical Nursing program; and PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1330 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 Practical Nursing program; and PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1330 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 Practical Nursing program; and PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1330 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 Practical Nursing program; and PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1330 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 Practical Nursing program; and PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.
Professional Development Institute (ZPDI)

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...spot profit drains before they get out of hand. From accruals to write-offs, from 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 going to be measured in numbers: dollars and cents.
Contact hours: 8
Not financial aid eligible.

ZPDI-1145 Peer Today, Boss Tomorrow
0.4 CEU's
Making the leap from peer to boss is never easy. In addition to dramatic change, new managers frequently struggle to balance their old coworker relationships with their new management responsibilities. Designed to help participants make a successful transition from "coworker" to "manager" or "supervisor," Peer Today, Boss Tomorrow presents four proven strategies that will help new supervisors navigate changing relationships and prepare for the most difficult situations they are likely to encounter as they assume their new role.
Contact hours: 4
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 you are persuading colleagues, selling a client or energizing a team, the power of your presentation makes the difference between success and failure. This session will afford you the opportunity to experience a personal facilitation touch to understanding dynamic presentation skills. Discover how to present your thoughts and ideas with conviction, control and self-confidence and without trepidation. You will learn your skills you need to become comfortable with your own presentation style. Our experienced subject matter experts will guide you on exactly how to overcome challenges you may face in your world of presenting. We will provide a safe environment for you to practice presenting to increase your confidence and skills.
Contact hours: 4
Not financial aid eligible.

ZPDI-1193 Accountability: The Buck Stops Here
0.4 CEU's
This program is a hands-on workshop for managers to develop an environment of accountability in their group, department, or their entire business. Participants will learn what actions lead to accountable employees and what actions derail this effort.
Contact hours: 4
Not financial aid eligible.

ZPDI-1222 Communicating with Impact
0.4 CEU's
Many organizations focus on technical skills as all-important to success in the workplace. Yet strong interpersonal skills are equally essential in transforming individual contributors into exceptional performers who have a greater impact in their roles. This foundational course provides individuals with a powerful set of interaction skills that enables them to communicate more effectively with colleagues and customers and, in the process, build trust, strengthen partnerships, and achieve desired results.
Contact hours: 4
Not financial aid eligible.

ZPDI-1224 Professional Business Results
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 writing skills to gain greater mastery of grammar, mechanics, and style.
Contact hours: 8
Not financial aid eligible.

ZPDI-1236 Certified Manager of Apartments (CMA)
3 CEU's
Northeast Ohio Apartment Association has a commitment to providing current and future residents with quality properties and services of the highest professional standards through education, publication and advocacy. To further this mission Corporate College, a division of Cuyahoga Community College, and NOAA have partnered to develop, design and deliver a certification program to enhance the knowledge and skills of apartment managers in Northeast Ohio. This 10-day class features local apartment management guest speakers and follows the NAA's Multifamily Housing: The Essential Industry Textbook curriculum. Successful completion of this program will assist in providing growth, professionalism and progress within the Multi-Family Industry. NOAA members, to apply your membership discount please call 216-987-3075 for registration
Contact hours: 30
Not financial aid eligible.

ZPDI-1238 Fundamentals of Meeting & Event Management
3 CEU's
In order to be 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 & Beverage). You will 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-1239 Home Inspector Training
6 CEU's
Whether you are searching for a new career or you are looking for a second income, becoming a home inspector can offer the flexibility (and income!) that you’ve always dreamed of! We’ve partnered with All American Training Institute to provide you with the best home inspection training available. This all-inclusive course is designed to ensure you understand the proper process of a home inspection and current home inspection practices as well as familiarize yourself with the systems of a building and how the systems work as a whole.
Contact hours: 60
Not financial aid eligible.

ZPDI-1240 From Sensors to Wearables to Health Monitoring
1.4 CEU's
This short course is adapted from the Wireless Health and Wearables Master’s and Graduate Certificate offerings at CWRU. In partnership with Corporate College, CWRU is offering this 2-day course, which covers sensors, wearables and wireless health (also known as digital and mobile health). Sensors are a key enabling technology for wearables, while applications of wearables to health and wellness monitoring are one of the most exciting growth areas on the horizon.
Contact hours: 14
Not financial aid eligible.

ZPDI-1241 Future of Aerospace Industry
1.4 CEU's
This course is designed to provide insight on the history and future of the growing international aerospace industry. This course will discuss the critical role of Ohio and the future of the U.S. in a global context. It will have an overall perspective on the business and operational focus. The aim is to prepare participants to become actors in the industry. The past and future influence of other sectors including health, automotive, and the aerospace industry will be explored.
Contact hours: 14
Not financial aid eligible.

ZPDI-1242 Allergen Friendly Series
0.6 CEU's
This interactive online course provides allergen awareness, allergen plan development, and allergen plan specialist for your entire operation and staff. In these courses, 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. Another course within the series walks management through all the elements of food allergens in a food operation, allowing management to decide what will and will not be done. The final course, provides an in-depth understanding of food allergens, product ingredients, and common allergen food items. With this knowledge, you learn how to evaluate a menu and its recipes for their food products. You will also learn all the steps of an operation and how to develop written protocols for each step.
Contact hours: 6
Not financial aid eligible.

ZPDI-1243 Ohio Level Two: Food Safety Manager Certification
1.5 CEU's
This interactive online course is designed for food safety manager’s certification required by the State of Ohio. The certification training is a comprehensive course designed to teach all of the knowledge needed to pass the recognized food safety manager’s certification examination. This course is fully compliant with the latest FDA food code and CFP guidelines.
Contact hours: 15
Not financial aid eligible.

ZPDI-1244 Strategies for Increasing Sales
0.9 CEU's
This interactive online course is designed to allow the individuals to develop a written food service operations marketing plan. By the end of the course, the student will have completed a fully developed marketing plan ready for evaluation and implementation in any food service operation to increase overall sales and revenue.
Contact hours: 9
Not financial aid eligible.

ZPDI-1245 Allergen Awareness
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 within the operation from the initial order to the serving process. Also covered is cross-contact and how to avoid it, and what to do when an allergy reaction or attack happens. Allergen Awareness was designed to be highly flexible, allowing the student to train on their schedule.
Contact hours: 2
Not financial aid eligible.

ZPDI-1246 Allergen Plan Development
0.2 CEU's
With the Allergen Plan Development Course, the answers to the questions about “ask your manager” are developed. This course walks management through all the elements of food allergens in a food operation, allowing management to decide what will and will not be done. 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
0.2 CEUs
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 for their food products. Knowing all the products used by the operation will help students learn how to identify the food allergen ingredients in the products. When 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 will be discussed. 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. Through discussions of 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 CEUs
The online Digital Marketing Manager: Professional Certification 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 online course is a rounded introduction to all core digital marketing disciplines, and will prepare participants to take on a more specialist role within the overall marketing domain. Through dynamic video presentations, and practical learning activities including tutorials and exercises, you will acquire a hands-on learning experience that will enable you to gain a strong foundation in digital marketing, covering the main concepts, techniques and skills required in order to develop, plan and implement an effective digital marketing strategy.

Contact hours: 30
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-1820 Independent Study/Research in Psychology
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.
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 psychological 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: TMSBS and OSS045.

PSY-2020 Life Span Development
4 Credits
Study of human growth and development throughout life span. Emphasis on biological, cognitive, social and emotional development. Major issues examined from diverse perspectives.
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 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 with a grade of "B" or higher; or PSY-101H Honors General Psychology and ENG-1010 College Composition I or ENG-101H Honors College Composition I.
OAN Approved: TMSBS and OSS048

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.
OAN Approved: TMSBS and OSS016.

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.
OAN Approved: TMSBS and OSS018.

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.
OAN Approved: TMSBS and OSS046.

PSY-2070 Behavior Modification
3 Credits
Basic conditioning and learning principles emphasizing primary, social and token reinforcement. Applications to normal and abnormal behavior and uses in home, school, work, hospital and correctional settings. Implications and ethics of behavioral control examined.
Lecture: 3 hours
Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.
OAN Approved: TMSBS and OSS017.
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.  
OAN Approved: TMSBS and OSS047.

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.

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, abdomen, 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): RADT-1400 Radiographic Positioning, and departmental approval: admission to program.

RADT-1911 Clinical Radiography I
7 Credits
Supervised sessions emphasizing development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures and digital imaging using a competency based system. Clinical experience in hospital environment for 16 weeks.
Other Required Hours: Directed Practice: 576 hours. This includes 16 hours of embedded lecture delivered at clinical site.
Prerequisite(s): RADT-191A Clinical Radiography I, and departmental approval: admission to program.

RADT-191A Clinical Radiography I-A
6 Credits
Supervised sessions provide the student with practical experience to apply basic positioning and patient care skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.
Other Required Hours: Directed practice: 496 hours. This includes 16 hours of embedded lecture delivered at clinical site.
Prerequisite(s): Departmental approval: admission to program.

RADT-191B Clinical Radiography I- B
1 Credit
Supervised sessions provide the student with practical experience to apply basic positioning and patient care skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.
Other Required Hours: Directed Practice: 375 hours. This includes 15 hours of embedded lecture delivered at clinical site. Total hours required 375.
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/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-2510 Fundamentals of Mammography
4 Credits
Introduction to mammography, historical development, patient education and assessment. Anatomy, physiology and pathology of the breast, including benign and malignant conditions, stages of breast cancer and treatment options. Basic and advanced positioning techniques including special cases such as post surgical breast. Case studies and mammography film critique. Study of physics of mammography, instrumentation equipment and quality assurance emphasizing image processing quality control. Modular courses RADT-251A, RADT-251B, RADT-251C and RADT-251D together will also meet requirements for this course.
Lecture: 4 hours
Prerequisite(s): Departmental approval: admission to Mammography program.
RADT-251A Introduction to Mammography
1 Credit
Introduction to mammography, historical development, patient education and assessment.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.
RADT-251B 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-251C Positioning Techniques for Breast Imaging
1 Credit
Basic and advanced positioning techniques including special cases such as post surgical breast. Case studies and mammography film critique.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.
RADT-251D Physics of Mammography
1 Credit
Study of physics of mammography, instrumentation equipment and quality assurance emphasizing image processing quality control.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.
RADT-2520 Advanced Procedures in Mammography
4 Credits
Study of sterile technique, infection control, interventional procedures and OSHA regulations. Ultrasound breast imaging, including anatomy on ultrasound images. Ultrasound physics and ultrasound imaged pathologies. Comprehensive Registry Review. Standards of care, legal issues, and MQSA guidelines for Breast Center addressed. Accreditation process and preparation for FDA/MQSA inspection, as it relates to Breast Imaging Center.
Lecture: 1 hours
Prerequisite(s): Departmental approval: admission to Mammography program.
RADT-252A Sterile Technique and Interventional Procedures
1 Credit
Study of sterile technique, infection control, interventional procedures and OSHA regulations as applicable to Breast Imaging Department.
Lecture: 1 hours
Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A, RADT-251B, RADT-251C and RADT-251D, and concurrent enrollment in RADT-2930 Mammography Applications.
RADT-252B Ultrasound Breast Imaging and Registry Review
1 Credit
Ultrasound breast imaging, including anatomy on ultrasound images. Ultrasound physics and ultrasound imaged pathologies. Comprehensive Registry Review.
Lecture: 1 hours
Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A, RADT-251B, RADT-251C and RADT-251D, and concurrent enrollment in RADT-2930 Mammography Applications.
RADT-252C Legal Issues and MQSA Guidelines
1 Credit
Standards of care, legal issues, and MQSA guidelines for the Breast Center addressed.
Lecture: 1 hours
Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A, RADT-251B, RADT-251C and RADT-251D, and concurrent enrollment in RADT-2930 Mammography Applications.
RADT-252D Accreditation Process for Mammography
1 Credit
Accreditation process and preparation for FDA/MQSA inspection, as it relates to Breast Imaging Center.
Lecture: 1 hours
Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A, RADT-251B, RADT-251C and RADT-251D, and concurrent enrollment in RADT-2930 Mammography Applications.
RADT-2911 Clinical Radiography II
7 Credits
Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articulur system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.
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  
Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.
Other Required Hours: Directed Practica: 496 hours. This includes 16 hours of embedded lecture delivered at clinical site.
Prerequisite(s): RADT-191B Clinical Radiography I-B, and departmental approval: admission to program.

RADT-291B Clinical Radiography II-B  
1 Credit  
Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.
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  
Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.
Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture delivered at clinical site. Total hours required 576.
Prerequisite(s): RADT-191S Clinical Radiography I, and departmental approval: admission to program.

RADT-2921 Clinical Radiography III  
5 Credits  
Capstone course in Radiology. Supervised sessions provide further development and practical application of radiographic positioning during general radiographic procedures, fluoroscopy, mobile imaging and emergency procedures. Rotations include surgery, cardiovascular and interventional radiography, and digital imaging. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Includes use of specialized equipment. Clinical experience in hospital environment.
Other Required Hours: Directed practice: 375 hours. This includes 15 hours of embedded lecture delivered at clinical site. Total hours required 375.
Prerequisite(s): RADT-2911 Clinical Radiography II, and departmental approval: admission to program.

RADT-292S Clinical Radiography III  
7 Credits  
Capstone course in Radiology. Supervised sessions provide further development and practical application of radiographic positioning during general radiographic procedures, fluoroscopy, mobile imaging and emergency procedures. Rotations include surgery, cardiovascular and interventional radiography, and digital imaging. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Includes use of specialized equipment. Clinical experience in hospital environment.
Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture delivered at clinical site.
Prerequisite(s): RADT-2911 Clinical Radiography II, and departmental approval: admission to program.

RADT-2930 Mammography Applications  
3 Credits  
Supervised sessions emphasizing practical application of mammography patient preparation and positioning for diagnostic and screening examinations using appropriate exposures, radiation protection and demonstrating professional/ethical skills. Performance, evaluation and recording of quality control tests, as required by the American College of Radiology, will be documented. Clinical experience in mammography department of hospital environment for 16 weeks also includes interventional/special examinations.
Lecture: 1 hour
Other Required Hours: Directed Practice: 16 hours per week.
Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A, RADT-251B, RADT-251C and RADT-251D; and concurrent enrollment in RADT-2520 Advanced Procedures in Mammography; or concurrent enrollment in RADT-252A Sterile Technique and Interventional Procedures; and RADT-252B Ultrasound Breast Imaging and Registry Review, and RADT-252C Legal Issues and MQSA Guidelines, and RADT-252D Accreditation Process for Mammography; or departmental approval or departmental approval.
Recording Arts & Technology (RAT)

RAT-1010 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-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-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: admission to program admission to program.

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 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-1300 Introduction to Recording, and 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, 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.
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-1300 Introduction to Recording, RAT-1311 Studio Operations, and MUS-1130 MIDI Technology I, and departmental approval.

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-1814 Spec Top: Concert Promotion
3 Credits
The study of musical and technical skills used by instrumentalists and vocalists to create successful studio recordings. Class will record contemporary and classic Rock, Rhythm & Blues, Country and Blues songs.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): Departmental Approval: by audition.

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, and 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-2350 Advanced 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-2351 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.

Recreation (ZREC)

ZREC-1201 Motion Picture Training: Feature Film and Commercial Scheduling and Budgeting Workshop
0 Contact Hours
This workshop will provide course participants with a practical understanding of the movie industry budgeting & scheduling process using the industry standard software Movie Magic Budgeting & Scheduling. These essential tools enhance the flexibility, accuracy, and efficiency of creating budgets and schedules for productions of all types. 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: 44
Not financial aid eligible.

ZREC-1250 Motion Picture Training Stunts & Special Effects
0 Contact Hours
This two-day workshop is an introduction to the world of stunts, special effects, pyrotechnics and weapons handling found on movie sets. The instructor, Richard Fike, is an experienced Stunt and SFX Coordinator and certified weapons handler in the motion picture industry and has a large list of movies credits on his resume. In this workshop, Richard Fike and his stunt team will show participants how to throw and take punches, kick, fall, handle stunt guns and knives, what protective gear to wear, explain stunt equipment & terms, and most importantly how to do all of this safely. All participants will be required to sign a participation release form and be physically capable of jumping, tumbling, and falling.
Contact hours: 12
Not financial aid eligible.

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 $100,00 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.

Regional Transportation (ZRTR)

ZRTR-1000 Commercial Driver's License
16 CEU's
This course is designed to familiarize the student with the skills required to obtain a Class "A" CDL driver's license. It includes classroom time, driving-skills training and road-driving experience. Cost: $5295 plus a non-refundable $200 administrative fee.
Contact hours: 160
Not financial aid eligible.

ZRTR-1007 CDL-A Refresher Course
4 CEU's
This fast-track training program provides current CDL-A license holders the opportunity to retrain and refresh their skills to compete in a CDL job market.
Contact hours: 40
Not financial aid eligible.

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-1009 Passenger & School Bus Endorsement Training
4 CEU's
Passenger Endorsement training is a separate class for current CDL "A" or CDL "B" Ohio driver's license holders. It 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.
ZRTR-1014 CDL Driver Pre-Employment Evaluation  
0.15 CEU’s  
Contact hours: 1.5  
Not financial aid eligible.

ZRTR-1020 CDL Refresher Workshop  
0.2 CEU’s  
CDL Refresher Workshop for Truck Driving Academy graduates only.  
Contact hours: 2  
Not financial aid eligible.

ZRTR-1021 5 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-1024 CDL-B Accelerated  
12 CEU’s  
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, driving skills and road driving. Cost: $4000 plus a non-refundable $200 administrative fee.  
Contact hours: 120  
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.

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-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 holders who hold either a class A or B CDL license with an automatic restriction on their license.  
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-182H Honors Independent Study/Research in Religious 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 Judaisms 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 hours
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

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, 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 hour
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 hour
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 hour
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 hour
Prerequisite(s): RESP-2950 Respiratory Care Field Experience II

RESP-2940 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-1320 Acid-Base and Hemodynamics, and RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases, and RESP-1340 Pharmacology for Respiratory Care.
RESP-2950 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-2960 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 speaking, understanding spoken Russian, reading and writing through multiple approaches including audio, video and computer components.
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-1008 Selling Against the Competition
0.8 CEU's
Selling Against the Competition provides your salespeople with an
analytical and strategic process for uncovering customer needs,
assessing strengths and weaknesses, identifying and communicating
competitive advantages as well as anticipating and preparing to
overcome competitor inroads. During the program, your salespeople
will apply what they learn to one of their existing sales accounts, evaluating
your competitors and developing new strategies to begin outselling them
immediately.
Contact hours: 8
Not financial aid eligible.

Sociology (SOC)

SOC-1010 Introductory Sociology
3 Credits
An overview of the principles, sociological perspectives, theories,
concepts, and research methods used in the 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 sociology to current events.
Lecture: 3 hours
Prerequisite(s): None.
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): Must be taken concurrently with a 1000-level course whose
instructor agrees to mentor the student in this contract. Departmental
approval required.

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC-201H</td>
<td>Honors Social Problems</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>SOC-2020</td>
<td>Sociology of the Family</td>
<td>3</td>
<td>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 life course 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 OS5023.</td>
</tr>
<tr>
<td>SOC-2040</td>
<td>Introduction to Social Work</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>SOC-2051</td>
<td>Introduction to Social Welfare</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>SOC-2060</td>
<td>Human Behavior and the Social Environment</td>
<td>3</td>
<td>Social work perspective on human development across the life cycle. 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.</td>
</tr>
<tr>
<td>SOC-2070</td>
<td>Poverty in the United States</td>
<td>3</td>
<td>Survey of social and personal dimensions of life in inner city and other areas of poverty in United States. For person wishing to develop in-depth understanding and/or intending to work in such areas. Lecture: 3 hours Prerequisite(s): SOC-2051 Introduction to Social Welfare.</td>
</tr>
<tr>
<td>SOC-2100</td>
<td>Aging and Society</td>
<td>3</td>
<td>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, or ANTh-1010 Cultural Anthropology. OAN Approved: TMSBS.</td>
</tr>
<tr>
<td>SOC-2110</td>
<td>Death and Dying</td>
<td>3</td>
<td>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, or ANTh-1010 Cultural Anthropology. OAN Approved: TMSBS.</td>
</tr>
<tr>
<td>SOC-2150</td>
<td>Deviance</td>
<td>3</td>
<td>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.</td>
</tr>
</tbody>
</table>
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, 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 pre-teen to late adulthood, taking into consideration profound effects exerted by ethnicity, race, gender, human sexuality, socioeconomic status, age and place of residency. Analysis of the state, quality and issues related to various types of intimate relationships over time with emphasis on friendship, dating, cohabitation, marriage, dissolution and resolution. Students use C. Wright Mills concepts of sociological imagination, public issues, and personal troubles to link events in society to the state of intimate relationships in America today. 
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.

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 ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.  
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 OSS024.

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-2814 Special Topics: Crime and Media  
3 Credits  
Crime is of interest to nearly everyone. Most of us are at least somewhat fearful of becoming a victim of crime, some of us have actually been a victim of a crime, and many of us are fascinated by crime. This course addresses these issues as they are framed by the media. More specifically, it is a sociological investigation into how the media constructs our definitions of crime, our fear of crime, and our understanding of how the criminal justice system operates. 
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.
SOC-2816 Special Topics: Sociology of Hip-Hop
3 Credits
This course examines the formation, growth, and current state of hip hop through a sociological lens. We will analyze the artistic elements of hip hop (D-Jing, M-Cing, Graffiti Writing, B-boying, etc.) and their social contexts. Through readings, films, music, videos, and discussions we will take a critical approach to the genre and contextualize our analyses within the global, historical, and socio-political backgrounds within which hip hop originated and continues to thrive. This course will serve as a space for you to analyze the societal structures and forces that influence hip hop, as well as how hip hop influences the world.
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.

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.

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 Cultures 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: OFL020, and OFL023 (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 members; 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-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
The first in a series of two intermediate Spanish courses 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 English, or departmental approval.

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-2010 Intermediate Spanish Language and Cultures I, or three years of high school Spanish, or departmental approval

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 Spanish civilization and literature from early beginning to present day. Special emphasis on interrelationship between history and geography, and literature of Spain and its culture.
Lecture: 3 hours
Prerequisite(s): SPAN-2020 Intermediate Spanish II Language and Cultures II, or concurrent enrollment with departmental approval: three years of high school Spanish.

SPAN-2430 Civilization, Culture, and Literature of Latin America
3 Credits
Instruction in Spanish. Civilization and literature of Latin America from pre-Columbian period to present.
Lecture: 3 hours
Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval: three years of high school Spanish.

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 1000-level course whose 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).

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.

SPCH-0910 Basic Communication Skills
3 Credits
Demonstrate ways communication can be processed, distorted, or shared. Special emphasis on personal communication growth, processing information, message analysis and verbal expression as basic communication skills necessary for college achievement.
Lecture: 3 hours
Prerequisite(s): None.

SPCH-1000 Fundamentals of Interpersonal Communication
3 Credits
Involvement and experience in purpose and process of verbal and non-verbal communication to strengthen daily communication skills. Special emphasis to perception, self concept, expressing feelings, empathy and listening as learned interpersonal skills. Combines theoretical concepts with experiential learning through lecture, discussion, and simulations.
Lecture: 3 hours
Prerequisite(s): None.
OAN Approved: OCM002.

SPCH-1010 Fundamentals of Speech Communication
3 Credits
Effective speech communication. Application of principles of speech content and delivery to variety of practical speaking and listening situations.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II or appropriate English placement score.
OAN Approved: TMCOM and OCM004.

SPCH-1010H Honors Fundamentals of 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 English placement score.
OAN Approved: TMCOM and OCM004.

SPCH-1050 Voice and Diction
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.

SPCH-1210 Group Discussion
3 Credits
Basic elements of communications and small group theory as employed in typical small group situation. Emphasis on individuals 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.

SPCH-179H Honors Contract
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.

SPCH-1820 Independent Study/Research in Speech Communication
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.

SPCH-1820H Honors Independent Study/Research in Speech Communication
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.
SPCH-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 the process of human communication.
Lecture: 3 hours
Prerequisite(s): ENG-0990 Language Fundamentals II, or appropriate score on English Placement Test; and SPCH-1000 Fundamentals of Interpersonal Communication or SPCH-1010 Fundamentals of Speech Communication or SPCH-101H Honors Fundamentals of Speech Communication. OAN Approved: OCM001.

SPCH-2020 Interviewing
3 Credits
Theory and practice of interviewing, including interview structures, questioning techniques and formats, and a range of interview types. Specific practice in selection and workplace interviewing. Modular courses SPCH-202A, SPCH-202B and SPCH-202C together will also meet requirements for this course.
Lecture: 3 hours
Prerequisite(s): None.

SPCH-202A Interviewing Overview
1 Credit
Theory and practice of interviewing, including interview structures, questioning techniques and formats, interviewing etiquette, listening skills, and nonverbal communication issues in interviewing. Required before taking other interviewing modules on specific interview types. Verify transferability of this modular course with your receiving institution.
Lecture: 1 hours
Prerequisite(s): None.

SPCH-202B Selection Interviewing
1 Credit
Theory and practice of selection interviewing, from point of view of both applicant and employer. Verify transferability of this modular course with your receiving institution.
Lecture: 1 hours
Prerequisite(s): SPCH-202A Interviewing Overview.

SPCH-202C Workplace Interviewing
1 Credit
Theory and practice of interviewing in workplace, specifically including performance appraisal, exit, and disciplinary interviews, as well as workplace coaching. Verify transferability of this modular course with your receiving institution.
Lecture: 1 hours
Prerequisite(s): SPCH-202A Interviewing Overview.

SPCH-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): SPCH-1010 Fundamentals of Speech Communication, and ENG-1010 College Composition I.

SPCH-2060 Interviewing for Information
1 Credit
Theory and practice of interviewing for information, specifically journalistic and information gathering interviewing, health related interviewing, and survey interviewing. Verify transferability of this course with your receiving institution.
Lecture: 1 hours
Prerequisite(s): SPCH-2020 Interviewing, or SPCH-202A Interviewing Overview.

SPCH-2070 Relational Interviewing
1 Credit
Theory and practice of interviewing conducted to affect relationships, specifically problem-solving interviews, persuasive interviews, and counseling interviews. Verify transferability of this course with your receiving institution.
Lecture: 1 hours
Prerequisite(s): SPCH-2020 Interviewing or SPCH-202A Interviewing Overview.

SPCH-2120 Forensics Activity
1 Credit
Participation in variety of forensic activities by assignment including intercollegiate debate, choral reading, reader theatre, and individual events. May be repeated for a maximum of three credit hours.
Lecture: 1 hours
Prerequisite(s): SPCH-2110 Argumentation and Debate, or SPCH-2050 Oral Interpretation, or departmental approval: comparable knowledge or skills.

SPCH-2130 Business and Professional Communication
3 Credits
Familiarizes students with theories and practices of oral communication which occur in organizational/ business environment in individual or group situations.
Lecture: 3 hours
Prerequisite(s): SPCH-1000 Fundamentals of Interpersonal Communication, or SPCH-1010 Fundamentals of Speech Communication, or SPCH-1210 Group Discussion, or departmental approval: comparable knowledge or skills.

SPCH-2150 Introduction to Speech Pathology
3 Credits
Survey of profession of speech pathology and introduction to various organic and functional speech disorders including deviant articulation, delayed speech development, and stuttering. Techniques for diagnosis and treatment explored.
Lecture: 3 hours
Prerequisite(s): SPCH-1050 Voice and Articulation, and departmental approval: sophomore standing or consent of instructor.
SPCH-2160 Intercultural Communication  
3 Credits  
Theory and application of communication concepts operating between people of different cultures.  
Lecture: 3 hours  
Prerequisite(s): Department approval.

SPCH-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): SPCH-1050 Voice and Articulation, or departmental approval.

SPCH-2820 Independent Advanced Study/Research in Speech Communication  
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.

SPCH-282H Honors Independent Advanced Study/Research in Speech Communication  
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 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-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

Analysis of functional human movement based on the anatomical, neuromyofascial, biomechanical and Anatomy Trains principles. Emphasis is given to the application of these principles to the understanding of 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-2210 Exercise Testing, Measurement, and Evaluation

3 Credits

Study of the techniques for conducting health screenings and fitness assessments and interpreting the results. Assessments include risk stratification, cardiorespiratory fitness, muscular strength and endurance, range of motion, posture, balance, movement patterns and body composition. Emphasis on safety guidelines and precautions. Measurement and evaluation concepts will be introduced.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2220 Exercise Prescription and Program Design

3 Credits

Design, implement and evaluate appropriate exercise prescriptions and programs for a variety of healthy and “at risk” populations. Behavior change, motivational concepts, and other specific programming issues will also be addressed.

Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): SES-2210 Exercise Testing, Measurement, and Evaluation, 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

Provide 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

An overview 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-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 health-care with 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 assistant circulating skills and scrub skills of surgical technologist. Patient transportation and transfer skills, operation of surgical bed, patient positioning, operation of the electrosurgical unit and suction system, sterile techniques utilized when opening and dispensing sterile supplies, hair removal, skin preparation, urinary catheterization, surgical scrub, gowning and gloving. Employability and problem solving skills 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
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
Presentation and discussion of development and history of a modern Sterile Processing Department. Roles and responsibilities of Sterile Processing Technicians. Review of the Anatomy and Physiology of the human body in relation to processing of medical devices and patient care equipment. Discussion of basic Microbiology and identification of common microbes and diseases found in today's health care environment. Presentation and discussion of infection control techniques in relation to disease transmission. Demonstration of appropriate decontamination techniques and protocol 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. Legal and ethical aspects of Sterile Processing practice introduced.
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
[formerly MA-1710] Presentation and discussion of techniques and protocol of processing patient care equipment. Review and demonstration of the various packaging methods currently in use in today's healthcare environment for sterile processing of critical medical devices. Discussion and identification of surgical instruments including techniques for recognizing damage and/or poor working condition to allow technicians to remove for preventive maintenance. Discussion and identification of the various methods of sterilization currently used in healthcare. Demonstration of appropriate monitoring techniques to achieve required degree of sterile assurance level. Identification of sterile storage procedures and concepts. Review and demonstration of appropriate distribution methods and affect each has on the cost of med/surgical supplies.
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. 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 hours
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
Other Required Hours: Directed Practice: 240 hours per semester.
Prerequisite(s): SURT-1700 Sterile Processing Tech I, and concurrent enrollment in SURT-1710 Sterile Processing Tech II.

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 or surgery center. 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.
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-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
Surgical specialty operative procedures. Includes ophthalmic, genitourinary, orthopedic, neurosurgery, pediatric, head and neck procedures, ear, nose, throat, oral, perivascular, thoracic, cardiac surgery, and transplant surgery.
Lecture: 5 hours
Prerequisite(s): SURT-1330 General Surgery, and SURT-1910 Clinical Experience I.
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): None.

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 back stage assistance, 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
Studio situation to learn basic studio and on-location techniques, video performance training, audio broadcast techniques and 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 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-2210 History of Theatre and Drama I, or departmental approval.
OAN Approved: TMAH.

THEA-2440 Sound for Theatre
3 Credits
[Introductory] 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 "Harolds". 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: offstate 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-2560 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-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): 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-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
Examination of background of major urban problems, with overview of U.S. urban history. Emphasis on description and analysis of roots of contemporary urban America.
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.

UST-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: 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): VT-1401 Veterinary Science I, BIO-1420 Anatomy and Physiology of Domestic Animals I or concurrent enrollment.

VT-1410 Veterinary Science II
3 Credits
Fundamentals of physical and behavioral characteristics of horses, cattle, sheep, goats, pigs, poultry and camels. 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: 3 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: 6 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 II.

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 CPCR. 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.  
Other Required Hours: Practicum: 3.5 hrs/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  
Develop skills needed to communicate visually in any media. Learn how effective layouts, illustrations, photographs, videos and web sites convey ideas via the principles of visual communication and design.  
Lecture: 2 hours. Laboratory: 2 hours  
Prerequisite(s): None.

VC&D-1015 Digital Studio Basics  
3 Credits  
Hands-on overview of industry standard design software for print and digital media. Best practices in studio work-flow and file management are emphasized.  
Lecture: 2 hours. Laboratory: 2 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-1200 Typography and Layout
3 Credits
(formerly CART-1300) 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: 2 hours
Prerequisite(s): VC&D 1000 Visual Communication Foundation, or concurrent enrollment; and VC&D-1015 Digital Studio Basics or concurrent enrollment.

VC&D-1430 2D Design
3 Credits
Technical and aesthetic fundamentals in the creation of two-dimensional Designs for print, interactive, broadcast and other media utilizing industry standard 2D graphics and design applications.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1015 Digital Studio Basics or concurrent enrollment; and VC&D-1000 Visual Communication Foundation, or ART-1080 Visual Design I.

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 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: 2 hours
Prerequisite(s): VC&D-1430 2D Design or concurrent enrollment.

VC&D-2401 Designing for Production
3 Credits
Techniques and methods in assembling and finalizing production art and design for printing and digital media. Terminology, paper, ink, printing, production art and design. Tools, materials, and practical considerations in preparing design for production art.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VCGD-2131 Publication Design.

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 of student’s choice. 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-1430 2D Design or departmental approval.

VC&D-2701 Media Design
3 Credits
Designing for electronic media, from concept to completion. Explores the interaction of type, image, motion, sound, sequence and how they communicate, as well as technical challenges of designing for various digital media.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-1430 2D Design; or VCIM-1570 Web Publishing I: HTML; or concurrent enrollment; or IT-1150 Introduction to Web Programming or concurrent enrollment; 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-282S 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 in Visual Communications and Design. Covers all aspects of creation and presentation of professional portfolio. Emphasizes individual strengths and areas of specialization. Students edit and modify work where required. Add new pieces to final portfolio that meets industry standards. Analyze appropriate presentation materials, business forms and protocols, develop promotional pieces and presentation style and technique. 
Lecture: 1 hour. Laboratory: 4 hours Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment; or VC&D-2701 Media Design or concurrent enrollment; or VCDV-2280 Advanced Digital Video and Digital Filmmaking: Exploring Genere and Technique, or concurrent enrollment; or VCIM-2200 Game Design III: 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 guiding design direction to attain conceptual and technical skills to bring final designs to successful completion. 
Lecture: 1 hour. Laboratory: 4 hours Prerequisite(s): VCAD-2231 Publication Design or VC&D-2301 Graphic Design and Illustration.

VCAD-2720 Advertising Studio II
2 Credits
Advanced projects for advertising design majors simulating real-world professional and practical experience as set in ad agencies and corporate marketing studios. Development of ad campaigns, double-spread ads, multi-page marketing layouts and publications. Practical experience in teamwork collaboration, advanced delivery techniques for print and/or other media, production processes, budget development and meeting clients needs within set timelines. 
Lecture: 1 hour. Laboratory: 2 hours Prerequisite(s): VD-2301 Graphic Design and Illustration or concurrent enrollment, and VCAD-2620 Advertising Studio I or concurrent enrollment.

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 from thumbnail to storyboard 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: 2 hours Prerequisite(s): VCD-1200 Typography and Layout and VCGD-1430 2D Design or concurrent enrollment.

VCGD-2131 Magazine Design
3 Credits
Magazine design including masthead, cover, contents, editorial and feature page formats. Emphasis on using sophisticated design, typography, and images to communicate. Exploration of practical and production considerations involved in magazine design as a product itself. 
Lecture: 2 hours. Laboratory: 2 hours Prerequisite(s): VCGD-1500 Advertising and Design, or departmental approval.

VCGD-2231 Publication Design
3 Credits
Publication design including masthead, column, editorial and feature story page formats. Emphasis on using typography and images on multiple page formats. Exploration of practical and production considerations involved in publication design. 
Lecture: 2 hours. Laboratory: 2 hours Prerequisite(s): VCGD-1500 Advertising and Design, or departmental approval.
VC GD-2331 Brand Identity Design
3 Credits
Comprehensive corporate graphics emphasizing design process in creating corporate and brand identity. Visual and non-visual aspects of corporate graphics and their application.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment.

VC GD-2431 Package Design
3 Credits
Comprehensive package design course from initial concept to presentation of package mock-ups. Conceptual thinking and problem solving using typography, color and images on folded, soft packaging and rigid packaging. Methods, materials, practical and production considerations involved in packaging design as well as environmental issues in relation to green or sustainable package design.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment; or departmental approval.

VC GD-2631 Graphic Design Studio
3 Credits
VC GD-2631 Graphic Design Studio 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 contemporary design media.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VC GD-2231 Publication Design or concurrent enrollment.

VC GD-2730 Graphic Design Studio II
2 Credits
Advanced projects for graphic design majors simulating real-world professional and practical experience as set in graphic design and production design studios. Emphasis on development and design of spreads, multi-page layouts and publications. Practical experience in teamwork collaboration, advanced featuring delivery techniques for print and/or other media, production processes, budget development and meeting clients needs within set timelines.
Lecture: 1 hour. Laboratory: 2 hours
Prerequisite(s): VC GD-2630 Graphic Design Studio I or concurrent enrollment.

VC GD-2820 Independent Advanced Study/Research in Graphic 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 (Illustration) (VCIL)

VCIL-1141 Rendering Techniques
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: 3 hours
Prerequisite(s): VC&D-1015 Digital Studio Basics; 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 NURBS/HyperNURBS based 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-1015 Digital Studio Basics 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-2141 Illustration Techniques
3 Credits
Use of industry standard tools to explore formal and aesthetic solutions for two-dimensional still images. Emphasis on experimentation with aesthetic and technical elements of digital illustration.
Lecture: 2 hours. Laboratory: 2 hours
Prerequisite(s): VCIL-1141 Rendering Techniques 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: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIL-1141 Rendering Techniques or concurrent enrollment.
VCIL-2341 Illustration for Story
3 Credits
Technical and aesthetic fundamentals of sequential illustration. 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: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIL-1141 Rendering Techniques and VCIL-1640 3D Design.

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 animatins. Applied projects for use in various visualization disciplines.
Lecture: 2 hours. Laboratory: 3 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: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIL-2040 3D Simulation 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 illustration for various audiences including, design, advertising, visualization, publishing and entertainment industries.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2341 Illustration for Story, Sequence & Narrative or concurrent enrollment.

VCIL-2741 Illustration Studio II
3 Credits
Advanced projects for illustration majors simulating real-world professional and practical projects.
Lecture: 1 hour. Laboratory: 4 hours
Prerequisite(s): VCIL-2641 Illustration Studio 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 the fundamentals of digital photography, learning how to maximize the capabilities of your digital camera shooting in available light. Conceptual issues and stylistic characteristics of several photographic genres will be discussed. Visual assignments will be used to explore a variety of photographic traditions and increase your understanding of the potential of digital technology. You will use your critical thinking skills to greater understand the potential of the photographic narrative and concepts. Students must have their own DSLR camera with manual controls including Aperture, Shutter Speed, ISO settings and RAW file format capability. College specified digital printing paper and portfolio box and a Mac/PC external hard-drive are required. Paper, box, binder and a limited selection of cameras are available at the 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-1015 Digital Studio Basics or MARS-1180 Introduction to Media Arts and Filmmaking.

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 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.
VCPPH-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.

VCPPH-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): VCPPH-1450 Digital Imaging I, or concurrent enrollment, and VCPPH-2260 Photography II, or concurrent enrollment, or departmental approval: submission of portfolio of photographs.

VCPPH-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): VCPPH-1450 Digital Imaging I, and VCPPH-2260 Photography II.

VCPPH-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): VCPPH-1261 Photography I.

VCPPH-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): VCPPH-1450 Digital Imaging I, or departmental approval: prior digital imaging experience.

VCPPH-2530 Professional Practices in Photography
3 Credits
Exploration of business and marketing practices necessary for successful career in photography and digital imaging. Emphasis placed on financial, legal, organizational, promotional, interpersonal and ethical issues practiced in this diverse industry.
Lecture: 3 hours
Prerequisite(s): VCPPH-2660 Photography III, or concurrent enrollment and VCPPH-2450 Digital Imaging II.

VCPPH-2541 Individual Projects - Photography
3 Credits
Individual photography based projects created in areas of student’s design based on submission and approval of a written proposal. Progress and grading determined on individual basis according to criteria mutually agreed upon between student and instructor. Includes examples of projects created by photographers from many photographic genres including fine art, documentary, advertising and editorial as well as work done by the instructor. Other media such as audio, video, and integrated web based options such as web sites and blogs will be shown and discussed. May be repeated for up to six credits.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCPPH-1450 Digital Imaging I, and VCPPH-2260 Photography II, or departmental approval with submission of a photographic print or high resolution digital portfolio.

VCPPH-2550 Commercial Studio Techniques II
3 Credits
Advanced lighting and camera techniques for commercial studio and location photography. 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): VCPPH-2050 Commercial Studio Techniques I, and VCPPH-1450 Digital Imaging I.

VCPPH-2551 Commercial Studio Techniques III
3 Credits
Introduction to 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): VCPPH-1450 Digital Imaging I, and VCPPH-2260 Photography II; or departmental approval: submission of portfolio of photographs.

VCPPH-2560 Photography III
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): VCPPH-2660 Photography III, or concurrent enrollment and VCPPH-1450 Digital Imaging I.

VCPPH-2650 Commercial Studio Techniques I
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): VCPPH-1450 Digital Imaging I, and VCPPH-2260 Photography II, or departmental approval: submission of portfolio of photographs. OAN Approved: OCM011.
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): VC&D-1000 Visual Communication Foundation, or concurrent enrollment; and VC&D-1015 Digital Studio Basics, or concurrent enrollment.

VCIM-1400 Game Design II: Game Engines
3 Credits
Applied technical and aesthetic fundamentals of 2D and 3D game design using industry standard engines. Emphasis on design and interaction of 2D and 3D assets to be used in instructional, promotional and entertainment games.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1200 Game Design I: Introduction to Game Design.

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 (X)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): VC&D-1000 Visual Communication Foundation, or concurrent enrollment; and VC&D-1015 Digital Studio Basics, or concurrent enrollment.

VCIM-1770 Web Publishing II: Site Theory & Construction
3 Credits
Expansion and continuation of topics introduced in Web Publishing I. Planning, designing, constructing and publishing a web site using industry standard tools.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1570 Web Publishing I: HTML, or concurrent enrollment; or ITWM-1010 Creating Web Pages with HTML and JavaScript.

VCIM-1970 Midpoint Portfolio Review
1 Credit
Sophomore level portfolio review. Individual strengths and areas of specialization are reviewed and evaluated. Students are encouraged to edit and modify existing work to prepare for advanced courses, projects and final portfolio.
Lecture: 1 hours
Prerequisite(s): Departmental approval: completion of 18 core credits at 1000 level, or completion of 9 core credits and concurrent enrollment of an additional 9 credits.

VCIM-2071 Service-Learning Web and Interactive Studio
3 Credits
A service-learning course. Web and Interactive Media students will work on "real-world", client based community projects for non-profit organizations. Design, technical, and professional practices such as contracts, client relations and team work will be put into action.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-2280 Web Publishing III: Media Rich Websites or concurrent enrollment; or VCIM-2380 Interactive Media II or concurrent enrollment; or departmental approval.

VCIM-2200 Game Design III: Game Design Studio
3 Credits
Create a variety of game projects for an intended audience, platform or device. Course emphasizes game design pipeline of planning, design, testing, refining and publishing.
Lecture: 1 hour. Laboratory: 5 hours
Prerequisite(s): VCIM-1400 Game Design II: Game Engines.
VCIM-2270 Animation for the Web and Media
3 Credits
[Crosslisted with ART-2151. Credit can only be earned once for either course.] Technical and aesthetic fundamentals of 2D animation as they pertain to the Internet. Use of current software to develop interactive, animated graphics and interfaces. Various techniques including tweening, frame by frame, onion skinning, shape and color morphing as well as non-linear structure, interactivity, communication, scripting and troubleshooting. Acquisition or creation and integration of music, sound and video. 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-1081 2D Design and Color or VC&D-1015 Digital Studio Basics, or departmental approval: comparable skills.

VCIM-2280 Web Publishing III: Media Rich Websites
3 Credits
Developing media rich websites with current industry standard tools and techniques. Emphasis on building SEO (Search Engine Optimization) and device-friendly websites that integrate social media, videos, photos, and music.
Lecture: 2 hours. Laboratory: 3 hours
Prerequisite(s): VCIM-1770 Web Publishing II: Site Theory & Construction, or IT-1150 Introduction to Web Programming.

VCIM-2290 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): IT-1150 Introduction to Web Programming or VCIM-1570 Web Publishing I: HTML.

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-2270 Animation for the Web and Media or ART-2151 Animation for the Web and Media or VCIL-1560 3D Design.

VCIM-2380 Interactive Media II: App Design
3 Credits
Beyond the Web. Explores current and emerging interactive technologies such as Apps, touch screens and games.
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-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 women's studies, which transcends traditional disciplinary boundaries. Analysis of gender 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 women's 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.

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

Analysis 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. 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-2050 Personal & Reflective Writing
3 Credits

This course is cross-listed as ENG-2050. 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 Women's 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 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.

<table>
<thead>
<tr>
<th>Equivalency Courses</th>
<th>Deleted Courses That Are Equivalent for Grade Repeat</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-1011</td>
<td>ACCT-1010 (3 Cr.)</td>
</tr>
<tr>
<td>ACCT-1041</td>
<td>ACCT-1040 (3 Cr.)</td>
</tr>
<tr>
<td>ACCT-2995</td>
<td>ACCT-1321 (4 Cr.) &amp; ACCT-1320 (4 Cr.)</td>
</tr>
<tr>
<td>ACCT-2041</td>
<td>ACCT-2040 (3 Cr.)</td>
</tr>
<tr>
<td>ACCT-2500</td>
<td>ACCT-250A (2 Cr.) &amp; ACCT-250B (2 Cr.)</td>
</tr>
<tr>
<td>ACCT-1520</td>
<td>ACCT-2520 (2 Cr.)</td>
</tr>
<tr>
<td>ANTH-2110</td>
<td>ANTH-1030 (3 Cr.)</td>
</tr>
<tr>
<td>ART-2020</td>
<td>ART-1020 (3 Cr.)</td>
</tr>
<tr>
<td>ART-2030</td>
<td>ART-1030 (3 Cr.)</td>
</tr>
<tr>
<td>ART-1081</td>
<td>ART-1080 (3 Cr.)</td>
</tr>
<tr>
<td>ART-1301</td>
<td>ART-1300 (3 Cr.)</td>
</tr>
<tr>
<td>ART-1311</td>
<td>ART-1310 (3 Cr.)</td>
</tr>
<tr>
<td>ART-2151</td>
<td>ART-2150 (3 Cr.)</td>
</tr>
<tr>
<td>ART-2180</td>
<td>ART-1110 (3 Cr.)</td>
</tr>
<tr>
<td>ART-2190</td>
<td>ART-1710 (3 Cr.)</td>
</tr>
<tr>
<td>ASL-1001</td>
<td>ASL-1000 (1 Cr.)</td>
</tr>
<tr>
<td>ASL-2412</td>
<td>ASL-2410 (3 Cr.)</td>
</tr>
<tr>
<td>ATCT-1301</td>
<td>ATCT-1300 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-1320</td>
<td>ATCT-1320 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-1331</td>
<td>ATCT-1330 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-1351</td>
<td>ATCT-1350 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-1381</td>
<td>ATCT-1380 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-1491</td>
<td>ATCT-1490 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-2341</td>
<td>ATCT-2340 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-2361</td>
<td>ATCT-2360 (2 Cr.)</td>
</tr>
<tr>
<td>ATCT-2511</td>
<td>ATCT-2510 (2 Cr.)</td>
</tr>
<tr>
<td>AUTO-1101</td>
<td>AUTO-1100 (2 Cr.)</td>
</tr>
<tr>
<td>AUTO-1502</td>
<td>AUTO-1501 (2 Cr.)</td>
</tr>
<tr>
<td>AUTO-1510</td>
<td>AUTO-1500 (2 Cr.)</td>
</tr>
<tr>
<td>AUTO-2310</td>
<td>AUTO-1350 (2 Cr.)</td>
</tr>
<tr>
<td>AUTO-2701</td>
<td>AUTO-2700 (2 Cr.)</td>
</tr>
<tr>
<td>BADM-1000</td>
<td>OADM-1000 (2 Cr.)</td>
</tr>
<tr>
<td>BADM-1121</td>
<td>BADM-1120 (4 Cr.)</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>OADM-2010 (3 Cr.)</td>
</tr>
<tr>
<td>BADM-2120</td>
<td>BADM-2300 (3 Cr.)</td>
</tr>
<tr>
<td>BADM-2501</td>
<td>BADM-2500 (3 Cr.)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>BADM-2601</td>
<td>BADM-2600 (3 Cr.)</td>
</tr>
<tr>
<td>BADM-2760</td>
<td>BADM-2510 (1 Cr.) &amp; BADM-2520 (2 Cr.) &amp; BADM-2530 (2 Cr.) &amp; BADM-2620 (2 Cr.)</td>
</tr>
<tr>
<td>BADM-2780</td>
<td>BADM-2510 (1 Cr.) &amp; BADM-2710 (2 Cr.) &amp; BADM-2720 (2 Cr.) &amp; BADM-2730 (1 Cr.)</td>
</tr>
<tr>
<td>BIO-2331 &amp; BIO-2341</td>
<td>BIO-2330 (4 Cr.) &amp; BIO-2340 (4 Cr.)</td>
</tr>
<tr>
<td>BIO-233A &amp; BIO-234A</td>
<td>BIO-2330 (4 Cr.)</td>
</tr>
<tr>
<td>BIO-233B &amp; BIO-234B</td>
<td>BIO-2340 (4 Cr.)</td>
</tr>
<tr>
<td>BT-1000</td>
<td>IT-1000 (2 Cr.) &amp; OADM-1010 (2 Cr.)</td>
</tr>
<tr>
<td>BT-1201</td>
<td>AOS-1201 (4 Cr.) &amp; ITAP-1200 (3 Cr.) &amp; OADM-2300 (3 Cr.) &amp; AOS-1230 (3 Cr.) &amp; ITAP-1230 (2 Cr.) &amp; OADM-1310 (3 Cr.)</td>
</tr>
<tr>
<td>BT-1241</td>
<td>AOS-1241 (3 Cr.) &amp; ITAP-1240 (3 Cr.) &amp; OADM-1040 (3 Cr.) &amp; AOS-1240 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2040</td>
<td>IT-1030 (2 Cr.) &amp; CS-1030 (2 Cr.)</td>
</tr>
<tr>
<td>BT-2200</td>
<td>AOS-2200 (3 Cr.) &amp; ITAP-2200 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2210</td>
<td>AOS-2210 (3 Cr.) &amp; ITAP-2210 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2220</td>
<td>AOS-2220 (3 Cr.) &amp; ITAP-2220 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2270</td>
<td>AOS-2270 (3 Cr.) &amp; ITAP-2270 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2300</td>
<td>IT-2300 (3 Cr.) &amp; CS-1410 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2370</td>
<td>AOS-2370 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2410</td>
<td>AOS-2410 (3 Cr.) &amp; BADM-2410 (3 Cr.)</td>
</tr>
<tr>
<td>BT-2830</td>
<td>AOS-2830 (1-3 Cr.)</td>
</tr>
<tr>
<td>BT-2990</td>
<td>AOS-2990 (3 Cr.) &amp; BADM-2990 (3 Cr.) &amp; OADM-2990 (3 Cr.)</td>
</tr>
<tr>
<td>C&amp;CR-1330 &amp; C&amp;CR-1340</td>
<td>C&amp;CR-1310 (2 Cr.) &amp; C&amp;CR-1320 (4 Cr.)</td>
</tr>
<tr>
<td>C&amp;CR-1401</td>
<td>C&amp;CR-1400 (2 Cr.)</td>
</tr>
<tr>
<td>C&amp;CR-1451</td>
<td>C&amp;CR-1450 (2 Cr.)</td>
</tr>
<tr>
<td>C&amp;CR-1521</td>
<td>C&amp;CR-1520 (1 Cr.)</td>
</tr>
<tr>
<td>C&amp;CR-1601</td>
<td>C&amp;CR-1370 (3 Cr.) &amp; C&amp;CR-1371 (2 Cr.) &amp; C&amp;CR-1310 (2 Cr.) &amp; C&amp;CR-1600 (5 Cr.)</td>
</tr>
<tr>
<td>Course Code 1</td>
<td>Equivalent Course Code 1</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>CNST-2330</td>
<td>CNST-2530 (3 Cr.)</td>
</tr>
<tr>
<td></td>
<td>ARCH-2420 (3 Cr.)</td>
</tr>
<tr>
<td>CNST-2410</td>
<td>ARCH-2410 (3 Cr.)</td>
</tr>
<tr>
<td>CNST-2631</td>
<td>CNST-2630 (3 Cr.)</td>
</tr>
<tr>
<td></td>
<td>ARCH-2220 (3 Cr.)</td>
</tr>
<tr>
<td>CNST-2990</td>
<td>CNST-2320 (3 Cr.)</td>
</tr>
<tr>
<td></td>
<td>ARCH-2310 (3 Cr.)</td>
</tr>
<tr>
<td>DANC-1501</td>
<td>DANC-1500 (3 Cr)</td>
</tr>
<tr>
<td>DANC-1401</td>
<td>DANC-1400 (3 Cr)</td>
</tr>
<tr>
<td>DANC-2400</td>
<td>DANC-1410 (3 Cr)</td>
</tr>
<tr>
<td>DENT-1210</td>
<td>BIO-1210 (4 Cr.)</td>
</tr>
<tr>
<td>DENT-1311</td>
<td>DENT-1310 (2 Cr.)</td>
</tr>
<tr>
<td>DENT-1341</td>
<td>DENT-1340 (1 Cr.)</td>
</tr>
<tr>
<td>DENT-1431</td>
<td>DENT-1430 (3 Cr.)</td>
</tr>
<tr>
<td>DENT-2321</td>
<td>DENT-2320 (2 Cr.)</td>
</tr>
<tr>
<td>DENT-2332</td>
<td>DENT-2331 (3 Cr.)</td>
</tr>
<tr>
<td>DENT-2340 &amp; DENT-2440</td>
<td>DENT-2410 (2 Cr.)</td>
</tr>
<tr>
<td>DENT-2990</td>
<td>DENT-2430 (1 Cr.)</td>
</tr>
<tr>
<td>DIET-1200 &amp; DIET-1320</td>
<td>DIET-1300 (4 Cr.)</td>
</tr>
<tr>
<td>DIET-1331</td>
<td>DIET-1330 (6 Cr.)</td>
</tr>
<tr>
<td>DIET-2301</td>
<td>DIET-2300 (2 Cr.)</td>
</tr>
<tr>
<td>DIET-2311</td>
<td>DIET-2310 (2 Cr.)</td>
</tr>
<tr>
<td>DIET-2410 &amp; DIET-2420 &amp; DIET-2430</td>
<td>DIET-2400 (3 Cr.)</td>
</tr>
<tr>
<td>DIET-2501</td>
<td>DIET-2500 (3 Cr.)</td>
</tr>
<tr>
<td>DIET-2862 &amp; DIET-2863</td>
<td>DIET-2861 (4 Cr.)</td>
</tr>
<tr>
<td>DIS-1300</td>
<td>ITP-1300 (3 Cr.)</td>
</tr>
<tr>
<td>DIS-1310</td>
<td>ITP-1310 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-1402</td>
<td>DIS-1401 (3 Cr.)</td>
</tr>
<tr>
<td></td>
<td>ITP-1400 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-1940</td>
<td>ITP-1850 (2 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DIS-1850 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-1971</td>
<td>ITP-1970 (1 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DIS-1970 (1 Cr.)</td>
</tr>
<tr>
<td>DIS-2300</td>
<td>ITP-2300 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-2310</td>
<td>ITP-2310 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-2410</td>
<td>ITP-2410 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-2940</td>
<td>ITP-2850 (2 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DIS-2850 (2 Cr.)</td>
</tr>
<tr>
<td>DIS-2971</td>
<td>ITP-2970 (1 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DIS-2970 (1 Cr.)</td>
</tr>
<tr>
<td>DMS-1071</td>
<td>PHYS-1070 (2 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DMS-1070 (2 Cr.)</td>
</tr>
<tr>
<td>DMS-1303</td>
<td>DMS-1302 (1 Cr.)</td>
</tr>
<tr>
<td>DMS-1311</td>
<td>DMS-1310 (2 Cr.)</td>
</tr>
<tr>
<td>DMS-1351</td>
<td>DMS-1340 (1 Cr.) &amp; DMS-1350 (1 Cr.)</td>
</tr>
<tr>
<td>DMS-1381</td>
<td>DMS-1380 (4 Cr.)</td>
</tr>
<tr>
<td>DMS-1401</td>
<td>DMS-1400 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-1602</td>
<td>DMS-1360 (2 Cr.) &amp; DMS-1601 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-1702</td>
<td>DMS-1360 (2 Cr.) &amp; DMS-1701 (4 Cr.)</td>
</tr>
<tr>
<td>DMS-1940</td>
<td>DMS-1911 (2 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DMS-1910 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-1950</td>
<td>DMS-1921 (4 Cr.)</td>
</tr>
<tr>
<td></td>
<td>DMS-1920 (4 Cr.)</td>
</tr>
<tr>
<td>DMS-2301</td>
<td>DMS-2300 (1 Cr.) &amp; DMS-2310 (1 Cr.)</td>
</tr>
<tr>
<td>DMS-2330</td>
<td>DMS-1330 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-2401</td>
<td>DMS-2400 (4 Cr.)</td>
</tr>
<tr>
<td>DMS-2602</td>
<td>DMS-1370 (2 Cr.) &amp; DMS-2601 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-2702</td>
<td>DMS-1370 (2 Cr.) &amp; DMS-2701 (3 Cr.)</td>
</tr>
<tr>
<td>DMS-2940</td>
<td>DMS-1922 (6 Cr.)</td>
</tr>
<tr>
<td>DMS-2981 &amp; DMS-2985</td>
<td>DMS-2980 (2 Cr.)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>EMT-1302</td>
<td>EMT-1300 &amp; EMT-1740</td>
</tr>
<tr>
<td>EMT-1301</td>
<td>EMT-1300</td>
</tr>
<tr>
<td>EMT-1401</td>
<td>EMT-1400</td>
</tr>
<tr>
<td>EMT-2330</td>
<td>EMT-2310</td>
</tr>
<tr>
<td>EMT-2350</td>
<td>EMT-2320</td>
</tr>
<tr>
<td>EHST-1301</td>
<td>EHST-1300</td>
</tr>
<tr>
<td>EHST-2220</td>
<td>EHST-1320 (2 Cr.)</td>
</tr>
<tr>
<td></td>
<td>EHST-132A (1 Cr.) &amp; EHST-132B (1 Cr.)</td>
</tr>
<tr>
<td>EHST-2341</td>
<td>EHST-2340</td>
</tr>
<tr>
<td>EHST-2351</td>
<td>EHST-2350</td>
</tr>
<tr>
<td>EHST-2361</td>
<td>EHST-2360</td>
</tr>
<tr>
<td>EHST-2371</td>
<td>EHST-2370</td>
</tr>
<tr>
<td>EHST-2991</td>
<td>EHST-2400</td>
</tr>
<tr>
<td>EHST-2820</td>
<td>EHST-2990</td>
</tr>
<tr>
<td>ENG-1001</td>
<td>ENG-1000</td>
</tr>
<tr>
<td>ENG-2151</td>
<td>ENG-2150</td>
</tr>
<tr>
<td>ENG-2601</td>
<td>ENG-2600</td>
</tr>
<tr>
<td>ESL-1121</td>
<td>ESL-1120</td>
</tr>
<tr>
<td>ESL-1131</td>
<td>ESL-1130</td>
</tr>
<tr>
<td>ESL-1221</td>
<td>ESL-1220</td>
</tr>
<tr>
<td>ESL-1231</td>
<td>ESL-1230</td>
</tr>
<tr>
<td>ESL-1321</td>
<td>ESL-1320</td>
</tr>
<tr>
<td>ESL-1331</td>
<td>ESL-1330</td>
</tr>
<tr>
<td>FIN-1061</td>
<td>FIN-1060</td>
</tr>
<tr>
<td>FIRE-2321</td>
<td>FIRE-2320</td>
</tr>
<tr>
<td>FIRE-2351</td>
<td>FIRE-2350</td>
</tr>
<tr>
<td>FIRE-2401</td>
<td>FIRE-2400</td>
</tr>
<tr>
<td>GEN-1022</td>
<td>GEN-1021</td>
</tr>
<tr>
<td></td>
<td>GEN-1020</td>
</tr>
<tr>
<td>GEN-1032</td>
<td>GEN-1031</td>
</tr>
<tr>
<td></td>
<td>GEN-1030</td>
</tr>
<tr>
<td>HTEC-1040</td>
<td>HLTH-1200</td>
</tr>
<tr>
<td>HIM-1010</td>
<td>MA-1420</td>
</tr>
<tr>
<td>HIM-1112</td>
<td>HIM-1110</td>
</tr>
<tr>
<td></td>
<td>HIM-1111</td>
</tr>
<tr>
<td>HIM-1111 &amp; HIM-1120</td>
<td>MA-2520</td>
</tr>
<tr>
<td>HIM-1121</td>
<td>HIM-1120</td>
</tr>
<tr>
<td>HIM-1301</td>
<td>HIM-1300</td>
</tr>
<tr>
<td>HIM-1311</td>
<td>HIM-1310</td>
</tr>
<tr>
<td>HIM-1401</td>
<td>HIM-1400</td>
</tr>
<tr>
<td>HIM-1411</td>
<td>HIM-1410</td>
</tr>
<tr>
<td>HIM-1423</td>
<td>HIM-1421</td>
</tr>
<tr>
<td></td>
<td>HIM-1420</td>
</tr>
<tr>
<td></td>
<td>HIM-1422</td>
</tr>
<tr>
<td>HIM-1431</td>
<td>HIM-1430</td>
</tr>
<tr>
<td>HIM-2130</td>
<td>HIM-1130</td>
</tr>
<tr>
<td>HIM-2130 &amp; HIM-2150</td>
<td>HIM-2300</td>
</tr>
<tr>
<td>HIM-2150</td>
<td>HIM-1150</td>
</tr>
<tr>
<td>HIM-2312</td>
<td>HIM-2311</td>
</tr>
<tr>
<td></td>
<td>HIM-2310</td>
</tr>
<tr>
<td>HIM-2401 &amp; HIM-2430</td>
<td>HIM-2400</td>
</tr>
<tr>
<td>HIM-2851</td>
<td>HIM-2850</td>
</tr>
<tr>
<td>HIM-2861</td>
<td>HIM-2860</td>
</tr>
<tr>
<td>HIST-2031</td>
<td>HIST-2030</td>
</tr>
<tr>
<td>HIST-2051</td>
<td>HIST-2050</td>
</tr>
<tr>
<td>HIST-2150</td>
<td>HIST-1710</td>
</tr>
<tr>
<td>HIST-2160</td>
<td>HIST-1720</td>
</tr>
<tr>
<td>HOSP-1031</td>
<td>HOSP-1030</td>
</tr>
<tr>
<td>HOSP-1360</td>
<td>HOSP-1370</td>
</tr>
<tr>
<td>HOSP-1451</td>
<td>HOSP-1450</td>
</tr>
<tr>
<td>HOSP-1481</td>
<td>HOSP-1480</td>
</tr>
<tr>
<td>HOSP-1552</td>
<td>HOSP-1550</td>
</tr>
<tr>
<td></td>
<td>HOSP-1551</td>
</tr>
<tr>
<td>HOSP-1650 &amp; HOSP-1680</td>
<td>HOSP-1670</td>
</tr>
<tr>
<td>HOSP-1940</td>
<td>HOSP-1860</td>
</tr>
<tr>
<td></td>
<td>HOSP-186A</td>
</tr>
<tr>
<td></td>
<td>HOSP-186B</td>
</tr>
<tr>
<td>HOSP-1950</td>
<td>HOSP-1860</td>
</tr>
<tr>
<td></td>
<td>HOSP-186C</td>
</tr>
<tr>
<td>HOSP-1960</td>
<td>HOSP-1860</td>
</tr>
<tr>
<td></td>
<td>HOSP-186D</td>
</tr>
<tr>
<td>HOSP-2340</td>
<td>HOSP-1350</td>
</tr>
<tr>
<td>HOSP-2371</td>
<td>HOSP-2370</td>
</tr>
<tr>
<td>HOSP-2651</td>
<td>HOSP-2650</td>
</tr>
<tr>
<td>HOSP-2700</td>
<td>HOSP-1700</td>
</tr>
<tr>
<td>HOSP-2862</td>
<td>HOSP-2860</td>
</tr>
<tr>
<td></td>
<td>HOSP-2861</td>
</tr>
<tr>
<td>HOSP-2871</td>
<td>HOSP-2870</td>
</tr>
<tr>
<td>HOSP-2992 &amp; HOSP-2560</td>
<td>HOSP-2990</td>
</tr>
<tr>
<td></td>
<td>HOSP-2991</td>
</tr>
<tr>
<td>HS-1101</td>
<td>HS-1100</td>
</tr>
<tr>
<td></td>
<td>HS-1400</td>
</tr>
<tr>
<td>HS-1110</td>
<td>HS-2420</td>
</tr>
<tr>
<td>HS-1200</td>
<td>HS-1310 &amp; HS-2310</td>
</tr>
<tr>
<td>HS-1210</td>
<td>HS-1320</td>
</tr>
<tr>
<td>HS-1220</td>
<td>HS-1410 &amp; HS-1420</td>
</tr>
<tr>
<td>HS-2200</td>
<td>HS-2320</td>
</tr>
<tr>
<td>HS-2300</td>
<td>HS-2410</td>
</tr>
<tr>
<td>HS-2600</td>
<td>HS-2510 &amp; HS-2520</td>
</tr>
<tr>
<td>HUM-175H</td>
<td>HUM-1750</td>
</tr>
<tr>
<td>INTD-1111</td>
<td>INTD-1110</td>
</tr>
<tr>
<td>INTD-2851</td>
<td>INTD-2850</td>
</tr>
<tr>
<td>IT-1010</td>
<td>OADM-1020</td>
</tr>
<tr>
<td>IT-1040</td>
<td>CS-1320</td>
</tr>
<tr>
<td>IT-1050</td>
<td>CS-1350</td>
</tr>
<tr>
<td>IT-1060</td>
<td>OADM-1060</td>
</tr>
<tr>
<td>IT-1150</td>
<td>ITWM-1010</td>
</tr>
<tr>
<td>IT-2030</td>
<td>ITWM-2030</td>
</tr>
<tr>
<td>IT-2320</td>
<td>ITWM-2320</td>
</tr>
<tr>
<td>IT-2351</td>
<td>IT-2350</td>
</tr>
<tr>
<td>IT-2620</td>
<td>ITMP-2620</td>
</tr>
<tr>
<td>IT-2650</td>
<td>ITMP-2650</td>
</tr>
<tr>
<td>IT-2660</td>
<td>ITMP-2660</td>
</tr>
<tr>
<td>IT-2670</td>
<td>CS-2670</td>
</tr>
<tr>
<td></td>
<td>ITMP-2670</td>
</tr>
<tr>
<td>IT-2700</td>
<td>CS-2700</td>
</tr>
<tr>
<td>INT-2300</td>
<td>CS-2400</td>
</tr>
</tbody>
</table>
## Equivalent Courses

| JAPN-1011 | JAPN-1010 (4 Cr.) |
| JAPN-1021 | JAPN-1020 (4 Cr.) |
| JAPN-2011 | JAPN-2010 (4 Cr.) |
| JAPN-2021 | JAPN-2020 (4 Cr.) |
| JAPN-2411 | JAPN-2410 (3 Cr.) |
| JAPN-2421 | JAPN-2420 (3 Cr.) |
| JMC-1210 | JMC-2210 (3 Cr.) |
| MA-1110 | HIM-1118 (1 Cr.) |
| MA-1321 & MA-132L | MA-1300 (2 Cr.) & MA-1310 (2 Cr.) |
| MA-1320 (3 Cr.) |
| MA-1402 & MA-140L | MA-1400 (2 Cr.) |
| MA-1401 (1 Cr.) & MA-140L (1 Cr.) |
| MA-1503 & MA-150L | MA-1500 (3 Cr.) |
| MA-1501 (3 Cr.) |
| MA-1502 (3 Cr.) & MA-150L (1 Cr.) |
| MA-2010 | MA-1030 (2 Cr.) |
| MA-2413 & MA-240L | MA-1410 (3 Cr.) |
| MA-2410 (3 Cr.) |
| MA-2411 (3 Cr.) |
| MA-2412 (2 Cr.) & MA-241L (1 Cr.) |
| MARS-1180 | VCDV-1180 (3 Cr.) |
| GCMT-2700 (3 Cr.) |
| VCIM-2170 (3 Cr.) |
| MARS-2180 | VCDV-2180 (3 Cr.) |
| MARS-2280 | VCDV-2280 (3 Cr.) |
| MARS-2380 | VCDV-2380 (3 Cr.) |
| MARS-2680 | VCDV-2680 (3 Cr.) |
| MARS-2780 | VCDV-2780 (3 Cr.) |
| MATH-0855 | MATH-0850 (2 Cr.) |
| MATH-0955 | MATH-0950 (4 Cr.) |
| MATH-0960 (4 Cr.) |
| MATH-0980 (5 Cr.) |
| MATH-0965 | MATH-1280 (5 Cr.) |
| MATH-1270 (4 Cr.) |
| MATH-1200 (4 Cr.) |
| MATH-1100 | MATH-1141 (3 Cr.) |
| MATH-1140 (2 Cr.) |
| MATH-1060 (3 Cr.) |
| MATH-1240 | MATH-1250 (4 Cr.) |
| MATH-1141 (3 Cr.) |
| MATH-1140 (2 Cr.) |
| MATH-1530 | MATH-1521 (4 Cr.) |
| MATH-1520 (3 Cr.) |
| MATH-152H (3 Cr.) |
| MATH-153H | MATH-152H (4 Cr.) |
| MATH-1521 (4 Cr.) |
| MATH-1520 (3 Cr.) |
| MATH-1540 | MATH-1510 (3 Cr.) |
| MATH-151H (3 Cr.) |
| MATH-154H | MATH-151H (3 Cr.) |
| MATH-1510 (3 Cr.) |
| MET-1120 | MIT-1100 (2 Cr.) |
| MET-1230 | MET-1200 (2 Cr.) & MET-1220 (2 Cr.) |
| MET-1200 (2 Cr.) & MET-1220 (2 Cr.) |
| MET-1240 | MIT-1250 (3 Cr.) |
| MET-1261 | MET-1260 (3 Cr.) |
| MET-1300 | MIT-1300 (3 Cr.) |
| MET-1400 | MIT-1600 (3 Cr.) |
| MET-1500 | MIT-1600 (2 Cr.) |
| MET-1601 | MIT-1620 (2 Cr.) |
| MET-2000 | MIT-2000 (3 Cr.) |
| MET-2041 | MIT-2040 (3 Cr.) |
| MET-2050 | MIT-2051 (3 Cr.) |
| MET-2191 | MIT-2190 (3 Cr.) |
| MET-2220 | MIT-2700 (3 Cr.) |
| MET-2400 | MIT-2400 (3 Cr.) |
| MET-2422 | MIT-2420 (4 Cr.) |
| MET-2421 (2 Cr.) |
| MET-2500 | MIT-2200 (3 Cr.) |
| MET-2601 | MIT-2600 (3 Cr.) |
| MET-2730 | MIT-2730 (3 Cr.) |
| MET-2740 | MIT-2740 (3 Cr.) |
| MET-2830 | MIT-2830 (1-3 Cr.) |
| MET-2941 | MIT-2940 (1 Cr.) |
| MT-1240 & MT-1272 | MT-1240 (4 Cr.) |
| MT-1241 (4 Cr.) |
| MT-1272 & MT-1280 | MT-1270 (4 Cr.) |
| MT-1271 (4 Cr.) |
| MT-1302 | MT-1300 (4 Cr.) |
| MT-1301 (3 Cr.) |
| MT-1312 | MT-1310 (3 Cr.) |
| MT-1311 (4 Cr.) |
| MT-1321 | MT-1320 (3 Cr.) |
| MT-1331 | MT-1330 (3 Cr.) |
| MT-2301 | MT-2300 (4 Cr.) |
| MT-2311 | MT-2310 (3 Cr.) |
| MT-2350 | MT-2341 (3 Cr.) |
| MT-2340 (2 Cr.) |
| MT-2342 (2 Cr.) |
| MT-2360 | MT-2851 (3 Cr.) |
| MT-2850 (4 Cr.) |
| MT-2852 (2 Cr.) |
| MT-2380 | MT-2870 (2 Cr.) |
| MT-2701 | MT-2700 (2 Cr.) |
| MT-2861 | MT-2860 (4 Cr.) |
| MT-2991 | MT-2990 (1 Cr.) |
| MUS-1460 | MUS-1460 |
| MUS-1470 | MUS-1470 |
| MUS-2460 | MUS-2460 |

---

*MUS - All deleted Applied Music I classes are equivalent – see music department faculty coordinators*

*MUS - All deleted Applied Music II classes - see music department faculty coordinators*

*MUS - All deleted Applied Music III classes - see music department faculty coordinators*
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-2470</td>
<td>MUS - All deleted Applied Music \ IV classes - see music department faculty coordinators</td>
</tr>
<tr>
<td>NMED-1301 &amp; NMED-130L</td>
<td>NMED-1300 (4 Cr.)</td>
</tr>
<tr>
<td>NMED-2301 &amp; NMED-230L</td>
<td>NMED-2300 (4 Cr.)</td>
</tr>
<tr>
<td>NMED-2410</td>
<td>NMED-2400 (3 Cr.)</td>
</tr>
<tr>
<td>NURS-1451</td>
<td>NURS-1401 (4 Cr.) &amp; NURS-1500 (4 Cr.) NURS-1450 (8 Cr.)</td>
</tr>
<tr>
<td>NURS-1601</td>
<td>NURS-1600 (8 Cr.)</td>
</tr>
<tr>
<td>NURS-2301</td>
<td>NURS-2300 (9 Cr.)</td>
</tr>
<tr>
<td>NURS-2501</td>
<td>NURS-2500 (9 Cr.)</td>
</tr>
<tr>
<td>OPT-1721</td>
<td>OPT-1720 (3 Cr.)</td>
</tr>
<tr>
<td>OPT-1911</td>
<td>OPT-1910 (4 Cr.)</td>
</tr>
<tr>
<td>OPT-2501</td>
<td>OPT-2500 (2 Cr.)</td>
</tr>
<tr>
<td>OPT-2861 &amp; OPT-2970</td>
<td>OPT-2330 (2 Cr.) &amp; OPT-2430 (3 Cr.) &amp; OPT-2530 (3 Cr.) &amp; OPT-2630 (3 Cr.)</td>
</tr>
<tr>
<td>OPT-2870 &amp; OPT-2980</td>
<td>OPT-2440 (3 Cr.) &amp; OPT-2540 (3 Cr.) &amp; OPT-2640 (2 Cr.) &amp; OPT-2700 (3 Cr.) &amp; OPT-2860 (2 Cr.)</td>
</tr>
<tr>
<td>OTAT-1980</td>
<td>MA-1980 (2 Cr.)</td>
</tr>
<tr>
<td>PE-1031</td>
<td>PE-1030 (1 Cr.)</td>
</tr>
<tr>
<td>PE-1041</td>
<td>PE-1040 (1 Cr.)</td>
</tr>
<tr>
<td>PE-1051</td>
<td>PE-1050 (1 Cr.)</td>
</tr>
<tr>
<td>PE-1421</td>
<td>PE-1420 (2 Cr.)</td>
</tr>
<tr>
<td>PHIL-2031</td>
<td>PHIL-2030 (3 Cr.)</td>
</tr>
<tr>
<td>PL-1001</td>
<td>PL-1000 (2 Cr.)</td>
</tr>
<tr>
<td>PL-1502</td>
<td>PL-1500 (3 Cr.) PL-1501 (2 Cr.)</td>
</tr>
<tr>
<td>PL-2420</td>
<td>PL-1420 (3 Cr.)</td>
</tr>
<tr>
<td>PL-2440 &amp; PL-2460</td>
<td>PL-1440 (4 Cr.) PL-2301 PL-2300 (3 Cr.) PL-2991 PL-2990 (1 Cr.)</td>
</tr>
<tr>
<td>PNUR-1322</td>
<td>PNUR-1321 (7 Cr.)</td>
</tr>
<tr>
<td>POL-2030</td>
<td>POL-1030 (3 Cr.) POL-2070 POL-1070 (3 Cr.) POL-2100 POL-1100 (3 Cr.) PST-1311 PST-1310 (3 Cr.)</td>
</tr>
<tr>
<td>PST-1321</td>
<td>PST-1320 (3 Cr.) PST-1351 PST-1350 (2 Cr.) PST-1411 PST-1410 (3 Cr.) PST-1431 PST-1430 (3 Cr.) PST-1441 PST-1440 (3 Cr.)</td>
</tr>
<tr>
<td>PST-1500 &amp; PST-2200</td>
<td>PST-2350 (3 Cr.)</td>
</tr>
<tr>
<td>PTAT-1311 &amp; HTEC-1000</td>
<td>PTAT-1310 (3 Cr.)</td>
</tr>
<tr>
<td>PTAT-1401</td>
<td>PTAT-1400 (3 Cr.)</td>
</tr>
<tr>
<td>PTAT-1411</td>
<td>PTAT-1410 (5 Cr.)</td>
</tr>
<tr>
<td>PTAT-2301</td>
<td>PTAT-2300 (3 Cr.) &amp; PTAT-2320 (3 Cr.)</td>
</tr>
<tr>
<td>PTAT-2341</td>
<td>PTAT-2340 (1 Cr.)</td>
</tr>
<tr>
<td>PTAT-2840 &amp; PTAT-2850</td>
<td>PTAT-2950 (3 Cr.) PTAT-1351 PTAT-1350 (3 Cr.) PTAT-1911 PTAT-1910 (7 Cr.)</td>
</tr>
<tr>
<td>RADT-1351</td>
<td>RADT-1350 (3 Cr.) RADT-1911</td>
</tr>
</tbody>
</table>
| RADT-2361 | RADT-2360 (2 Cr.) RADT-2401 RADT-2400 (3 Cr.) RADT-2911 RADT-2910 (7 Cr.) RADT-2921 RADT-2920 (5 Cr.) RAT-1311 RAT-1310 (4 Cr.) RAT-1511 RAT-1510 (3 Cr.) RAT-2311 RAT-2310 (3 Cr.) RAT-2341 RAT-2340 (3 Cr.) RESP-1421 & RESP-142L RESP-1420 (3 Cr.) RESP-2341 RESP-2340 (2 Cr.) RESP-2940 RESP-2910 (3 Cr.) RESP-2950 RESP-2920 (5 Cr.) RESP-2960 RESP-2930 (5 Cr.) SOC-2020 SOC-1210 (3 Cr.) SOC-2051 SOC-2050 (3 Cr.) SPAN-1011 SPAN-1010 (4 Cr.) SPAN-1021 SPAN-1020 (4 Cr.) SPAN-2411 SPAN-2410 (3 Cr.) SPCH-2020 SPCH-2030 (3 Cr.) SURT-1700 MA-1700 (4 Cr.) SURT-1710 MA-1710 (4 Cr.) SURT-1861 SURT-1860 (2 Cr.) MA-1860 (2 Cr.) SURT-1910 (4 Cr.) SURT-1912 (4 Cr.) SURT-2851 SURT-2850 (3 Cr.) SURT-2862 SURT-2861 (4 Cr.) THEA-2210 THEA-1210 (3 Cr.) THEA-2220 THEA-1220 (3 Cr.) VC&D-1000 CART-1050 (2 Cr.) VC&D-1100 (2 Cr.) VC&D-1110 (2 Cr.) VC&D-1015 CART-1020 (1 Cr.) GCMT-1020 (1 Cr.) VC&D-1010 (1 Cr.) or VCDP-1060 (2 Cr.) VC&D-1200 CART-1300 (2 Cr.) VC&D-1061 CART-1060 (3 Cr.) VC&D-1060 (3 Cr.) VC&D-1430 CART-1310 (1 Cr.) & CART-131L (1 Cr.) & CART-1600 (1 Cr.) & CART-160L (1 Cr.) & CART-1600 (1 Cr.) & VC&D-1300 (1 Cr.) & VC&D-130L (1 Cr.) & VC&D-1400 (1 Cr.) & VC&D-140L (1 Cr.) & VCDP-1360 (2 Cr.) VC&D-2301 CART-2310 (2 Cr.) VC&D-2300 (2 Cr.) VC&D-2401 CART-2320 (2 Cr.) VC&D-2400 (2 Cr.) VC&D-2530 GCMT-2530 (3 Cr.) VC&D-2541 GCMT-2540 (2 Cr.) VC&D-2540 (2 Cr.) VC&D-2600 CART-2330 (2 Cr.)
Equivalent Courses

| VC&D-2701 | CART-2450 (2 Cr.) | VC&D-2700 (2 Cr.) |
| VC&D-2991 | CART-2700 (2 Cr.) | GMCMT-2510 (2 Cr.) | VC&D-2990 (2 Cr.) |
| VCAD-2520 | CART-2500 (2 Cr.) | VCAD-2530 (2 Cr.) |
| VCAD-2621 | VCAD-2620 (2 Cr.) | VCAD-2630 (2 Cr.) |
| VCAD-2721 | VCAD-2720 (2 Cr.) | VCAD-2730 (2 Cr.) |
| VCGD-1500 | CART-1500 (2 Cr.) | VC&D-1500 (3 Cr.) |
| VCGD-2131 | CART-2430 (2 Cr.) | VCGD-2140 (2 Cr.) |
| VCGD-2231 | CART-2420 (2 Cr.) | VCGD-2240 (2 Cr.) |
| VCGD-2331 | CART-2410 (2 Cr.) | VCGD-2340 (2 Cr.) |
| VCIL-1141 | CART-1340 (2 Cr.) | VCIL-1140 (2 Cr.) |
| VCIL-2541 | VCIL-2540 (2 Cr.) | VCIL-2550 (2 Cr.) |
| VCIM-1570 | GCMT-2471 (3 Cr.) | GCMT-2470 (3 Cr.) |
| VCIM-2071 | VCIM-2070 (3 Cr.) | VCIM-2070 (3 Cr.) |
| VCIM-2270 | GCMT-2490 (3 Cr.) | VCIM-2280 (3 Cr.) |
| VCIM-2290 | VCIM-2290 (3 Cr.) | VCIM-2290 (3 Cr.) |
| VCIM-2371 | GCMT-2711 (3 Cr.) | VCIM-2370 (3 Cr.) |
| VCIM-2470 | GCMT-2161 (2 Cr.) | VCIM-2470 (2 Cr.) |
| VCIM-2571 | VCIM-2570 (3 Cr.) | VCIM-2570 (3 Cr.) |
| VCIM-2401 | VCIM-2400 (3 Cr.) | VCIM-2400 (3 Cr.) |
| VCPH-1050 | GCMT-1500 (3 Cr.) | VCPH-1260 (3 Cr.) |
| VCPH-1150 | GCMT-1540 (3 Cr.) | VCPH-1450 (3 Cr.) |
| VCPH-1261 | VCPH-1260 (3 Cr.) | VCPH-1450 (3 Cr.) |
| VCPH-1450 | GCMT-1600 (3 Cr.) | VCPH-2050 (3 Cr.) |
| VCPH-2050 | GCMT-2500 (3 Cr.) | VCPH-2260 (3 Cr.) |
| VCPH-2260 | VCPH-1350 (3 Cr.) | VCPH-2150 (3 Cr.) |
| VCPH-2150 | VCPH-2150 (3 Cr.) | VCPH-2260 (3 Cr.) |
| VCPH-2450 | GCMT-2600 (3 Cr.) | VCPH-2450 (3 Cr.) |
| VCPH-2540 | VCPH-2450 (2 Cr.) | VCPH-2540 (2 Cr.) |
| VCPH-2550 | GCMT-2550 (3 Cr.) | VCPH-2550 (3 Cr.) |
| VCPH-2660 | VCPH-2350 (3 Cr.) & VCPH-2650 (3 Cr.) | VCPH-2660 (3 Cr.) |
| VCPH-2760 | VCPH-2760 (3 Cr.) | VCPH-2760 (3 Cr.) |
| VT-1100 & VT-1200 | VT-1300 (2 Cr.) | VT-1300 (2 Cr.) |
| VT-1451 | VT-1451 (2 Cr.) | VT-1451 (2 Cr.) |

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.

<table>
<thead>
<tr>
<th>Cross-Listed Course</th>
<th>Equivalent Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT-2990</td>
<td>BADM-2501</td>
</tr>
<tr>
<td>ART-2151</td>
<td>VCIM-2270</td>
</tr>
<tr>
<td>BADM-1490</td>
<td>PL-1490</td>
</tr>
<tr>
<td>BIO-1300</td>
<td>PST-1300</td>
</tr>
<tr>
<td>ENG-2050</td>
<td>WST-2050</td>
</tr>
<tr>
<td>HLTH-1310</td>
<td>EMT-1310</td>
</tr>
<tr>
<td>PSCI-1010</td>
<td>PHYS-1010</td>
</tr>
<tr>
<td>PSCI-101L</td>
<td>PHYS-101L</td>
</tr>
<tr>
<td>PSCI-1020</td>
<td>CHEM-1000</td>
</tr>
<tr>
<td>PSCI-102L</td>
<td>CHEM-100L</td>
</tr>
<tr>
<td>PSCI-1030</td>
<td>ESI-1030</td>
</tr>
<tr>
<td>PSCI-103L</td>
<td>ESI-103L</td>
</tr>
<tr>
<td>POL-2120</td>
<td>WST-2120</td>
</tr>
<tr>
<td>WST-2020</td>
<td>HIST-2020</td>
</tr>
</tbody>
</table>

Standard and Honors Courses

<table>
<thead>
<tr>
<th>Standard Course</th>
<th>Equivalent Honors Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-2020</td>
<td>ART-202H</td>
</tr>
<tr>
<td>ART-2030</td>
<td>ART-203H</td>
</tr>
<tr>
<td>BADM-2010</td>
<td>BADM-201H</td>
</tr>
<tr>
<td>BIO-1500</td>
<td>BIO-150H</td>
</tr>
<tr>
<td>BIO-1510</td>
<td>BIO-151H</td>
</tr>
<tr>
<td>CHEM-1010</td>
<td>CHEM-101H</td>
</tr>
<tr>
<td>CHEM-1020</td>
<td>CHEM-102H</td>
</tr>
<tr>
<td>CHEM-1300 &amp; CHEM-130L</td>
<td>CHEM-130H</td>
</tr>
<tr>
<td>CHEM-1310 &amp; CHEM-131L</td>
<td>CHEM-131H</td>
</tr>
<tr>
<td>ENG-1010</td>
<td>ENG-101H</td>
</tr>
<tr>
<td>ENG-1020</td>
<td>ENG-102H</td>
</tr>
<tr>
<td>ESI-1410</td>
<td>ESI-141H</td>
</tr>
<tr>
<td>HIST-1010</td>
<td>HIST-101H</td>
</tr>
<tr>
<td>HIST-1020</td>
<td>HIST-102H</td>
</tr>
<tr>
<td>HIST-1510</td>
<td>HIST-151H</td>
</tr>
<tr>
<td>HIST-1520</td>
<td>HIST-152H</td>
</tr>
<tr>
<td>None</td>
<td>HUM-175H</td>
</tr>
<tr>
<td>IT-1010</td>
<td>IT-101H</td>
</tr>
<tr>
<td>MATH-1540</td>
<td>MATH-154H</td>
</tr>
<tr>
<td>MATH-1550</td>
<td>MATH-155H</td>
</tr>
<tr>
<td>MATH-1610</td>
<td>MATH-161H</td>
</tr>
<tr>
<td>MATH-1620</td>
<td>MATH-162H</td>
</tr>
<tr>
<td>MATH-2310</td>
<td>MATH-231H</td>
</tr>
<tr>
<td>PHIL-1010</td>
<td>PHIL-101H</td>
</tr>
<tr>
<td>PHIL-2020</td>
<td>PHIL-202H</td>
</tr>
<tr>
<td>PHIL-2050</td>
<td>PHIL-205H</td>
</tr>
<tr>
<td>POL-1010</td>
<td>POL-101H</td>
</tr>
<tr>
<td>PSY-1010</td>
<td>PSY-101H</td>
</tr>
</tbody>
</table>
# 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-1020</td>
<td>Physical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>AOS-1220</td>
<td>Speed Building</td>
<td>1</td>
</tr>
<tr>
<td>AOS-2400</td>
<td>Virtual Portfolio Project</td>
<td>1</td>
</tr>
<tr>
<td>AOS-2600</td>
<td>Voice Recognition Technology</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-1001</td>
<td>Introduction to Automotive Service Procedures</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-1010</td>
<td>Shop Safety and Lab Procedures</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-1200</td>
<td>Introduction to Automotive Service Manuals and Information Systems</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-130A</td>
<td>Automotive Engines Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-130B</td>
<td>Automotive Engines: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-130C</td>
<td>Automotive Engines: Advanced Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-135A</td>
<td>Manual Transmission and Drivetrain: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-135B</td>
<td>Manual Transmission and Drivetrain: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-140A</td>
<td>Automotive Alignment, Steering, and Suspension: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-140B</td>
<td>Automotive Alignment, Steering, and Suspension: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-145A</td>
<td>Automotive Braking Systems: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-145B</td>
<td>Automotive Braking Systems: Advanced Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-145C</td>
<td>Automotive Braking Systems: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-150A</td>
<td>Automotive Electrical Fundamentals: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-150B</td>
<td>Automotive Electrical Fundamentals: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-230A</td>
<td>Automatic Transmissions: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-230B</td>
<td>Automatic Transmissions: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-235A</td>
<td>Automotive HVAC: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-235B</td>
<td>Automotive HVAC: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-240A</td>
<td>Engine Performance: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-240B</td>
<td>Engine Performance: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-240C</td>
<td>Engine Performance: Advanced Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-245A</td>
<td>Automotive Electronic Engine Controls</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-245B</td>
<td>Automotive Electronic Engine Controls: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-245C</td>
<td>Automotive Electronic Engine Controls: Advanced Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-247A</td>
<td>Automotive Electrical Systems: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-247B</td>
<td>Automotive Electrical Systems: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-250A</td>
<td>Automotive Electrical Diagnosis: Principles</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-250B</td>
<td>Automotive Electrical Diagnosis: Laboratory Competencies</td>
<td>1</td>
</tr>
<tr>
<td>AUTO-2600</td>
<td>Hybrids and Alternative Fuel Systems</td>
<td>3</td>
</tr>
<tr>
<td>BADM-1060</td>
<td>Leadership Seminar</td>
<td>1</td>
</tr>
<tr>
<td>BADM-2020</td>
<td>Leadership Theory</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2030</td>
<td>Management Development</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2040</td>
<td>Strategic Leadership</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2230</td>
<td>Value Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2290</td>
<td>Urban Agribusiness Management</td>
<td>3</td>
</tr>
<tr>
<td>BADM-2420</td>
<td>CPS Review: Management, Finance and Business Law</td>
<td>3</td>
</tr>
<tr>
<td>C&amp;CR-1610</td>
<td>Speed Development I</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1620</td>
<td>Speed Development II</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-1630</td>
<td>Speed Development III</td>
<td>1</td>
</tr>
<tr>
<td>C&amp;CR-2651</td>
<td>Technical Terminology II</td>
<td>3</td>
</tr>
<tr>
<td>CNST-1420</td>
<td>Architectural CAD II</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2360</td>
<td>Energy Auditing &amp; Weatherization</td>
<td>3</td>
</tr>
<tr>
<td>CNST-2420</td>
<td>Sustainable Design &amp; Supervision</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1200</td>
<td>Oral Structures</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1300</td>
<td>Dental Assisting Methods</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1310</td>
<td>Dental Assisting Radiology</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1320</td>
<td>Dental Office Management</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1330</td>
<td>Reimbursement for Dental Services</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1400</td>
<td>Dental Assisting Methods II</td>
<td>3</td>
</tr>
<tr>
<td>DAST-1410</td>
<td>Dental Assisting Radiography II</td>
<td>2</td>
</tr>
<tr>
<td>DAST-1420</td>
<td>Current Concepts for the Dental Assistant</td>
<td>1</td>
</tr>
<tr>
<td>DAST-1850</td>
<td>Practicum</td>
<td>2</td>
</tr>
<tr>
<td>DIET-1150</td>
<td>Nutrition for Children and Families</td>
<td>2</td>
</tr>
<tr>
<td>DIET-1340</td>
<td>Health Food Exploration</td>
<td>2</td>
</tr>
<tr>
<td>DMS-1260</td>
<td>Pediatric Cardiovascular Anatomy, Physiology, and Assessment</td>
<td>2</td>
</tr>
<tr>
<td>DMS-2000</td>
<td>Sonographic Case Studies</td>
<td>1</td>
</tr>
<tr>
<td>DMS-2370</td>
<td>Advanced Sonographic Physical Principles and Flows</td>
<td>3</td>
</tr>
<tr>
<td>DMS-2921</td>
<td>Directed Practice III</td>
<td>3</td>
</tr>
<tr>
<td>ECED-101A</td>
<td>Children's Development and Types of Programs in Early Childhood</td>
<td>1</td>
</tr>
<tr>
<td>ECED-101B</td>
<td>Theoretical Foundations of Early Childhood</td>
<td>1</td>
</tr>
<tr>
<td>ECED-101C</td>
<td>Curriculum and Inclusion in Early Childhood</td>
<td>1</td>
</tr>
<tr>
<td>ECED-101D</td>
<td>Early Childhood Curriculum in the Classroom</td>
<td>1</td>
</tr>
<tr>
<td>Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ECED-1600</td>
<td>Beginning Writing and Reading</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2610</td>
<td>Language, Literacy and Print-Sound Code</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2620</td>
<td>Assessment in Early Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ECED-2630</td>
<td>Mentoring in Early Literacy</td>
<td>3</td>
</tr>
<tr>
<td>EET-1060</td>
<td>PC Networking</td>
<td>2</td>
</tr>
<tr>
<td>EET-2250</td>
<td>Industrial Electronics II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2130</td>
<td>Telecommunications II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2140</td>
<td>Digital Circuits/Microprocessors II</td>
<td>3</td>
</tr>
<tr>
<td>EET-2230</td>
<td>Telecommunications III</td>
<td>3</td>
</tr>
<tr>
<td>EET-2590</td>
<td>Telecommunications Design Project</td>
<td>2</td>
</tr>
<tr>
<td>EHH-2310</td>
<td>CERCLA Superfund Sites</td>
<td>2</td>
</tr>
<tr>
<td>FIN-1110</td>
<td>Principles of Finance</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1001</td>
<td>Orientation to Publishing Industries</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1010</td>
<td>Orientation to Publishing Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GCMT-1220</td>
<td>Digital Output Systems I</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1230</td>
<td>Digital Output Systems II</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1250</td>
<td>Variable Data Document Creation and Printing</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1340</td>
<td>Imaging Science</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1350</td>
<td>Image Reproduction and Film Assembly</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-1410</td>
<td>Integrating Production and Design for Graphic Products</td>
<td>3</td>
</tr>
<tr>
<td>GCMT-2300</td>
<td>Print Production Materials</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-2311</td>
<td>Substrate Imaging and Finishing</td>
<td>4</td>
</tr>
<tr>
<td>GCMT-2320</td>
<td>Offset Printing</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-2340</td>
<td>Imposition, Layout, Bindery and Finishing</td>
<td>3</td>
</tr>
<tr>
<td>GCMT-2350</td>
<td>Printing Production and Operations Management</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-2360</td>
<td>Customer Service and Sales Support</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-2370</td>
<td>Printing Estimating</td>
<td>2</td>
</tr>
<tr>
<td>GCMT-2840</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>GEN-1050</td>
<td>Organizing Your Employment Campaign</td>
<td>2</td>
</tr>
<tr>
<td>HIM-2420</td>
<td>Trends in Health Information Management</td>
<td>2</td>
</tr>
<tr>
<td>HS-1010</td>
<td>Community Care Coordinator I</td>
<td>2</td>
</tr>
<tr>
<td>HS-1020</td>
<td>Community Care Coordinator II</td>
<td>2</td>
</tr>
<tr>
<td>HS-1030</td>
<td>Community Care Coordinator III</td>
<td>2</td>
</tr>
<tr>
<td>HS-1230</td>
<td>Chemical Dependency Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>INTD-2350</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>ITMF-1310</td>
<td>Internal Computer Functions</td>
<td>2</td>
</tr>
<tr>
<td>ITMF-1500</td>
<td>Application Program Development I: COBOL</td>
<td>5</td>
</tr>
<tr>
<td>ITMF-2530</td>
<td>Application Program Development II: COBOL</td>
<td>5</td>
</tr>
<tr>
<td>ITMF-2550</td>
<td>Application Program Development III: COBOL, CICS, SQL</td>
<td>5</td>
</tr>
<tr>
<td>ITMF-2610</td>
<td>Assembly Language Programming</td>
<td>4</td>
</tr>
<tr>
<td>ITMP-1060</td>
<td>Introduction to Programming Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ITMP-2630</td>
<td>Advanced Visual Basic Programming</td>
<td>4</td>
</tr>
<tr>
<td>ITNT-2340</td>
<td>Netware Administration I</td>
<td>3</td>
</tr>
<tr>
<td>ITNT-2440</td>
<td>Netware Administration II</td>
<td>3</td>
</tr>
<tr>
<td>ITWM-2990</td>
<td>E-Commerce Technologies</td>
<td>3</td>
</tr>
<tr>
<td>JMC-1020</td>
<td>Introduction to Mass Communications II</td>
<td>3</td>
</tr>
<tr>
<td>LAWE-2430</td>
<td>Contemporary Security Problems</td>
<td>3</td>
</tr>
<tr>
<td>LAWE-2520</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>MARK-2990</td>
<td>Marketing Case Analysis</td>
<td>1</td>
</tr>
<tr>
<td>MATH-1050</td>
<td>Mathematics for Technology</td>
<td>3</td>
</tr>
<tr>
<td>MATH-1180</td>
<td>Intermediate Algebra for Technologies</td>
<td>4</td>
</tr>
<tr>
<td>MET-2020</td>
<td>Geometric Dimensioning and Tolerancing</td>
<td>2</td>
</tr>
<tr>
<td>MET-2150</td>
<td>Printing &amp; Scanning for Reverse Engineering and Inspection</td>
<td>3</td>
</tr>
<tr>
<td>MIT-2030</td>
<td>Industrial Drawing Essentials</td>
<td>3</td>
</tr>
<tr>
<td>MIT-2150</td>
<td>Motion and Time Study</td>
<td>3</td>
</tr>
<tr>
<td>MIT-2120</td>
<td>Facilities Design and Material Handling</td>
<td>3</td>
</tr>
<tr>
<td>MIT-2220</td>
<td>Advanced AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1350</td>
<td>Problem Solving Techniques for the Medical Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MLT-1460</td>
<td>Hematology I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1470</td>
<td>Blood Bank and Serology I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1480</td>
<td>Clinical Microbiology I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-1500</td>
<td>Clinical Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>MLT-2460</td>
<td>Hematology II</td>
<td>2</td>
</tr>
<tr>
<td>MLT-2470</td>
<td>Blood Bank and Serology II</td>
<td>2</td>
</tr>
<tr>
<td>MLT-2481</td>
<td>Clinical Microbiology II</td>
<td>2</td>
</tr>
<tr>
<td>MLT-2500</td>
<td>Clinical Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>MLT-2850</td>
<td>Medical Laboratory Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MT-1400</td>
<td>Overview and Assessment in Geriatric Massage Therapy</td>
<td>3</td>
</tr>
<tr>
<td>MT-2400</td>
<td>Geriatric Massage Technique</td>
<td></td>
</tr>
<tr>
<td>MT-2410</td>
<td>Health and Aging</td>
<td></td>
</tr>
<tr>
<td>NMED-1600</td>
<td>Radiopharmacy and Chemistry for Nuclear Medicine</td>
<td>4</td>
</tr>
<tr>
<td>NMED-1700</td>
<td>Nuclear Medicine Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>NURS-2400</td>
<td>Health Management</td>
<td>1</td>
</tr>
<tr>
<td>PNUR-1310</td>
<td>Fundamentals of Nursing</td>
<td>4</td>
</tr>
<tr>
<td>PNUR-1320</td>
<td>Nursing Management of Adults I</td>
<td>4</td>
</tr>
<tr>
<td>PNUR-1340</td>
<td>Nursing Care of Families</td>
<td>4</td>
</tr>
<tr>
<td>PST-1500</td>
<td>Basic Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>PST-2200</td>
<td>Advanced Landscape Contracting</td>
<td>3</td>
</tr>
<tr>
<td>PST-2330</td>
<td>Entomology</td>
<td>3</td>
</tr>
<tr>
<td>PST-2340</td>
<td>Plant Pathology</td>
<td>3</td>
</tr>
<tr>
<td>PST-2360</td>
<td>Plant Pathology</td>
<td>3</td>
</tr>
<tr>
<td>PST-2440</td>
<td>Design IV – Advanced Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>PST-2410</td>
<td>Garden Center Operations I</td>
<td>3</td>
</tr>
<tr>
<td>PST-2420</td>
<td>Garden Center Operations II</td>
<td>3</td>
</tr>
<tr>
<td>REAL-1301</td>
<td>Principles and Practices of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>REAL-1321</td>
<td>Diversity Awareness and Fair Lending</td>
<td>3</td>
</tr>
<tr>
<td>REAL-1331</td>
<td>Loan Origination</td>
<td>3</td>
</tr>
<tr>
<td>REAL-1401</td>
<td>Real Estate Law</td>
<td>3</td>
</tr>
<tr>
<td>REAL-1501</td>
<td>Valuation of Residential Properties</td>
<td>1</td>
</tr>
<tr>
<td>REAL-1601</td>
<td>Real Estate Finance</td>
<td>1</td>
</tr>
<tr>
<td>REAL-2300</td>
<td>Real Estate Brokerage</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2310</td>
<td>Loan Processing</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2330</td>
<td>Loan Underwriting</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2340</td>
<td>Mortgage Loan Servicing</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2360</td>
<td>Community Development in Mortgage Lending</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>REAL-2400</td>
<td>Real Estate Sales</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2500</td>
<td>Commercial and Industrial Real Estate</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2600</td>
<td>Real Estate Management</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2700</td>
<td>Valuation of Income Properties</td>
<td>2</td>
</tr>
<tr>
<td>REAL-2940</td>
<td>Mortgage Finance Field Experience</td>
<td>1-2</td>
</tr>
<tr>
<td>RESP-1410</td>
<td>Beginning Polysomnography</td>
<td>2</td>
</tr>
<tr>
<td>RESP-1421</td>
<td>Intermediate Polysomnography I</td>
<td>2</td>
</tr>
<tr>
<td>RESP-142L</td>
<td>Intermediate Polysomnography I-Lab</td>
<td>1</td>
</tr>
<tr>
<td>RESP-1430</td>
<td>Intermediate Polysomnography II</td>
<td>3</td>
</tr>
<tr>
<td>RESP-1440</td>
<td>Neuropsychology of Sleep</td>
<td>3</td>
</tr>
<tr>
<td>RESP-1934</td>
<td>Directed Practice I</td>
<td>3</td>
</tr>
<tr>
<td>RESP-2934</td>
<td>Directed Practice II</td>
<td>3</td>
</tr>
<tr>
<td>SSCI-1030</td>
<td>Introduction to Social Science</td>
<td>3</td>
</tr>
<tr>
<td>SSCI-1040</td>
<td>Introduction to Social Science II</td>
<td>3</td>
</tr>
<tr>
<td>VCDP-1160</td>
<td>Troubleshooting Computer Publishing Systems</td>
<td>2</td>
</tr>
<tr>
<td>VCDP-1260</td>
<td>Digital Page Layout</td>
<td>2</td>
</tr>
<tr>
<td>VCDP-2260</td>
<td>Color Scanning and Reproduction</td>
<td>2</td>
</tr>
<tr>
<td>VCDP-2360</td>
<td>Digital Production and Layout</td>
<td>3</td>
</tr>
<tr>
<td>VCDP-2760</td>
<td>Estimating and Production Management</td>
<td>3</td>
</tr>
<tr>
<td>VCDV-2580</td>
<td>Digital Versatile Disk (DVD) Authoring and Design</td>
<td>3</td>
</tr>
<tr>
<td>VCGD-2631</td>
<td>Graphic Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>VCIL-1440</td>
<td>Surface Design</td>
<td>2</td>
</tr>
<tr>
<td>VCIL-2140</td>
<td>Illustration with Prismacolor</td>
<td>2</td>
</tr>
<tr>
<td>VCIL-2240</td>
<td>Illustration in Pen and Ink</td>
<td>2</td>
</tr>
<tr>
<td>VCIL-2340</td>
<td>Illustration with Watercolor</td>
<td>2</td>
</tr>
<tr>
<td>VCPH-1050</td>
<td>Black and White Photography I</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-1020</td>
<td>Practices and Procedures in Scientific Imaging</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-1350</td>
<td>Basic Photography for Scientific Imaging</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-1450</td>
<td>Scientific Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-2020</td>
<td>Scientific Imaging II</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-2450</td>
<td>Image Analysis</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-2530</td>
<td>Professional Ethics and Scientific Imaging Practice</td>
<td>3</td>
</tr>
<tr>
<td>VCSI-2990</td>
<td>Scientific Imaging III</td>
<td>3</td>
</tr>
</tbody>
</table>
FACULTY & COLLEGE LEADERSHIP

Executive Officers
College President & Executive Vice Presidents

JOHNSON, ALEX
President
B.A., Winston-Salem State University
M.A., Lehman College
Ph.D., Pennsylvania State University

KUNTZ, DAVID
Executive Vice President/Treasurer Administration & Finance
A.A.B., Cuyahoga Community College
B.B.A., Baldwin-Wallace College

MILLER, KAREN
Executive Vice President & Provost, Access, Learning & Success
B.S., University of Akron
M.S., University of Akron
Ph.D., University of Toledo

GARY, SR., WILLIAM
Executive Vice President, Workforce, Community, & Economic Development
B.A., Morehouse College
M.A., Rutgers University

PETE RSON, ROBERT
President & Chief Executive Officer Corporate College
B.S., John Carroll University
J.D., Cleveland Marshall College of Law

McNAIR, RONNA
Chief of Staff, Executive Assistant to the President
B.S., University of Akron
M.B.A., Wayne State University

Campus Presidents

IMHOFF, DONNA
Campus President
Vice President, Western Campus
B.S., Penn State University
M.S. Ed., Duquesne University
Ph.D., University of Pittsburgh

POPE, TERRI
Campus President
Vice President, Westshore Campus
A.A.S., Cuyahoga Community College
B.S., Case Western Reserve University
Ph.D., The Ohio State University

SCHOOP, MICHAEL
Campus President
Vice President, Metropolitan Campus
B.A., University of Chicago
M.A., University of Maryland, College Park
Ph.D., University of Maryland, College Park

THOMSON, J. MICHAEL
Campus President

Vice President, Eastern Campus
B.A., Pennsylvania State University
M.A., University of Kentucky
Ph.D., University of Kentucky

Vice Presidents

BOOKER, ALICIA
Vice President, Operations & Manufacturing
B.A., DePaul University
M.S., Central Michigan University

DEMMERLE, JENNIFER
Vice President, Finance & Business Services
B.A., Baldwin Wallace College
M.A., Baldwin Wallace College

HARRIS, CLAYTON
Vice President & Dean, Public Safety & Security
B.A., Ohio University

HOOVLER, DAVID
Vice President, Integrated Communications
B.A., Asbury University
M.A., Wheaton College

HOURIGAN, GERARD
Vice President, CIO Information Technology Services
B.A., Madonna University
M.S., Central Michigan University

JOHNSON, ANGELA
Vice President, Institutional Research & Enrollment Management
B.A., The Ohio State University
M.A., American University

LEITSON, CYNTHIA
Vice President, Capital Construction & Facilities
B.A., Michigan State University

McMULLEN, JUDITH
Vice President, Chief Human Resources Officer
B.A., Baldwin Wallace College
M.B.A., Ashland University

O'BRYAN, MEGAN
Vice President, Development Office & Tri-C Foundation
B.A., The Catholic University of America
M.B.A., Case Western Reserve University

RICHARD, RENEE
Vice President, General Counsel & Legal Services
B.A., Kent State University
M.B.A., Cleveland State University
J.D., Cleveland-Marshall College of Law

ROSACCO, CLAIRE
Vice President, Government Affairs & Community Outreach
B.A., The Ohio State University

WILLIAMS, LISA
Vice President, Learning & Engagement
B.S., University of Akron
M.S., University of Akron

WILSON, MONIQUE
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

Associate Vice Presidents

DEL ROSARIO, DIANA
Assoc. Vice President, College-wide Accreditation and Healthcare Initiatives
B.A., University of Puerto Rico
M.B.A., Baldwin Wallace College

ENGLISH, LINDSAY
Assoc. Vice President, Academic Professional Development & Assessment
B.S., The Ohio State University
M.B.A., Kent State University
Ph.D., University of Toledo

MARSHALL, JANICE
Assoc. Vice President, Access & Community Engagement
B.S., Michigan State University
M.S., Michigan State University
Ph.D., University of Texas at Austin

Executive Directors

ABDOLLAHIAN, HAMID
Executive Director, CISCO
M.S.A., Roosevelt University
M.B.A., Roosevelt University

BILOKONSKY, GEORGE
Executive Director, Technology Academies
B.A., The Ohio State University
B.S., The Ohio State University
M.A., Cleveland State University

BOSWORTH, BLAIR
Executive Director, Plant Operations
B.S.M.E., Cleveland State University
M.B.A., Lake Erie College

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

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

GROSS, JOSEPH
Executive Director, Workforce and Economic Development Division
B.B.A., Kent State University
M.B.A., Baldwin-Wallace College

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
A.A., Cuyahoga Community College
B.A., Myers University

JOHNSON, ANGELA
Executive Director, Enrollment Operations
B.A., The Ohio State University
M.A., American University

JOHNSON, MICHAEL
Executive Director, Accounting
B.A., The Ohio State University
M.A., Baldwin-Wallace College

KEMP, THOMAS
Executive Director, Online Learning & Academic Technology
B.A., University of Akron
M.A., University of Akron

LANDINI, MICHAEL
Executive Director, Development
B.A., George Washington University

McDADE, KATE
Executive Director, Development Office
B.S., Miami University

McKNIGHT, SANDRA
Executive Director, Access, Learning & Success
B.S.B.A., Bowling Green State University
M.B.A., Cleveland State University
Ed.D., National American University

MOIR, CHRIS ALAN
Executive Director, College Hospitality Services & Retail Operations
B.A., Kent State University

PINNEY, AMANDA
Executive Director, Development & Engagement
B.A., Mount Union College
J.D., Case Western Reserve University

ROYKO, BARRY
Executive Director, Organizational Development
A.A., Lakeland Community College
B.A., Cleveland State University
M.A., Gonzaga University

STEEKY, THOMAS
Executive Director, Facilities Development & Operations
B.A., Case Western Reserve University

STEWART, STANDISH
Executive Director, Enterprise Application Services
Deans/Associate Deans

**College-wide..........**

COX, G. PAUL  
*Dean, Creative Arts*  
B.Mus., Oberlin Conservatory of Music  
M.M., Case Western Reserve University  
Ph.D., Case Western Reserve University

DRUMMER, EBONY  
*Assoc. Dean, Nursing*  
B.A., Case Western Reserve University  
M.A., Case Western Reserve University

DULL, CHARLES  
*Assoc. Dean, Information Technology*  
A.A., Kent State University  
B.A., Youngstown State University  
M.B.A., Youngstown State University  
Ph.D., Capella University

VACANT  
*Assoc. Dean, Health Careers & Sciences*

PARKS, AMY  
*Assoc. Dean, Creative Arts*  
B.M., University of Delaware  
M.M., Peabody Conservatory John Hopkins University

WILSON, MONIQUE  
*Dean & Executive Director, Information Technology Training*  
B.B.A., Middle Tennessee State University  
M.S., Middle Tennessee State University  
Ph.D., University of Maryland

WONG, LAM  
*Dean, Manufacturing & Engineering*  
A.A., New York City Community College  
B.S., Columbia University  
M.S., National Technological University  
M.S., University of Rochester

**Eastern Campus..........**

CRAWFORD, ANDREW  
*Dean, Access & Completion*  
B.S., University of Central Florida  
M.Ed., Ohio University

CUNION, WILLIAM  
*Assoc. Dean, Liberal Arts*  
B.A., Xavier University  
M.A., Ohio University  
Ph.D., University of Illinois

HARTLEY, LORRAINE  
*Assoc. Dean, Business, Math & Technology*  
B.S., California University of Pennsylvania  
M.S., California University of Pennsylvania  
D.B.A., Nova Southeastern University

HUFF, MICHAEL  
*Dean/General Manager, Hospitality Management*  
B.S., Arizona State University  
M.B.A., Arizona 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

McCORY, DENISE  
*Dean, Learning & Engagement*  
B.A., Ohio University  
M.A., Cleveland State University  
Ph.D., Walden 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

ONKEY, LAUREN  
*Jack, Joseph and Morton Mandel Dean for Humanities*  
B.A., College of William and Mary  
M.A. University of Illinois, Urbana-Champaign  
Ph.D. University of Illinois, Urbana-Champaign

**Metropolitan Campus..........**

BOBER, DELIA  
*Dean, Learning & Engagement*  
B.A., Ohio University  
M.A., Ohio University  
Ph.D., Kent State University

ELLIS HILL, RALONDA
**Interim Dean, Access & Completion**  
B.A., Kent State University  
M.P.A., Kent State University

**ELLISON, PAMELA**  
Assoc. Dean, Business, Math & Technology  
B.S., Dyke College  
M. Ed., Kent State University  
Ph.D., Kent State University

**HULLMAN, GWEN**  
Assoc. Dean, Liberal Arts  
B.A., The Ohio State University  
M.A., Cleveland State University  
Ph.D., Kent State University

**Western Campus.........**

**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., Baldwin Wallace University  
Ph.D., Cleveland State University

**EAFFORD, FELISA**  
Assoc. Dean, Liberal Arts  
B.A., Case Western Reserve University  
M.A., Cleveland State University  
Ph.D., University of Toledo

**HALM, SCOTT**  
Assoc. Dean, Business & Applied Technologies  
B.A., Wittenberg University  
M.B.A., University of Michigan

**McDERMOTT, DANIEL**  
Assoc. Dean, Health Careers & Sciences  
A.A.S., Cuyahoga Community College  
M.S., Arizona School of Health Science

**TAYLOR HEARD, JANICE**  
Dean, Learning & Engagement  
B.A., Kent State University  
M.Ed., Kent State University  
Ph.D., University of Georgia

**Westshore Campus.........**

**McMAHON, CLAIRE**  
Assoc. Dean, Learning Engagement & Transitions  
B.A., Manhattan College  
M.F.A., Naropa University  
Ph.D., Kent State University

**PROUDFIT, ANN**  
Dean, Access & Completion  
B.A., Washington and Jefferson College  
M.S., The Ohio State University  
Ph.D., University of Toledo

**SEARSON, ROBERT**  
Dean, Learning & Engagement  
B.A., John Carroll University  
M.S., John Carroll University

**Assistant Deans**

**College-wide .............**

**CRAIDER, HOLLY**  
Asst. Dean, Curriculum and Transfer  
B.A., John Carroll University  
M.A., John Carroll University  
Ph.D., Kent State University

**MAUSSER, HERBERT**  
Asst. Dean, Honors & Scholars Programs  
B.S., Case Western Reserve University  
M.S., Case Western Reserve University

**PONGRACZ, BRENDA**  
Asst. Dean, Creative Arts  
B.A., Hiram College  
M.A., Cleveland State University  
Ed.D., Walden University

**Eastern Campus.........**

**BRILEY, VINCENT**  
Asst. Dean, Access & Completion  
B.A., Ohio University  
M.A., Ohio University

**DALTON, ARELIA**  
Interim Asst. Dean, Counseling  
B.A., Cleveland State University  
M.Ed., Cleveland State University  
M.B.A., University of Akron

**HANCOX, TERRY**  
Asst. Dean, Learning Commons  
B.A., University of Northern Iowa  
M.A., University of California, Riverside  
M.L.I.S., University of Michigan

**KEENEY, DWAYNE**  
Asst. Dean, Learning and Engagement  
B.S. Heidelberg College  
M.A. Cleveland State University  
Ph.D., University of Georgia

**RAHN, ROBERT**  
Asst. Dean, IT  
B.A., The University of Cincinnati  
M.A., The University of Cincinnati

**Metropolitan Campus .........**

**BAZILE, RICHARD**  
Asst. Dean, Learning Commons  
B.A., DePaul University  
M.A., Chicago State University
M.S., University of Illinois

DOHANOS, ABIGAIL
Interim Asst. Dean, Learning & Engagement
B.S., Canisius College
M.A., University of West Virginia

NICHOLAS, HEIDI
Interim Asst. Dean, Access & Completion
B.G.S., Kent State University
M.Ed., Cleveland State University

WEBB, TERRY
Interim 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

RIVERA, MARCOS
Asst. Dean, Counseling
B.A., Bowling Green State University
M.A., Bowling Green State University

RUANE, JULIA
Asst. Dean, Access & Completion
B.A., Cleveland State University
M.B.A., Chaminade University

Westshore Campus..........

BUDZICK, DANIELLE
Asst. Dean, Learning & Engagement
B.S., The Ohio State University
M.Ed., Cleveland State University
Ph.D, Capella University

VERNON, MARISA
Asst. Dean, Access & Completion
B.A., Kent State University
M.Ed., Kent State University

Faculty

A ..........

ABOU-DIAB, MALEK
Asst. Professor, Mathematics
B.S., Cleveland State University
M.S., Cleveland State University

ADAMS, MELANIE
Asst. Professor, Hospitality Management
A.S., Johnson and Wales University
B.S., Johnson and Wales University

AGBEMABIESE, PADMORE

Assoc. Professor, English
B.A., University of Ghana
M.A., The Ohio State University
Ph.D., The Ohio State University

AL-KAIMARI, BASSEM
Assoc. Professor, Biology
B.S., University of Jordan
M.A., Governor’s State University

ALLEN, DEBORAH
Assoc. Professor, Radiologic Technology
A.T.S., Cuyahoga Community College
B.S., Franklin University
M.S., Capella University

ALLOTTA, PAULA
Asst. Professor, Chemistry
B.S., Eastern Michigan University
Ph.D, Northwestern University

ALTOSE, AARON
Asst. Professor, Mathematics
B.S., Washington University
M.S., Cleveland State University

ARENDT, JOSEPH
Asst. Professor, Electronic Engineering
B.S., University of Wisconsin-Madison
M.S., The Ohio State University
Ph.D., The Ohio State University

ARSENAULT, STACY
Asst. Professor, Medical Laboratory Technology
B.S., Pennsylvania State University

ARTHUR, CHANDRA
Asst. Professor, Business Administration
B.A., Keuka College
M.B.A., Eastern University
M.A.F.M., Keller Management School

ASSILY, RANIA
Asst. Professor, History
B.A., John Carroll University
M.A., Cleveland State University

AUSTIN, ERIN L.
Asst. Professor, EET/IT
B.S., Case Western Reserve University
M.S., Case Western Reserve University
M.S., Cleveland State University

B .............

BADAL, JAMES
Asst. Professor, English
B.A., Western Reserve University
M.A., Western Reserve University
Ph.D., Case Western Reserve University

BAJDA, ANDREW
Asst. Professor, Business Administration
A.A., Lorain County Community College
B.S., Bowling Green State University
M.B.A., Baldwin Wallace College

BANKS SR., ROBERT
Professor, Chemistry/Physical Science
B.A., Western Reserve University
M.Ed., Cleveland State University

BARBER, FRANK
Asst. Professor, Business Administration
B.B.A., Kent State University
M.B.A., Kent State University

BARKER, JUDITH
Professor, Psychology
B.A., Cleveland State University
M.A., Cleveland State University

BARNARD, KEVIN
Asst. Professor, Emergency Medical Technology
A.A.S., The Ohio State University
B.S., The Ohio State University

BARNES, KOLLEEN
Asst. Professor, Court Reporting & Captioning
B.S., Empire State College
M.Ed., Grand Canyon University

BASNAYAKA, PUNYA
Asst. Professor, Mechanical Engineering
B.S., University of Peradeniya
M.S., University of South Florida
Ph.D., University of South Florida

BECKNER, JEAN
Asst. Professor, Diagnostic Medical Sonography
A.A.S., Cuyahoga Community College
B.S., St. Joseph College of Maine
M.H.S., Nova Southeastern University

BELCHER-NELSON, LISA
Asst. Professor, Counseling
B.S., Ohio University
M.S., University of Akron

BELLE, NATALIE
Assoc. Professor, Physician Assistant
A.S.S., Northern Virginia Community College
B.S., University of Mary Washington
M.S., George Washington University
M.D., Howard University

BENINGTON, MELANIE
Asst. Professor, Nursing
B.S.N., Chamberlain College of Nursing
M.S.N., Chamberlain College of Nursing

BENNETT, MIRIAM
Professor, Media Arts & Studies
B.A., Oberlin College
M.A., University of Iowa
M.F.A., University of Iowa

BENTLEY, CONTAE
Asst. Professor, Counseling
B.S., Ohio University

M.Ed., Ohio University

BERG, KEVIN
Asst. Professor, Counseling
B.S., Bowling Green State University
M.S., Bowling Green State University
M.S., Cleveland State University

BERLINGERI, ANGELA
Asst. Professor, Visual Communication & Design
B.A., Calif. College of Arts & Crafts
M.F.A., Kent State University

BERNATOWICZ, DAVID
Assoc. Professor, History
B.A., Gannon University
M.A., Duquesne University

BIGGERS, KRISTINE
Asst. Professor, Nursing
B.S.N., Malone University
M.S.N., University of Akron

BISHOP, IRIS
Assoc. Professor, Counseling
B.A., Case Western Reserve University
M.A., Case Western Reserve University

BLOOR, CATHERINE
Asst. Professor, Nuclear Medicine
A.A., Lorain County Community College
B.S., Siena Heights University

BOLDYREFF, ROMAN
Asst. Professor, Biology
B.S., University of West Florida
M.S., University of West Florida

BONGORNO, JOHN
Asst. Professor, Accounting/Business Administration
B.A., John Carroll University
B.S., John Carroll University
M.A., Miami University

BORDERS, ANDREA
Asst. Professor, Counseling
B.S., Wilberforce University
M.A., Kent State University

BORIS, SHARON
Asst. Professor, Counseling
A.A.S., Lorain County Community College
B.S.N., Cleveland State University
M.S.N., South University

BOUIE, CARILYNN
Asst. Professor, Mathematics
B.S., University of Tennessee
M.M., University of Tennessee

BOYD, BRIAN
Asst. Professor, Recording Arts Technology
A.S., Full Sail University
B.S., Kent State University
M.S., Lake Erie College

BOYKO, MICHAEL
Professor, Law Enforcement
A.A.S., Cuyahoga Community College
B.S., University of Akron
M.S., University of Akron
J.D., University of Akron

BRADSHAW, JERRY
Asst. Professor, Nursing
B.S.N., Baldwin-Wallace College
Ph.D., Case Western Reserve University

BRAND, ASHLEE
Assoc. Professor, English
A.S., Genesee Community College
B.A., Slippery Rock University
B.S., Slippery Rock University
M.A., Slippery Rock University

BRATSLAVSKY, ELLEN
Assoc. Professor, Psychology
B.A., Case Western Reserve University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University

BROOK, ELLEN
Assoc. Professor, Mathematics
B.S., Polytechnic Institute of Kharkov
M.S., Kharkov Pedagogical Institute, Ukraine
Ph.D., Kent State University

BROOKS, ANNE KRISTIN
Asst. Professor, Nursing
B.A., Beloit College
B.S.N., Columbia University School of Nursing
M.A., Case Western Reserve University
M.S.N., Columbia University School of Nursing

BROWN, LANI
Assoc. Professor, Counseling
B.S., Ohio University
M.S., University of Akron

BROWN, VALERIE
Professor, Sociology
B.A., Case Western Reserve University
B.S.N., Case Western Reserve University
M.S.N., Case Western Reserve University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University

BRUNSCHWIG, ELAINE
Professor, Biology
B.S., The Ohio State University
Ph.D., Case Western Reserve University

BUCCINI, MARIANNE
Assoc. Professor, Counseling
B.S.W., Marywood College
M.S.W., Marywood College

BUDUSKY, VIOLET
Asst. Professor, Information Technology

B.S., Kent State University
M.Ed., Kent State University

BUSH-JONES, DOSETTE
Asst. Professor, Nursing
B.S.N., Ursuline College
M.S.N., Case Western Reserve University

CAIN SMITH, ANDREA
Asst. Professor, Nursing
A.A., Cuyahoga Community College
B.S.N., Cleveland State University
M.S.N., Indiana Wesleyan University

CALHOUN, SHARON R.
Asst. Professor, Early Childhood Education
B.A., Notre Dame College
M.A., Pacific Oaks College

CAPEK, DENNIS
Asst. Professor, Automotive Technology
A.B., Northwestern Business College

CAPKA, JOHN
Asst. Professor, Accounting
B.S., John Carroll University
M.S., Cleveland State University

CAPRETTA, CHRISTOPHER
Assoc. Professor, Biology
B.S., Cleveland State University
M.S., Cleveland State University
Ph.D., The Ohio State University

CARLUCCI, ALICIA
Asst. Professor, Nursing
B.S.N., Walsh University
M.S.N., Walden University

CARRINGTON, GARY
Professor, Counseling
B.A., Morehouse College
M.Ed., Kent State University
Ph.D., Kent State University

CARTE, REBECCA
Asst. Professor, Spanish
B.A., Ohio University
B.S., Ohio University
M.A., Northern Illinois University
Ph.D., The Ohio State University

CATANESE, KATHLEEN
Professor, Psychology
B.S., John Carroll University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Education Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAVIN, BEVERLY</td>
<td>Asst. Professor, Nursing</td>
<td>B.S.N., Ursuline College, M.S.N., Phoenix University</td>
</tr>
<tr>
<td>CECI, RICHARD</td>
<td>Asst. Professor, Economics</td>
<td>B.A., Youngstown State University, M.A., Youngstown State University</td>
</tr>
<tr>
<td>CHANDRA, NEETA</td>
<td>Asst. Professor, English</td>
<td>B.A., Osmania University, M.A., Osmania University, M.B.A., Cleveland State University</td>
</tr>
<tr>
<td>CHAPLIN, MARDY</td>
<td>Asst. Professor, Paralegal</td>
<td>B.A., Malone College, M.P.A., the Ohio State University, J.D. University of Akron</td>
</tr>
<tr>
<td>CHEN, JIN</td>
<td>Asst. Professor, Mathematics</td>
<td>B.S., Nanjing Normal Univ., M.S., University of Arizona</td>
</tr>
<tr>
<td>CICERCHI, BARBARA</td>
<td>Assoc. Professor, Early Childhood Education</td>
<td>B.A., Ursuline College, M.Ed., Kent State University</td>
</tr>
<tr>
<td>CLARK, SARA</td>
<td>Asst. Professor, English as a Second Language</td>
<td>B.A., Northwestern University, M.A., Cleveland State University</td>
</tr>
<tr>
<td>CLEMENS, HOLLY</td>
<td>Assoc. Professor, Physical Education</td>
<td>B.S., Bowling Green State University, M.Ed., Cleveland State University, Ph.D., Kent State University</td>
</tr>
<tr>
<td>CLEMETSON, DARRELL</td>
<td>Asst. Professor, Respiratory Care</td>
<td>B.S., University of Akron, M.Ed., University of Akron</td>
</tr>
<tr>
<td>COCHRANE, ROBERT</td>
<td>Asst. Professor, Physical Education</td>
<td>B.S., Bowling Green State University, M.S., University of Arizona</td>
</tr>
<tr>
<td>COLEMAN, KAREN</td>
<td>Asst. Professor, Nursing</td>
<td>A.S., Cuyahoga Community College, B.S., University of Phoenix</td>
</tr>
<tr>
<td>COLL-GALLO, ROGER</td>
<td>Professor, Foreign Language/Spanish</td>
<td>B.A., University of Chihuaua, Mexico, M.A., The Ohio State University, Ph.D., University of California, Los Angeles</td>
</tr>
<tr>
<td>CONAWAY MAVROIDIS, CYNTHIA</td>
<td>Asst. Professor, Biology</td>
<td>B.S., Eastern Michigan University, M.S., Cleveland State University</td>
</tr>
<tr>
<td>COOK, BLAKE</td>
<td>Asst. Professor, Art</td>
<td>B.F.A., Edinboro University, M.A., Indiana University of PA</td>
</tr>
<tr>
<td>COX, SUZANNE</td>
<td>Assoc. Professor, Counseling</td>
<td>B.A., West Virginia University, M.A., West Virginia University, Ed. S., University of Kentucky</td>
</tr>
<tr>
<td>CRAIG, STEPHANIE</td>
<td>Asst. Professor, Art</td>
<td>B.A., University of Toronto, B. Ed., The University of British Columbia, M.A., Edinboro University</td>
</tr>
<tr>
<td>CRIDER, DEBORAH</td>
<td>Assoc. Professor, Nursing</td>
<td>B.S.N., Andrews University, M.S.N., University of Phoenix</td>
</tr>
<tr>
<td>CRONIN, JULIA</td>
<td>Asst. Professor, Mathematics</td>
<td>B.S., Baldwin-Wallace College, M.A., The Ohio State University</td>
</tr>
<tr>
<td>CRUICKSHANK, AMY</td>
<td>Asst. Professor, English</td>
<td>B.A., John Carroll University, M.A., John Carroll University</td>
</tr>
<tr>
<td>CUMMINS, JOSEPH</td>
<td>Assoc. Professor, Human Services</td>
<td>B.A., Borromeo College, M.Div., St. Mary Seminary, M.A., University of Akron</td>
</tr>
<tr>
<td>CUSTER, ALEXANDRIA</td>
<td>Asst. Professor, Biology</td>
<td>B.A., Cleveland State University, M.S., University of Akron</td>
</tr>
<tr>
<td>CZEKAJ, VERONICA</td>
<td>Asst. Professor, Accounting</td>
<td>B.B.A., Baldwin Wallace College, M.B.A., Myers University</td>
</tr>
<tr>
<td>DAUS, VICTORIA</td>
<td>Asst. Professor, Accounting</td>
<td></td>
</tr>
</tbody>
</table>

**D.**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Education Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>DALTON, ARELIA</td>
<td>Asst. Professor, Counseling</td>
<td>B.A., Cleveland State University, M.Ed., Cleveland State University, M.B.A., University of Akron</td>
</tr>
<tr>
<td>DALTON, JOSLYN</td>
<td>Asst. Professor, Health Information Management</td>
<td>B.S., The Ohio State University</td>
</tr>
<tr>
<td>DAUS, VICTORIA</td>
<td>Asst. Professor, Nursing</td>
<td></td>
</tr>
</tbody>
</table>
DAVIS, JEANETTE
Asst. Professor, Counseling
B.A., Ursuline College
M.Ed., Kent State University

DAVIS, MICHELLE
Asst. Professor, Earth Science
B.A., University of Akron

DIETZ, JENNIFER
Asst. Professor, Medical Assisting
A.A., Cuyahoga Community College
B.S., Cleveland State University

DIGIAMPietro, LORRIE
Asst. Professor, English
B.S., California State University
M.A., San Francisco State University

DIRITSKY, IRENE
Asst. Professor, Human Services
A.A., Cuyahoga Community College
B.A., Ursuline College
M.A., Case Western Reserve University

DISTLER, ANNE
Assoc. Professor, Chemistry
B.S., University of Notre Dame
Ph.D., Michigan State University

DIXON, SHIRIN
Asst. Professor, English as a Second Language
B.A., University of Akron
M.A., School for International Training

DOHERTY, NANCY
Asst. Professor, Chemistry
B.S., Dartmouth College
Ph.D., California Institute of Technology

DONOVAN, LISA
Asst. Professor, Early Childhood Education
B.S., Ohio University
M.S., Ohio University

DOUGHTEN, SHARON
Asst. Professor, Dietetic Technology
B.A., Notre Dame College of Ohio
M.S., Kent State University

DRAVIAM, SUPRIYA
Asst. Professor, English
B.Ed., Osmania University, India
B.A., Osmania University, India
M.A., Central University, India
M.S., Case Western Reserve University

DUKES, PHYLLIS
Professor, Counseling
B.S., Central State University

EASLEY, SHAWN
Assoc. Professor, Political Science
B.A., Case Western Reserve University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University

EGAN, KRISTIN
Asst. Professor, Mathematics
B.S., Wittenberg University
M.S., John Carroll University

ELLIS, ROBERT
Asst. Professor, Theatre/Speech
B.A., North Adams State College
M.A., Kent State University
M.F.A., University of Florida

ELMORE GREEN, JENNA
Asst. Professor, Nursing
B.S.N., Ursuline College
M.S.N., Cleveland State University

EMRICH, KELLIE
Assoc. Professor, Business Administration
B.A., Bowling Green State University
M.A., Case Western Reserve University

ENOS, STEPHEN
Asst. Professor, Music
B.M., Berklee College of Music
M.M., University of Akron

ERMLICH, JANE
Asst. Professor, Nursing
A.S.N., Lorain Community College
B.S.N., Cleveland State University
M.S.N., Walden University

EVSEEV, ANATOLI
Assoc. Professor, English as a Second Language
B.A., Leningrad State University
M.A., Leningrad State University
Ph.D., Leningrad State University

FABRIZI, RHONDA
Asst. Professor, English
B.A., Baldwin-Wallace College
M.A., Louisiana State University

FALES, VALERIE
Asst. Professor, English
A.A., Lakeland Community College
B.A., John Carroll University
M.A., John Carroll University

FELL, JOSEPH
Asst. Professor, Paralegal Studies
B.S., Case Western Reserve University
B.A., Case Western Reserve University
J.D., Cleveland State University

FLATT, MICHAEL
Asst. Professor, Sociology
B.A., Cleveland State University
M.A., Cleveland State University
Ph.D., Case Western Reserve University

FLORENCKI, MICHELLE
Asst. Professor, Dental Hygiene
A.A.S., Cuyahoga Community College
B.S., University of Akron
M.Ed., Cleveland State University

FOLEY, EDWARD
Professor, Business Administration
A.A., Cuyahoga Community College
B.B.A., Cleveland State University
M.B.A., Cleveland State University
Ed.D., Olivet Nazarene University

GAITER, LATOIA
Asst. Professor, Nursing
B.A., Baldwin-Wallace College
B.S.N., Cleveland State University
M.S.N. Walden University

GARDNER, JAMES
Assoc. Professor, Automotive Technology
A.T.S., Cuyahoga Community College
B.S., Myers University
M.S., Florida State University
Ph.D., Cleveland State University

GATICA, NORMA
Assoc. Professor, Chemistry
B.S., UNT, Argentina
M.S., UNS, Argentina
M.A., State University of N.Y., Buffalo
Ph.D., State University of N.Y., Buffalo

GAW, MICHELE
Asst. Professor, Hospitality Management Center
A.A., University of Cincinnati & Cleveland State University
B.A., Tiffin University

GEIGER, MARGE
Professor, English
B.A., D'Youville College
M.A., John Carroll University
Ph.D., Case Western Reserve University

GERBER, CLARISSA
Asst. Professor, Art
B.A., Alfred University
M.F.A., Michigan State University

GERDING, ALAN
Asst. Professor, Psychology
A.A., Cuyahoga Community College
B.A., Case Western Reserve University
M.A., East Carolina University
GLASENER, KRISTINE
Asst. Professor, Mathematics
B.S.E., Youngstown State University
M.Ed., John Carroll University
M.A., John Carroll University

GLATT, PAUL
Asst. Professor, Hospitality Management Center
B.S., University of Arizona
M.M.H., Cornell University

GOULANDRIS, KAREN
Asst. Professor, Early Childhood Education
A.A., Cuyahoga Community College
A.S., Cuyahoga Community College
B.S., Cleveland State University
M.Ed., Cleveland State University

GREEN, SHARLENE
Assoc. Professor, Art
B.F.A., Kent State University
M.F.A., Miami University

GREENE, TRACY
Asst. Professor, English
B.A., Cleveland State University
M.A., Cleveland State University

GROMEK, THERESA
Asst. Professor, English
B.A., John Carroll University
M.A., John Carroll University

GUNNERSON, DOUGLAS
Assoc. Professor, Accounting
B.S., Olivet Nazarene University
M.S., University of Akron
Ph.D., Cleveland State University, Marshall College of Law

HANSEN-POLCAR, LOIS
Professor, Chemistry
A.A., Cuyahoga Community College
B.S., Cleveland State University
M.S., Cleveland State University
Ph.D., Cleveland State University

HARDMAN, PAMELA
Professor, English
A.B., Glenville State College
M.A., Ohio University
Ph.D., Ohio University

HARIK-WILLIAMS, NAHLA
Assoc. Professor, Psychology
B.A., Case Western Reserve University
M.A., University of Akron
Ph.D., University of Akron

HARTZELL, WILLIAM
Asst. Professor, Recording Arts & Technology
B.S., Valparaiso University
M.M., New York University

HAWKINS, CHRISTOPHER
Assoc. Professor, Counseling
B.A., Cleveland State University
M.Ed., Cleveland State University
Ph.D., Cleveland State University

HEER, SUNITA
Asst. Professor, English
B.A., Baldwin Wallace College
M.A., Cleveland State University

HEIDENREICH, JAMES
Asst. Professor, Electrical/Electronic Engineering Technology
A.S., Cuyahoga Community College
B.S.T., Cleveland State University
M.C.I.S., Cleveland State University

HEINLEN, KATHLEEN
Assoc. Professor, Counseling
B.A., Indiana University
M.Ed., Cleveland State University
Ph.D., Cleveland State University

HENDRICK, ROBERTA
Asst. Professor, English as a Second Language
B.A., University of Illinois
Ph.D., University of Chicago

HILEY, DEREK
Asst. Professor, Mathematics
B.S., University of Toledo
M.A., University of Toledo

HILL, KIMBERLY
Asst. Professor, English
B.A., Cleveland State University
M.A., Kent State University

HNAT, MARGARET
Asst. Professor, English
B.A., California State University
HOLLAND, CYNTHIA
Professor, Psychology
B.A., Case Western Reserve University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University

HOLLOWELL, SR., MIEKEL
Asst. Professor, Information Technology
A.A., University of Toledo
B.S., Baldwin Wallace College
M.S., University of Phoenix

HOLSWORTH, JR., RICHARD
Asst. Professor, Music
B.M., Berklee College of Music
M.M., Cleveland State University

HORTON, MARY JANE
Professor, Philosophy/Religious Studies
B.A., Baldwin Wallace College
M.A., Cleveland State University
M.A., Ashland Theological Seminary

HOVANEC, MARY
Professor, History
B.A., Case Western Reserve University
M.A., University of Chicago

HREPIC, SILVANA
Assoc. Professor, Foreign Language
B.A., Cleveland State University
M.A., Cleveland State University

HROVAT, JENNIFER
Asst. Professor, Counseling
B.A., Denison University
M.A., John Carroll University

HUANG, WEI
Professor, Counseling
B.A., Guangxi Institute for Nationalities, China
M.Ed., Millersville University
Ph.D., Kent State University

INDRIOLO, LEILA
Asst. Professor, Counseling
B.A., University of Toledo
M.S.S.A., Case Western Reserve University

JACKSON, MARK
Asst. Professor, Spanish
B.A., Oakland University
M.A., Wayne State University

JAHAMI, YASSER
Assoc. Professor, Radiography
A.S., Cuyahoga Community College

JENKINS, CATHLEEN
Professor, Biology

JENNINGS, PETER
Asst. Professor, Library
B.A., Cleveland State University
M.L.S., Kent State University

JIMISON, DONNA
Assoc. Professor, Medical Assisting
A.D.N., Gadsden Community College
M.S.N., Case Western Reserve University

JOHNSON, BRIAN
Asst. Professor, Humanities
B.A., California State University
M.A., California State University
Ph.D., University of Massachusetts

JOHNSON, CLARENCE
Professor, Mathematics
B.S., Case Western Reserve University
M.S., Cleveland State University
Ph.D., Cleveland State University

JOHNSON, EMHONTA
Asst. Professor, Biology
B.S., University of Toledo
Ph.D., University of Toledo

JOHNSON, ROBERT
Assoc. Professor, Counseling
B.A., Kent State University
M.Ed., Kent State University
Ph.D., Capella University

JONES, DAVID
Asst. Professor, Physical Education
B.Ed., University of Queensland
M.Ed., University of Queensland

JUKIEWICZ, DENIECE
Asst. Professor, Nursing
A.S.N., Kent State University
B.S.N., Kent State University
M.S.N., Kent State University

KAMEL, HAIDY
Assoc. Professor, Chemistry
B.A., Suez Canal University
Ph.D., University of Mississippi

KANGAS, SHIRLEY
Professor, Biology
B.S., Kent State University
M.S., John Carroll University

KANIESKI, GEORGE
Asst. Professor, English
B.S., John Carroll University
M.A., John Carroll University

KARAC, MIRA
Asst. Professor, Mathematics
B.S., University of Akron
M.S., University of Akron

KASCHUBE, CURTIS
Asst. Professor, Mathematics
B.A., Cleveland State University
M.A., Kent State University

KASUBOSKI, STEPHANIE
Asst. Professor, English as a Second Language
B.A., University of Delaware
M.A., University of Delaware

KAZMIER, RACHEL
Asst. Professor, English
B.A., California State University of Fullerton
M.A., California State University of Fullerton

KELLEY, COURTNEY
Assoc. Professor, Psychology
B.A. Wittenberg University
M.A., Bowling Green State University
Ph.D., Bowling Green State University

KELLY, ROBIN
Asst. Professor, Marketing/Business Administration
B.A., Bradley University
M.B.A., American Graduate School of International Management
Ph.D. International School of Management (France)

KENNEY, MICHAEL
Asst. Professor, Chemistry
B.S., St. John's University
M.S., The George Washington University
Ph.D., Iowa State University

KEREZY, JOHN
Assoc. Professor, Journalism/Mass. Comm.
B.A., Wabash College
M.A., The Ohio State University

KINSELLA, CHRISTOPHER
Asst. Professor, History
B.A., Saint Xavier University
M.A., DePaul University

KOCHE, JOSEPH
Asst. Professor, Biology
B.S., Waynesburg University
M.S., Indiana University of Pennsylvania

KOMARA, LINDA
Assoc. Professor, Nursing
A.A.S., Lakeland Community College
B.S., Ursuline College
M.S., Walden University

KONDIK, KEVIN
Asst. Professor, Philosophy
B.S., Cleveland State University
M.S., Ohio University

KOVACIC, DIANA
Asst. Professor, Nursing
B.S.N., Case Western Reserve University
M.S.N., Missouri State University

KOWALCZYK, TOMASZ
Professor, Biology
B.S., Uniwersytet Warszawski (Poland)
Ph.D., Akademia Medyczna w Lublinie (Poland)

KREWANS, JULIA
Assoc. Professor, Psychology
A.B., University of Michigan
M.A., Case Western Reserve University
Ph.D., The Ohio State University

KRUEGER, JEN
Assoc. Professor, Captioning and Court Reporting
A.A., Academy of Court Reporting
B.S., Empire State College
M.Ed., Grand Canyon University

KUNTZ, KEVIN
Assoc. Professor, Counseling
B.A., University of Akron
M.A.Ed., University of Akron

LAFERTY, ERIC
Asst. Professor, English
B.A., Radford University
M.A., Radford University

LANE III, WILLIAM
Asst. Professor, Engineering
A.A., Cuyahoga Community College
B.S., Cleveland State University
M.S., Cleveland State University

LANIER, LINDA
Asst. Professor, Counseling
B.A., University of Akron
M.Ed., Kent State University

LAUER, ANNA
Asst. Professor, Library
B.A., Cleveland State University
M.L.S., Kent State University

LEASURE, JAMES
Asst. Professor, Information Technology
B.S., Kent State University
M.S., University of Illinois

LEHNERT, MARGRET
Asst. Professor, Biology
B.S., College of Mount St. Joseph
M.S., University of Florida
Ph.D., Clemson University

LEIDICH, STEVEN
Assoc. Professor, Biology
B.S., Bowling Green State University
Ph.D., University of Illinois, Urbana-Champaign

LEMAYSTER, JARED
Asst. Professor, Biology
B.S., Kent State University
LEONARD, MAUREEN  
Asst. Professor, Hospitality Management  
B.A., John Carroll University

LEVIN, DANIEL  
Assoc. Professor, Visual Communication & Design  
B.F.A., Rochester Institute of Technology  
M.F.A., Vermont College

LICHNIAK, JAMES  
Asst. Professor, Physician Assistant  
B.S., Case Western Reserve University  
P.A., University of Alabama, Birmingham  
P.D.M., Ohio College of Podiatric Medicine

LIPINSKI, BRADLEY  
Asst. Professor, Philosophy  
A.A., Lakeland Community College  
B.A., Cleveland State University  
M.A., Cleveland State University  
J.D., Cleveland-Marshall College of Law

LIPUMA, SAMUEL  
Assoc. Professor, Philosophy  
B.A., University of Dayton  
M.A., University of Dayton

LOEW, JUSTIN  
Asst. Professor, Nursing  
A.A., Lakeland College  
B.A., Cleveland State University  
M.A., Cleveland State University

LOHWATER, SUSAN  
Assoc. Professor, English as a Second Language  
B.A., Portland State University  
M.A., The Ohio State University  
M.A., University of Findlay  
Ph.D., The Ohio State University

LONDON, RICHARD  
Asst. Professor, Biology  
A.A.S., Florida Keys Community College  
B.S., Antioch College  
M.S., University of Michigan

LONG, DAVID  
Assoc. Professor, English  
B.A., Kent State University  
M.A., Kent State University

LONGRICH, MICHAEL  
Asst. Professor, Automotive Technology  
A.A.S., Macomb Community College  
B.A., University of Cincinnati  
M.Ed., Cleveland State University

LOSNECK, MONICA  
Asst. Professor, Nursing  
B.S.N., Kent State University  
K.S.N., Kent State University

LOWELL, JEFFERY  

Asst. Professor, English  
B.A., Gettysburg College  
M.A., The Ohio State University

LUCA, GENEVIEVE  
Asst. Professor, Sports & Exercise Studies  
B.S., Miami University  
M.S., Kent State University

LYBARGER, JENNIFER  
Asst. Professor, Counseling  
B.A., Miami University  
M.Ed., Cleveland State University

LYON, THOMAS  
Asst. Professor, History/Political Science  
B.A., John Carroll University  
M.A., John Carroll University

LYONS, KEITH  
Professor, Information Technology  
B.S., Kent State University  
M.A., Kent State University  
Ph.D., Nova Southeastern University

MAHLAY, IRYNA  
Asst. Professor, Mathematics  
B.A., Case Western Reserve University  
M.A., The Ohio State University

MALBERTI, SHELLY  
Asst. Professor, Nursing  
B.S.N., University of Phoenix  
M.S.N., Walden University

MALECKAR, REBECCA  
Asst. Professor, Law Enforcement  
B.S.Ed., Cleveland State University  
J.D., Cleveland-Marshall College of Law

MALONE, JOHN  
Asst. Professor, Information Technology  
B.B.A., Cleveland State University  
M.C.I.S., Cleveland State University

MANNERS, DEANNA  
Asst. Professor, Hospitality Management Center  
A.S., Cuyahoga Community College  
B.A., Tiffin University

MARTIN, CYNTHIA  
Assoc. Professor, Foreign Language-French  
B.A., Northwestern University  
M.A., Middlebury College  
Ph.D., Middlebury College

MARTIN, DIANA  
Assoc. Professor, Diagnostic Medical Sonography  
A.A.S., Lorain County Community College  
B.S., The Ohio State University

MASSARI, DEBORAH  
Professor, Mathematics  
B.S., Mount Union College
M.S., University of Akron
Ed.D., Nova Southeastern University

MCAVY, KATHRYN
Professor, Business Administration
B.A., Baldwin-Wallace College
M.B.A., John Carroll University
M. Ed., Cleveland State University
Ph.D., Cleveland State University

MCCARRATH, MICHAEL
Asst. Professor, Mathematics
A.S., Lakeland Comm. College
B.A., Cleveland State University
M.A., University of Kentucky

MCDOWELL, ANNETTE
Asst. Professor, Early Childhood Education
A.A., Cuyahoga Community College
B.S., Cheyney University of Pennsylvania
M.Ed., Cleveland State University

McGUNIA, SERITA
Asst. Professor, Mathematics
B.S., Central State University
M.S., Cleveland State University

McNATT, DONNA
Asst. Professor, Mathematics
B.S., Malone College
M.Ed., Delta State University
M.S., University of Akron

MEIMARIS, MAUREEN
Asst. Professor, Nursing
A.A., Cuyahoga Community College
B.S., Malone College
M.S., Walden University

MELNICK, DAVID
Asst. Professor, Counseling
B.A., Cleveland State University
M.A., Cleveland State University

MENSAH, ANGELA
Asst. Professor, Speech Communications
A.A., Delta College
B.S., Ferris State University
M.S., Western Michigan University
Ph.D., Bowling Green State University

MEOLA, SUZANNE
Asst. Professor, Visual Communication & Design
B.F.A., University of Akron

MERICKSKY, ATHENA
Asst. Professor, English
B.A., Mount Union College
M.A., Cleveland State University

MIKLAW, PAUL
Asst. Professor, Art
B.A., Bowling Green State University
M.A., Cleveland State University

MILAM, LINDSAY
Asst. Professor, English
B.A., Baldwin-Wallace College
M.A., University of Toledo

MILLER, JUSTIN
Asst. Professor, Philosophy
B.S., Portland State University
M.A., Cleveland State University

MORGANSTEN, BENJAMIN
Asst. Professor, English
B.A., University of Michigan
M.A., University of Tennessee

MORGANSTEN, SARAH
Asst. Professor, Visual Communications & Design
A.A.B., Cuyahoga Community College
B.S., Cleveland State University

MOTLEY, DEBRA
Asst. Professor, American Sign Language
B.A., Cleveland State University
M.Ed., Western Maryland College

MUN, SEONG-AE
Assoc. Professor, Art
B.F.A., Ewha Womans University
M.F.A., Rhode Island School of Design

NAGORNEY, SUSAN
Asst. Professor, Mathematics
B.S., Case Western Reserve University
M.A., Cleveland State University

NAGY, MARGUERITE
Asst. Professor, Accounting
B.A., Notre Dame College
B.A., Baldwin-Wallace College
M.A., University of Akron
M.B.A., Baldwin-Wallace College

NARDEOCHIA, DAVID
Asst. Professor, Counseling
B.A., Kent State University
M.Ed., Kent State University

NEEL, PAUL
Assoc. Professor, English
B.A., Towson University
M.A., Case Western Reserve University
Ph.D., Kent State University

NELSON, AMY
Asst. Professor, Nursing
B.S.N., University of Toledo
M.S.N., Walden University

NICKENS, SHAWN
Asst. Professor, Counseling
B.A., College of Wooster
M.S.S.A., Case Western Reserve University

NICOPOLIS, MICHELLE
Professor, Counseling
B.A., Hiram College
M.A., Ball State University
Ph.D., Cleveland State University

NYE, SHAD
Asst. Professor, Physical Education
B.A., Baldwin-Wallace College
M.Ed., Cleveland State University

OCHI, CHRISTIAN
Asst. Professor, Manufacturing
Adv. Dipl. Tech. Institute, Germany
B.S., Norfolk State University
M.S., Central Missouri State University

OCHS, KIMBERLY
Asst. Professor, Biology
B.S., Clarion University
M.S., Virginia Commonwealth

OKOCHA, CHRISTIE
Professor, English
B.Ed., University of Ibadan, Nigeria
M.A., Cleveland State University
J.D., Cleveland Marshall College of Law

ORR, TRACY
Asst. Professor, Information Technology
B.S., Cuyahoga Community College
B.S., Dyke College
M.Ed., Cleveland State University

OSBORN, STACI
Asst. Professor, Mathematics
B.A., Lake Superior State University
M.A., Western Michigan University

OSTROSKE, JOHN
Asst. Professor, Information Technology
B.S., Cleveland State University
M.B.A., Case Western University

OVERFIELD, DANIEL
Asst. Professor, Library
B.A., Ohio University
M.S., Drexel University

PACK, DANNY
Assoc. Professor, Electrical/Electronic Engineering Technology
B.S.E.T., Cleveland State University
M.S.I.E., Cleveland State University

M.S.E.E., Cleveland State University

PANZA, JOHN
Asst. Professor, English
B.A., John Carroll University
M.A., John Carroll University

PARAMESWARAN, VANITHA
Assoc. Professor, Mathematics
B.A., Bharathiar University
M.A., Avinashilingam Deemed University
M.A.P., Avinashilingam Deemed University

PECK, ANDREA
Asst. Professor, Speech Communications
B.A., University of Michigan
M.A., Kent State University

PERRY, FREDERICK
Professor, Theatre/Television
B.A., University of California
M.A., University of Arizona
Ph.D., University of Colorado

PETCAVAGE, SHEILA D.
Assoc. Professor, Business Administration
B.A., Baldwin-Wallace College
M.B.A., Baldwin-Wallace College

PHILLIPS, CHRISTINE
Asst. Professor, Physical Education
B.S., Kent State University
M.Ed., Cleveland State University

PICKENS, TONISHA
Asst. Professor, Counseling
B.A., Ohio University
M.Ed., Ohio University

PICKETT, MICHELE
Assoc. Professor, Business Administration
B.S., Case Western Reserve University
M.B.A., Northeastern University
Ph.D., Capella University

PIERCE, MATTHEW
Asst. Professor, English as a Second Language
B.S., Florida International University
M.S., Florida International University
Ed.D., Florida International University

PIERO, MIKE
Asst. Professor, English
B.A., Cuyahoga Community College
B.A., The University of Akron
M.A., John Carroll University

POSEY, SAMANTHA
Asst. Professor, Counseling
B.S., Bowling Green State University
M.S., Kent State University
Ph.D., University of Akron

POWERS, TRISTA
Asst. Professor, English
B.A., Mount Union College  
M.A., Carnegie Mellon University

PRESTON, WILLIAM  
Assoc. Professor, Biology  
B.S., John Carroll University  
M.S., John Carroll University

PRIMUTH, ERIC  
Assoc. Professor, Accounting  
B.B.A., Cleveland State University  
M.S.A., Kent State University  
M.B.A., Kent State University

RANKINS, MICHELLE  
Asst. Professor, English  
B.A., Kent State University  
M.A., Cleveland State University

RASEL, JOHN  
Asst. Professor, Library  
B.A., West Virginia Wesleyan College  
M.A., Eastern Illinois University  
M.L.I.S., Kent State University

REDLES, DAVID  
Assoc. Professor, History  
B.A., Penn State University  
M.A., Penn State University  
Ph.D., Penn State University

REED, JOHIE  
Asst. Professor, Business Administration  
A.A., Cuyahoga Community College  
A.A.B., Cuyahoga Community College  
B.B.A., Tiffin University  
M.S., Case Western Reserve University  
M.Ed., Cleveland State University

REED, TIFFANIE  
Asst. Professor, Sociology  
B.A., Cleveland State University  
M.A., Cleveland State University

RELYEA, AMY  
Asst. Professor, Mathematics  
B.S., Miami University  
M.S., Miami University

REYES, SUZANNE  
Asst. Professor, English  
B.A., John Carroll University  
M.A., John Carroll University

RIFICI, LOUIS  
Asst. Professor, Environmental Health & Safety  
B.S., Bowling Green State University  
M.S., Virginia Polytechnic Institute

RILEY, TABBY  
Asst. Professor, Diagnostic Medical Sonography  
A.S., Cuyahoga Community College  
B.S., University of Akron

ROBERTS, GOLDIE  
Asst. Professor, Information Technology  
A.A., Cuyahoga Community College  
B.S., Cleveland State University  
M.S., Cleveland State University  
Ph.D., Cleveland State University

RODIN, CATHERINE  
Profesor, History  
B.A., Cleveland State University  
M.A., Cleveland State University  
Ph.D., Cleveland State University

ROKICKY, CATHLEEN  
Assoc. Professor, Mathematics  
B.A., Iona College  
M.A., University of Delaware

ROWAN, MICHAEL  
Assoc. Professor, Biology  
B.S., John Carroll University  
M.S., The Ohio State University  
Ph.D., The Ohio State University

ROY, COLEEN  
Asst. Professor, Library  
B.S., Taylor University  
M.L.S., Kent State University

RUBIN, JEFFREY  
Asst. Professor, Pharmacy Technology  
B.S., Ohio Northern University  
Pharm.D., Ohio Northern University

RYLAND, MARK  
Asst. Professor, Electroneurodiagnostic Technology  
B.S., Kent State University  
M.A., Kent State University

SANDERS, DESIREE  
Asst. Professor, Nursing  
A.A., Huron School of Nursing  
B.S., University of Akron  
M.S., Walden University
M.A., Indiana Wesleyan

SCALONE, JANIS
Asst. Professor, English as a Second Language
B.A., Penn State University
B.S., Slippery Rock University
M.Ed., University of Pittsburgh

SCALONE, LISA
Asst. Professor, Mathematics
B.S., University of Akron
M.S., University of Akron

SCHAER, TED
Assoc. Professor, Automotive Technology
A.A.S., Cuyahoga Community College

SCHLAEFER, LUKE
Asst. Professor, English
B.A., Franciscan University Steubenville
M.A., University of Dallas
Ph.D., Kent State University

SEATON, KIRA
Asst. Professor, Music
B.M., Ohio University
M.M., Ohio University

SEBOLD, D. DAVID
Asst. Professor, Electrical/Electronic Engineering Technology
B.A., Cleveland State University

SHARMA, PRABHAT
Asst. Professor, Massotherapy/Biology
B.S., University of Delhi
M.S., Jiwaji University
M.D., Our Lady of Fatima
Ph.D., Jiwaji University

SHEARER, MELANIE
Assoc. Professor, Medical Assisting
A.S., Ohio College of Massotherapy
B.S., Kent State University
M.S., Cleveland State University

SHELTON, PATTY
Asst. Professor, Mathematics
B.S., Ursuline College
M.S., University of Akron

SHEPPARD, COLIN
Asst. Professor, Mathematics
B.S., University of Florida
M.A., St. John’s College
M.A.T., University of Florida

SHIRILLA, ROBERT
Asst. Professor, Sociology
B.A., Baldwin-Wallace College
M.A., University of Akron

SIEGEL, DEBRA
Asst. Professor, Nursing
B.S.N., University of Cincinnati

M.S., University of Minnesota

SIERK, DAVID
Asst. Professor, English
B.A., Cleveland State University
M.A., Cleveland State University

SILVER, SONJA
Assoc. Professor, Political Science
B.A., University of Virginia
M.B.A., Washington University
Ph.D., Temple University

SILK, MICHAEL
Asst. Professor, Information Technology
A.A.B., Cuyahoga Community College
B.A., Mount Union College
M.A., Case Western Reserve Univ.

SKOP, JENNIFER
Assoc. Professor, English
B.A., Youngstown University
M.A., Youngstown University

SKOWRONSKI, SUSAN
Asst. Professor, Information Technology
B.B.A., Kent State University
M.S., University of Akron

SMITH, BRENDAN
Asst. Professor, Massotherapy
B.S., The Ohio State University

SNELL MASTERSO, HEATHER
Professor, Mathematics
B. Phil., Miami University
M.A., Tufts University
M.A., Kent State University
Ph.D., Kent State University

SOTO-SCHWARTZ, MELISSA
Asst. Professor, History
B.A., University of California-Irvine
M.A., University of Wisconsin-Madison

SOUTHER, STACEY
Assoc. Professor, Psychology
B.S., Heidelberg College
M.A., University of Toledo

SPEITCH, JOAN
Assoc. Professor, Mathematics
B.A., Otterbein College
M.S., University of Akron

STADY, KELLY
Asst. Professor, Mathematics
B.S., University of New Mexico
M.S., University of New Mexico

STANSBERRY, PATRICK
Asst. Professor, English
A.S., Cuyahoga Community College
B.A., Cleveland State University
M.A., Cleveland State University

STEFANOVIC, SHARON
*Asst. Professor, Physics*
B.S.E., Case Western Reserve University
M.S., University of Akron
M.A., Kent State University

STELE, RACHEL
*Assoc. Professor, Sociology*
B.A., University of Notre Dame
M.A., University of Toledo

STEWART III, LEMUEL
*Asst. Professor, Counseling*
B.S., Cleveland State University
M.S., Case Western Reserve University
Ph.D., Cleveland State University

STOTEBSERY, BRENDA
*Asst. Professor, Mathematics*
B.S., Cleveland State University
M.A., John Carroll University

STRONG, LINDA
*Assoc. Professor, Nursing*
R.N., Fairview General Hospital School of Nursing
M.S.N., University of Akron

STROUP, DAVID
*Asst. Professor, Mathematics*
A.A., Lorain County Community College
B.A., Kent State University
B.S., Cleveland State University
M.S., University of Akron

SULZER, JENNIFER
*Asst. Professor, Nursing*
B.A., Kent State University
A.S.N., Lorain Community College
B.S.N., Ohio University
M.S.N., Ohio University

SUSBAUER, KIMBERLEY
*Asst. Professor, Hospitality Management*
B.S., Bowling Green State University
M.Ed., Cleveland State University

SWEENEY, CASANDRA
*Assistant Professor, English*
B.A., Cleveland State University
M.A., DePaul University

SWEENEY, PATRICIA
*Asst. Professor, Counseling*
B.A., Cleveland State University
M.Ed., Cleveland State University

TATOVIC, BRANISLAV

THAKKAR, BHAVNA
*Asst. Professor, Psychology*
B.A., University of Bombay
M.A., University of Bombay

THOMAS, JOHN
*Assoc. Professor, Veterinary Technology*
D.V.M., The Ohio State University

THOMPSON, MARY
*Assoc. Professor, Library*
B.A., Bowling Green State University
M.L.I.S., Kent State University

THOMPSON, ZENORA
*Asst. Professor, Nursing*
B.S.N., Ashland University
M.S.N., University of Phoenix

TIRALAPURAM, VINITA
*Asst. Professor, Information Technology*
A.A., Pragnya College
B.A., St. Pious College
M.A., Sikkim Manipal University

TISCHLER, JOAN
*Asst. Professor, Dental Hygiene*
B.A., The Ohio State University
M.A., Cleveland State University

TOBIN, KERRY
*Asst. Professor, Philosophy*
B.A., Adelphi University
M.A., Cleveland State University

TORGUV, ALEXANDER
*Asst. Professor, Mathematics*
B.S., University of Haifa
M.S., University of Haifa

TROCHE, HOLLY
*Asst. Professor, Veterinary Technology*
B.A., College of Wooster

T. . . . . . . . . .
*Assoc. Professor, Information Technology*
B.S., Heidelberg College
M.B.A., Case Western Reserve University
M.S., NOVA Southeastern University

TATALOVIC, BRANISLAV

...
D.V.M., The Ohio State University

TSARUKYANOVA, IRYNA
Asst. Professor, Biology
M.S., Odessa National University (Ukraine)
Ph.D., Zablotny Institute of Microbiology and Virology (Ukraine)
Ph.D., Cleveland State University

TUMA, JEFFREY
Asst. Professor, Philosophy
B.S., Walsh College
M.A., Cleveland State University
J.D., Cleveland State University

TURNER, NINA
Asst. Professor, History
A.A., Cuyahoga Community College
B.A., Cleveland State University
M.A., Cleveland State University

U. . . . . . . . .
UGRAN, ANGELA
Asst. Professor, Political Science
B.A., Baldwin-Wallace College
M.P.A., Bowling Green State University
M.A., Kent State University

V. . . . . . . . .
VAIDYA, ELIZABETH
Asst. Professor, Biology
B.A., Transylvania University
Ph.D., University of Cincinnati College of Medicine

VANPELT, BRIAN
Asst. Professor, Mathematics
B.S., University of Akron
M.S., University of Akron

VARHEGYI, GEZA
Asst. Professor, Biology
A.S., Cuyahoga Community College
B.S., Cleveland State University
M.S., Cleveland State University
Ph.D., Cleveland State University

VINESKY, DEBORAH
Asst. Professor, Nursing
B.S.N., University of Akron
M.S.N., Chamberlain College

W. . . . . . . . .
WALSH, MARTIN
Asst. Professor, Information Technology
B.S., John Carroll University
M.B.A., University of Phoenix

WALTON, DOTTIE
Asst. Professor, Mathematics
B.S., East Tennessee State University
M.S., Middle Tennessee State University

WARD, MARY
Asst. Professor, English
B.S., Kent State University

M.A., Kent State University

WASHINGTON, KENNETH
Asst. Professor, Mathematics
B.S., University of Florida
M.A., University of Florida

WATTERS, ELIZABETH
Asst. Professor, Early Childhood Education
B.S., The Ohio State University
M.S., The Ohio State University

WAUGH, DONYA
Asst. Professor, Psychology
B.A., Case Western Reserve University
M.A., Cleveland State University

WAYNE, JONATHAN
Assoc. Professor, Visual Communication & Design
B.F.A., Cleveland Institute of Art
M.F.A., Maine College of Arts

WEBB, TERRY
Asst. Professor, Counseling
A.A., Ashland Theological Seminary
M.S., Ashland Theological Seminary

WEGLIAN, EMILY
Professor, Anthropology
B.A., Miami University
M.A., University of Minnesota
Ph.D., University of Minnesota

WEISFELD, MATT
Assoc. Professor, Information Technology
B.S., Miami University
M.S., Bowling Green State University
M.B.A., Baldwin-Wallace College

WEISSMAN, NANCY
Professor, Library
B.S., The Ohio State University
M.L.S., Kent State University
Ph.D., Kent State University

WHETSEL, WILLIAM
Asst. Professor, Visual Communication & Design
B.F.A., University of Cincinnati

WHITE, ROBYN
Assoc. Professor, Sociology
B.A., University of Arkansas
M.A., University of Arkansas

WICKLEY, PETER
Assoc. Professor, Biology
B.S., Grand Valley State University
Ph.D., Kent State University
Ph.D., Michigan State University

WILKINS, MICHAEL
Assoc. Professor, Mathematics
B.S., John Carroll University
M.S., Baldwin Wallace College
M.S., Ohio University

WILLIAMS, CASSANDRA
Asst. Professor, Counseling
B.S., Bowling Green University
M.S., Cleveland State University
Ph.D., Kent State University

WILLIAMS, DERRICK
Asst. Professor, Speech Communications
B.A., Upper Iowa University
M.A., University of Northern Iowa
Ph.D., Southern Illinois University

WILLIAMS, ERICK
Asst. Professor, Mathematics
B.S., Youngstown State University
M.S., Youngstown State University

WILLIAMS, JONATHAN
Asst. Professor, Physics
B.S., University of Alabama
M.S., University of Alabama
Ph.D., University of Alabama

WILLIAMS, KENNETH
Asst. Professor, Massotherapy
B.A., Kent State University
Ph.D., Life University

WILLIAMS, TODD
Asst. Professor, Business Administration
B.S.B.A., University of Akron
M.B.A., University of Akron

WILLIAMSON, GAYLE
Assoc. Professor, English
B.A., Adrian College
M.F.A., Bowling Green State University

WILSON, DEBRA
Asst. Professor, Nursing
B.S.N., Ursuline University
M.S.N., University of Phoenix

WILSON, KENNETH
Asst. Professor, English
B.S., Slippery Rock University
M.A., Slippery Rock University

WINDAHL, KIRSTEN
Asst. Professor, English as a Second Language
B.A., University of Michigan
M.A., Cleveland State University

WINSTON, BARBARA
Assoc. Professor, Counseling
B.A., Bowling Green State University
M.Ed., Cleveland State University

WOLKEN, CHRISTINE
Assoc. Professor, Art
B.A., John Carroll University
M.A., John Carroll University

Ph.D., Case Western Reserve University

WONG, KY-WAI
Asst. Professor, Hospitality Management
B.S., University of California
Certification, Le Cordon Bleu

Y. . . . . . .
YATES-KONZEN, KIRSTEN
Asst. Professor, English
A.A., William Rainey Harper College
B.A., University of Iowa
M.A., University of Cincinnati

YOUNG, JR., HENRY
Assoc. Professor, Speech Communications
A.A., Cuyahoga Community College
B.S., Cleveland State University
M.A., Cleveland State University

YUNKER, ANNE MARIE
Assoc. Professor, Biology
B.S., Cornell University
Ph.D., Michigan State University

Z. . . . . . .
ZAGATA, MELISSA
Asst. Professor, English
B.A., John Carroll University
M.A., John Carroll University

ZAMBETTI, ADAM
Assoc. Professor, Counseling
A.A., Cuyahoga Community College
A.S., Cuyahoga Community College
B.S., University of Akron
M.S., University of Akron
M.Ed., University of Akron
Ed.D., Nova Southeastern University

ZATKO, FRANK
Asst. Professor, Biology
B.S., Xavier University
Ph.D., Case Western Reserve University

ZEHNDER, CARA
Asst. Professor, Nursing
B.S.N., Kent State University
M.S.N., Kent State University

ZELEZNIAK, THERESA P.
Asst. Professor, English
B.A., Cleveland State University
M.A., Cleveland State University

ZINNER, ELLIOTT
Assoc. Professor, Speech Communications
B.S., State University of New York (Geneseo)
M.A., Ohio University
Ph.D., Case Western Reserve University

ZOLDESSY, BRIAN
Asst. Professor, Theatre Arts
B.F.A., Long Island University
M.F.A., California State University
ARCHIVES

Previous catalogs are available for viewing on Tri-C's public website catalog page. (http://www.tri-c.edu/college-catalog)
INDEX

N
.Net Programming, Post-Degree Professional Certificate ........................................... 238

#
10K Small Businesses (ZSBI) ......................................................................................... 363
3D Animation, Short-Term Certificate ........................................................................ 326
3D Design, Short-Term Certificate ................................................................................ 327
3D Digital Design & Manufacturing Technology, Certificate of Proficiency .......... 253

A
A+ Computer Maintenance (ZACM) ............................................................................. 363
About Cuyahoga Community College ........................................................................ 11
Academic Information .................................................................................................. 17
Academic Pathways ...................................................................................................... 107
Academic Support Services .......................................................................................... 20
Accounting (ACCT) .................................................................................................... 363
Accounting, Associate of Applied Business ................................................................ 113
Accreditation and Institutional Memberships ............................................................... 15
Administrative Office Systems, Associate of Applied Business Degree .................. 117
Administrative Specialist, Certificate of Proficiency .................................................. 169
Admissions .................................................................................................................... 70
Adult Diploma Program (ZADP) .................................................................................. 365
Advanced EMS Training ............................................................................................ 351
Advanced Law Enforcement (ZLAW) ........................................................................ 366
Advanced Massage Therapy, Short-Term Certificate ................................................. 262
Advanced Trng Corrections (ZCOR) ............................................................................ 369
American Sign Language (ASL) .................................................................................. 369
Anthropology (ANTH) .................................................................................................. 370
Applied Industrial Technology (AIT) ........................................................................... 371
Applied Industrial Technology (Bricklaying & Allied Crafts), Certificate of Proficiency 119
Applied Industrial Technology (Bricklaying & Allied Crafts), Associate of Applied Science 118
Applied Industrial Technology (Bricklaying) (ATBL) .................................................... 372
Applied Industrial Technology (Building Construction), Short-Term Certificate .......... 120
Applied Industrial Technology (Carpentry), Associate of Applied Science ................. 121
Applied Industrial Technology (Carpentry) (ATCT) ..................................................... 374
Applied Industrial Technology (Cement Masonry), Associate of Applied Science ...... 123
Applied Industrial Technology (Cement Masonry) (ATCM) ....................................... 376
Applied Industrial Technology (Communication Transport Systems), Associate of Applied Science 125
Applied Industrial Technology (Communication Transport Systems) (ATCW) ........... 377
Applied Industrial Technology (Construction Tending and Hazardous Material Abatement), Associate of Applied Science ........................................ 128
Applied Industrial Technology (Construction Tending and Hazardous Material Abatement) (ATLB) .............................................................. 379
Applied Industrial Technology (Drywall Finishing), Associate of Applied Science ........ 130
Applied Industrial Technology (Drywall Finishing) (ATDW) .................................... 383
Applied Industrial Technology (Electrical Construction), Associate of Applied Science 132
Applied Industrial Technology (Electrical Construction) (ATEL) .............................. 383
Applied Industrial Technology (Floorlaying), Associate of Applied Science ............. 134
Applied Industrial Technology (Floorlaying) (ATFL) .................................................. 384
Applied Industrial Technology (Glazing), Associate of Applied Science ................. 136
Applied Industrial Technology (Glazing) (ATGL) ....................................................... 386
Applied Industrial Technology (Ironworking), Associate of Applied Science .......... 139
Applied Industrial Technology (Ironworking) (ATIW) ................................................. 386
Applied Industrial Technology (Lifting Technologies), Associate of Applied Science . 141
Applied Industrial Technology (Lifting Technologies) (ATLT) .................................. 388
Applied Industrial Technology (Manufacturing Technology) ................................. 391
Applied Industrial Technology (Manufacturing Technology), Associate of Applied Science 143
Applied Industrial Technology (Millwrighting), Associate of Applied Science .......... 144
Applied Industrial Technology (Millwrighting) (ATMW) ............................................ 393
Applied Industrial Technology (Operating Engineers), Associate of Applied Science .............................................................. 146
Applied Industrial Technology (Operating Engineers) (ATOE) .............................. 395
Applied Industrial Technology (Painting), Associate of Applied Science ................. 149
Applied Industrial Technology (Painting) (ATPT) ....................................................... 396
Applied Industrial Technology (Pipe Driving), Associate of Applied Science .......... 151
Applied Industrial Technology (Pipe Driving) (ATPD) .............................................. 397
Applied Industrial Technology (Pipefitters) (ATPF) ................................................... 398
Applied Industrial Technology (Pipefitting), Associate of Applied Science ............... 153
Applied Industrial Technology (Plumbers) (ATPL) ..................................................... 401
Applied Industrial Technology (Plumbing), Associate of Applied Science ............... 156
Applied Industrial Technology (Sheet Metal Working), Associate of Applied Science .............................................................. 158
Applied Industrial Technology (Sheet Metal Working) (ATSM) ............................ 404
Applied Manufacturing Techs (ZAMT) ................................................................. 406
Archives ....................................................................................................................... 670
### Art (ART)
- Art (ART) ................................................................. 408

### Articulation Agreements
- Articulation Agreements ........................................... 88

### Associate of Arts Degree
- Associate of Arts Degree ........................................... 113

### Associate of Science Degree
- Associate of Science Degree ....................................... 113

### Associate of Science Degree/University Transfer
- Associate of Science Degree/University Transfer .......... 111

### AutoCAD (ZCAD)
- AutoCAD (ZCAD) ...................................................... 412

### Automation Maintenance Technician, Certificate of Proficiency
- Automation Maintenance Technician, Certificate of Proficiency .................................................... 245

### Automotive Maintenance and General Service, Short-Term Certificate
- Automotive Maintenance and General Service, Short-Term Certificate ........................................... 163

### Automotive Technology, Associate of Applied Science
- Automotive Technology, Associate of Applied Science ................................................................. 161

### Automotive Technology (AUTO)
- Automotive Technology (AUTO) ................................ 413

### Automotive Technology, Certificate of Proficiency
- Automotive Technology, Certificate of Proficiency .............................................................................. 162

### B
- Basic Office Skills, Short-Term Certificate ................................................................. 170
- Basic Police Academy ............................................................................................................. 351
- Biology (BIO) .............................................................. 415
- Board of Trustees & Mission, Vision & Values ........................................................................... 8
- Bookkeeping, Certificate of Proficiency ...................................................................................... 115
- Budgeting Certificate .................................................................................................................. 333
- Building Maintenance Technician, Certificate of Proficiency ................................................... 246
- Business ................................................................................................................................. 107
- Business Administration (BADM) .............................................................................................. 418
- Business Management, Associate of Applied Business .............................................................. 163
- Business Management (International Business), Post-Degree Professional Certificate .................. 166
- Business Management with a Concentration in Human Resources Management, Associate of Applied Business ....................................................................................... 164
- Business Management with a Concentration in International Business, Associate of Applied Business ................................................................. 165
- Business Management with a Concentration in Small Business Management, Associate of Applied Business ....................................................................................... 167
- Business Math & Tech (ZBMT) .................................................................................................. 422
- Business Technology, Associate of Applied Business (formerly Administrative Office Systems) ....................................................................................... 168
- Business Technology (BT) ........................................................................................................ 422

### C
- Cancer Registrar, Post-Degree Professional Certificate ................................................................. 221
- Captioning and Cart Providing, Short-Term Certificate ................................................................ 177
- Captioning and Court Reporting, Associate of Applied Business ................................................. 174
- Captioning and Court Reporting (C&CR) ................................................................................... 423
- Captioning and Court Reporting Certified Stenowriting, Certificate of Proficiency ..................... 175
- Captioning and Court Reporting Certified Voicewriting, Certificate of Proficiency ......................... 175
- Career Centers .......................................................................................................................... 79
- Career-Technical Transfer Assurance Guides ................................................................................ 95
- Carpentry, Certificate of Proficiency ............................................................................................ 122
- CDL-B to CDL-A Bridge Course ................................................................................................. 352
- Cement Masonry, Certificate of Proficiency ................................................................................ 352
- Certified Associate in Project Management (CAPM) ................................................................... 333
- Certified Manager of Apartments ............................................................................................... 334
- Chemistry (CHEM) .................................................................................................................... 426
- Child Care Administration, Short-Term Certificate ...................................................................... 199
- Child Development, Short-Term Certificate ................................................................................ 200
- Chinese (CHIN) .......................................................................................................................... 429
- Cisco Academy (ZCIA) ............................................................................................................... 431
- Cisco Network Support Technician ............................................................................................. 334
- Cisco, Short-Term Certificate ....................................................................................................... 205
- Cisco Technical Training Institute .............................................................................................. 335
- Cisco (ZCIS) ................................................................................................................................ 429
- Class A CDL Truck Driver Training ............................................................................................. 352
- Class A or B CDL Refresher Course ............................................................................................ 353
- Class B CDL Accelerated Training .............................................................................................. 353
- Cleveland Codes Tri-C Software Developers Academy ................................................................ 336
- CNC Machining and Composites Manufacturing, Short-Term Certificate .................................... 144
- CNC Technology Certificate Program ........................................................................................ 354
- College Climate and Commitment to Diversity and Affirmative Action ...................................... 11
- College Student Resources (ZGEN) ............................................................................................ 431
- Communication Transport Systems, Certificate of Proficiency .................................................. 126
- Community and Continuing Education ...................................................................................... 13
- Community Health Worker ........................................................................................................ 337
- Comprehensive Certified Professional Medical Coder (CPC) ...................................................... 337
- Comprehensive Professional Medical Coding ~ Online .................................................................. 338
- CompTIA Certified Computer Support Specialist ....................................................................... 339
- Computer Aided Design (CAD) ..................................................................................................... 354
- Computer Maintenance Technology, Certificate of Proficiency ................................................. 206
- Computer Numerical Control (ZCNC) .......................................................................................... 431
- Computer-Aided Drafting (CAD), Certificate of Proficiency ....................................................... 256
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency ..................................... 257
- Conflict Resolution and Peace Studies, Short-Term Certificate .................................................. 179
- Construction Engineering Technology, Associate of Applied Science ......................................... 181
- Construction Engineering Technology (CNST) .......................................................................... 432
- Construction Project Management, Certificate of Proficiency .................................................... 182
- Construction Tending and Hazardous Material Abatement, Certificate of Proficiency .................. 129
- Corporate College ...................................................................................................................... 14
- Counseling ................................................................................................................................. 79
- Course Descriptions .................................................................................................................. 361
- Court Reporting Technologies, Short-Term Certificate ................................................................ 178
Creative Arts ................................................................. 108
Credit for Prior Learning .............................................. 24
Criminal Justice, Associate of Applied Science .......... 183
Criminal Justice (CJ) .................................................. 434
Criminal Justice with a Concentration in Basic Police Academy, Associate of Applied Science ........................................ 184
Criminal Justice with a Concentration in Corrections, Associate of Applied Science .................................................. 185
Criminal Justice with a Concentration in Security Administration, Associate of Applied Science .................................. 186
Cuyahoga Community College Catalog ...................... 8
Cuyahoga Community College Foundation and Alumni Relations .... 81

D
Dance (DANC) ............................................................. 437
Data Analytics (ZDTM) ................................................ 439
Deaf Interpretive Services, Associate of Applied Science ...... 187
Deaf Interpretive Services (DIS) ..................................... 439
Degree and Certificate Program Requirements ................. 25
Dental Hygiene, Associate of Applied Science ............... 189
Dental Hygiene (DENT) ............................................... 441
Diagnostic Medical Sonography, Associate of Applied Science .......... 190
Diagnostic Medical Sonography (DMS) ......................... 443
Diagnostic Medical Sonography with a Concentration in General Sonography, Associate of Applied Science .......... 192
Dietary Management, Certificate of Proficiency ............... 196
Dietetic Technology, Associate of Applied Science .......... 194
Dietetic Technology (DIET) .......................................... 447
Digital Design & Product Innovation, Short-Term Certificate 254
Digital Manufacturing and Product Launch, Short-Term Certificate 255
Disability Services for Students – Access Program ........... 79
Drywall Finishing, Certificate of Proficiency .................. 131

E
Early Childhood Education, Associate of Applied Science 197
Early Childhood Education (ECED) ............................. 449
Earth Science (ESCI) .................................................. 452
Economics (ECON) ..................................................... 453
Education (EDUC) ..................................................... 455
Electrical Construction, Certificate of Proficiency ............ 134
Electrical Technician Certificate of Completion ............... 355
Electrical/Electronic Engineering Technology, Associate of Applied Science .................................................. 201
Electrical/Electronic Engineering Technology (EET) ......... 455
Electrical/Electronic Engineering Technology with a Concentration in Biomedical Engineering, Associate of Applied Science ........................................ 203
Electrical/Electronic Engineering Technology with a Concentration in Computer Networking Hardware, Associate of Applied Science ............. 204
Electrical/Electronic Engineering Technology with a Concentration in Digital Communications, Including RF, Radio Frequency, Associate of Applied Science .......... 207
Electroneurodiagnostic Technology, Associate of Applied Science .......... 208
Electroneurodiagnostic Technology (END) .................... 461
Electronic Engineering Technician, Certificate of Proficiency .......... 202
Emergency Medical Technician-Basic, Short-Term Certificate .......... 214
Emergency Medical Technology, Associate of Applied Science .......... 210
Emergency Medical Technology (EMT) .......................... 463
EMS Training (ZEMS) .................................................. 449

F
Environment (ZENV) .................................................. 470
Environmental, Health and Safety Technology, Associate of Applied Science .................................................. 216
Environmental, Health and Safety Technology, Post-Degree Professional Certificate ............................................. 218
Equivalent Courses .................................................... 638
Event Planning .......................................................... 340
Event Planning, Short-Term Certificate ......................... 230
Exemplar Global Certified/ Plexus ISO 9001:2015 Lead Auditor Training .................................................. 341
Exemplar Global Certified/ Plexus: ISO 9001 Understanding and Internal Auditor Training ............................................. 341

F
Facility Technician ....................................................... 355
Faculty & College Leadership ...................................... 648
Fast-Track Welding Certificate Program ......................... 355
Film (ZFLM) ............................................................... 474
Finance (ZFIN) .......................................................... 474
Financial Management (FIN) ...................................... 475
Fire - Emergency Medical Services, Associate of Applied Science ............................................. 212
Fire Technology, Associate of Applied Science .......... 218
Fire Technology (FIRE) ............................................... 475
Fire Training Academy ............................................... 356
Fire-Advanced Training (ZEFR) .................................... 476
First Year Experience ................................................. 77
FirstEnergy Power Systems Institute PSI, Associate of Technical Study ............................................. 356
Fitness Specialist, Certificate of Proficiency .................... 318
Floorlaying, Certificate of Proficiency ............................ 136
Food and Beverage Operations, Certificate of Proficiency ....... 232
French (FREN) ................................................................. 478
Frontline Manager Certificate Program ........................................ 342

G
Game Design, Short-Term Certificate .............................................. 330
Garden Center, Short-Term Certificate ............................................. 303
General Curriculum Information ................................................... 63
General Nutrition, Certificate of Proficiency .................................. 197
General Studies (GEN) ............................................................... 479
Geography (GEOG) ..................................................................... 480
German (GER) ............................................................................. 481
Glazing, Certificate of Proficiency ................................................ 138
Grading System ........................................................................... 65

H
Health Careers and Nursing ......................................................... 108
Health (HLTH) ........................................................................... 482
Health Information Management Technology, Associate of Applied Science .................................................... 220
Health Information Management Technology (HIM) ...................... 482
Health Information Technology (ZHIT) .......................................... 486
Health Professional Center (ZHIT) ................................................ 486
Health Technology (HTEC) ............................................................ 487
Health Unit Coordinator, Short-Term Certificate .............................. 223
History (HIST) ............................................................................ 487
History of Cuyahoga Community College and the Campuses ........... 11
Home Inspector Training ............................................................. 343
Hospitality ................................................................................. 111
Hospitality Management (HOSP) ................................................... 491
Hospitality Management with a Concentration in Culinary Art, Associate of Applied Business .................. 225
Hospitality Management with a Concentration in Lodging-Tourism Management, Associate of Applied Business ........................................................................... 228
Hospitality Management with a Concentration in Restaurant/Food Service Management, Associate of Applied Business ........................................................................... 231
Human Development (ZHDI) ......................................................... 495
Human Services, Associate of Applied Science .................................. 233
Human Services (HS) .................................................................. 496
Humanities (HUM) ..................................................................... 498

I
Important Phone Numbers .......................................................... 9
Industrial Automation Certificate of Completion ............................ 235
Industrial Maintenance (ZINM) ...................................................... 503
Industrial Management Technology, Certificate of Proficiency ......... 291
Industrial Manufacturing and Construction ...................................... 111
Industrial Welding, Certificate of Proficiency ................................... 247
Information Technology .................................................................. 111

Information Technology - Business Solutions, Associate of Applied Business ................................................................. 235
Information Technology - Networking Software, Associate of Applied Business ................................................................. 237
Information Technology - Networking Software (ITNT) .................... 506
Information Technology - Programming and Development, Associate of Applied Business ................................................................. 239
Information Technology (IT) ......................................................... 503
Information Technology-Business Solutions, Post-Degree Professional Certificate ................................................................. 236
Information Technology-Programming and Development, Post-Degree Professional Certificate ................................................................. 241
Integrated Systems Engineering Technology, Associate of Applied Science ................................................................. 243
Integrated Systems Engineering Technology (ISET) ......................... 507
Interior Decorating, Certificate of Proficiency .................................... 250
Interior Design, Associate of Applied Business .................................. 249
Interior Design (INTD) .................................................................. 509
Internet-Other (ZINT) .................................................................. 511
Introductory Welding, Short-Term Certificate .................................... 248
Ironworking, Certificate of Proficiency ............................................. 140
ISO Training (ZISO) ...................................................................... 499
IT Business/Management (ZMGT) ................................................... 501
IT Design (ZDES) ........................................................................ 502
IT Networking (ZNET) .................................................................. 502
IT Programming (ZPRG) ............................................................... 502
IT Security (ZSCR) ...................................................................... 502
Italian (ITAL) ................................................................................ 511

J
Japanese (JAPN) .......................................................................... 512
Journalism and Mass Communication (JMC) ...................................... 513

K
Knowledge Management (ZKNO) .................................................. 515

L
Laboratory Phlebotomy, Short-Term Certificate ................................ 275
Landscape Contracting, Short-Term Certificate ................................ 304
Landscape Design, Short-Term Certificate ........................................ 305
Landscape Horticulture, Short-Term Certificate ................................ 305
Leadership (ZLDR) ........................................................................ 515
Lean Six Sigma for Health Care: Yellow Belt and Green Belt ............. 343
Lean Six Sigma (ZLSS) .................................................................. 523
Lean Six Sigma: Yellow Belt, Green Belt, Black Belt ......................... 344
Lean (ZLEN) ................................................................................ 523
LeanOhio Boot Camp: Transforming the Public Sector ....................... 345
Legal Administrative Specialist, Certificate of Proficiency .................. 171
<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging Rooms Division, Certificate of Proficiency</td>
<td>230</td>
</tr>
<tr>
<td>Logistics and Distribution (ZLDA)</td>
<td>527</td>
</tr>
<tr>
<td>Machine Tools Operation, Certificate of Proficiency</td>
<td>258</td>
</tr>
<tr>
<td>Mammography, Short-Term Certificate</td>
<td>313</td>
</tr>
<tr>
<td>Manufacturing Industrial Engineering Technology, Associate of Applied Science</td>
<td>251</td>
</tr>
<tr>
<td>Manufacturing Technical Readiness Program</td>
<td>357</td>
</tr>
<tr>
<td>Marketing, Associate of Applied Business</td>
<td>260</td>
</tr>
<tr>
<td>Marketing (MARK)</td>
<td>527</td>
</tr>
<tr>
<td>Massage Therapy, Associate of Applied Science</td>
<td>261</td>
</tr>
<tr>
<td>Massage Therapy, Certificate of Proficiency</td>
<td>263</td>
</tr>
<tr>
<td>Massage Therapy (MT)</td>
<td>528</td>
</tr>
<tr>
<td>Massage Therapy, Post-Degree Professional Certificate</td>
<td>265</td>
</tr>
<tr>
<td>Mathematics (MATH)</td>
<td>531</td>
</tr>
<tr>
<td>Mechanical Engineering Technology, Associate of Applied Science</td>
<td>266</td>
</tr>
<tr>
<td>Mechanical Engineering/Manufacturing Industrial Technology (MET)</td>
<td>536</td>
</tr>
<tr>
<td>Mechatronics, Certificate of Proficiency</td>
<td>247</td>
</tr>
<tr>
<td>Media Arts and Filmmaking, Associate of Applied Business</td>
<td>268</td>
</tr>
<tr>
<td>Media Arts and Filmmaking (Digital Video Editing), Short-Term Certificate</td>
<td>270</td>
</tr>
<tr>
<td>Media Arts and Filmmaking (MARS)</td>
<td>540</td>
</tr>
<tr>
<td>Media Arts and Filmmaking (Motion Graphics), Short-Term Certificate</td>
<td>269</td>
</tr>
<tr>
<td>Medical Administrative Specialist, Certificate of Proficiency</td>
<td>172</td>
</tr>
<tr>
<td>Medical Assisting, Associate of Applied Science</td>
<td>270</td>
</tr>
<tr>
<td>Medical Assisting, Certificate of Proficiency</td>
<td>272</td>
</tr>
<tr>
<td>Medical Assisting (MA)</td>
<td>542</td>
</tr>
<tr>
<td>Medical Billing Specialist, Short-Term Certificate</td>
<td>224</td>
</tr>
<tr>
<td>Medical Laboratory Technology, Associate of Applied Science</td>
<td>274</td>
</tr>
<tr>
<td>Medical Laboratory Technology (MLT)</td>
<td>545</td>
</tr>
<tr>
<td>Microsoft Administrative Professional (MAP) Academy</td>
<td>345</td>
</tr>
<tr>
<td>Microsoft Application (ZMSA)</td>
<td>546</td>
</tr>
<tr>
<td>Microsoft Office Application Specialist, Short-Term Certificate</td>
<td>173</td>
</tr>
<tr>
<td>Military Transfer Assurance Guides</td>
<td>105</td>
</tr>
<tr>
<td>Millwrighting, Certificate of Proficiency</td>
<td>145</td>
</tr>
<tr>
<td>Mobile Application Development, Short-Term Certificate</td>
<td>241</td>
</tr>
<tr>
<td>MS Cert Prof Sys Engineer (ZMCP)</td>
<td>527</td>
</tr>
<tr>
<td>Music (MUS)</td>
<td>548</td>
</tr>
<tr>
<td>Non-Destructive Testing (ZNDT)</td>
<td>554</td>
</tr>
<tr>
<td>Nondestructive Testing (NDT) and Quality Assurance (QA)</td>
<td>357</td>
</tr>
<tr>
<td>Nuclear Medicine, Associate of Applied Science</td>
<td>276</td>
</tr>
<tr>
<td>Nuclear Medicine Technology (NMED)</td>
<td>555</td>
</tr>
<tr>
<td>Nurse Aide Training (ZNAT)</td>
<td>558</td>
</tr>
<tr>
<td>Nursing (Accelerated Track), Associate of Applied Science</td>
<td>280</td>
</tr>
<tr>
<td>Nursing (Access LPN to RN Track), Associate of Applied Science</td>
<td>282</td>
</tr>
<tr>
<td>Nursing, Associate of Applied Science</td>
<td>278</td>
</tr>
<tr>
<td>Nursing (NURS)</td>
<td>558</td>
</tr>
<tr>
<td>Occupational Therapy Assistant Technology, Associate of Applied Science</td>
<td>286</td>
</tr>
<tr>
<td>Occupational Therapy Assisting Technology (OTAT)</td>
<td>559</td>
</tr>
<tr>
<td>Office Operations Management, Certificate of Proficiency</td>
<td>173</td>
</tr>
<tr>
<td>Ohio Transfer Module</td>
<td>88</td>
</tr>
<tr>
<td>Online, Blended, and Distance Learning</td>
<td>68</td>
</tr>
<tr>
<td>Online Professional Development Courses (ZONL)</td>
<td>560</td>
</tr>
<tr>
<td>Operating Engineers, Certificate of Proficiency</td>
<td>148</td>
</tr>
<tr>
<td>Operating Systems/Maintenance (ZOPS)</td>
<td>571</td>
</tr>
<tr>
<td>Operations Engineering Technology, Associate of Applied Science</td>
<td>288</td>
</tr>
<tr>
<td>Operations Engineering Technology (Engineering Management), Associate of Applied Science</td>
<td>290</td>
</tr>
<tr>
<td>Operations Engineering Technology with a Concentration in Automated Manufacturing, Associate of Applied Science</td>
<td>289</td>
</tr>
<tr>
<td>Ophthalmic Medical Assisting, Short-Term Certificate</td>
<td>294</td>
</tr>
<tr>
<td>Optical Technology, Associate of Applied Science</td>
<td>292</td>
</tr>
<tr>
<td>Optical Technology, Certificate of Proficiency</td>
<td>293</td>
</tr>
<tr>
<td>Optical Technology (OPT)</td>
<td>571</td>
</tr>
<tr>
<td>Organizational Strategy &amp; Assessment (ZSTA)</td>
<td>573</td>
</tr>
<tr>
<td>Painting, Certificate of Proficiency</td>
<td>150</td>
</tr>
<tr>
<td>Paralegal Studies, Post-Degree Professional Certificate</td>
<td>296</td>
</tr>
<tr>
<td>Paralegal Studies, Associate of Applied Business</td>
<td>295</td>
</tr>
<tr>
<td>Paralegal Studies (PL)</td>
<td>573</td>
</tr>
<tr>
<td>Paramedic, Certificate of Proficiency</td>
<td>215</td>
</tr>
<tr>
<td>Passenger and School Bus Training</td>
<td>358</td>
</tr>
<tr>
<td>Patient Access Specialist</td>
<td>346</td>
</tr>
<tr>
<td>Patient Navigator, Short Term Certificate</td>
<td>273</td>
</tr>
<tr>
<td>Patient-Care Nursing Assistant</td>
<td>346</td>
</tr>
<tr>
<td>Paying for College</td>
<td>74</td>
</tr>
<tr>
<td>Payroll, Certificate of Proficiency</td>
<td>116</td>
</tr>
<tr>
<td>Performance-Based Programs (ZPBP)</td>
<td>576</td>
</tr>
<tr>
<td>Personal Chef, Certificate of Proficiency</td>
<td>226</td>
</tr>
<tr>
<td>Pharmacy Technician, Certificate of Proficiency</td>
<td>299</td>
</tr>
<tr>
<td>Pharmacy Technology, Associate of Applied Science</td>
<td>297</td>
</tr>
<tr>
<td>Pharmacy Technology (PHM)</td>
<td>577</td>
</tr>
<tr>
<td>Philosophy (PHIL)</td>
<td>578</td>
</tr>
<tr>
<td>Physical Education (PE)</td>
<td>580</td>
</tr>
<tr>
<td>Physical Science (PSCI)</td>
<td>585</td>
</tr>
</tbody>
</table>
Physical Therapist Assisting Technology, Associate of Applied Science 299
Physical Therapist Assisting Technology (PTAT) ............................... 586
Physician Assistant (PA) ................................................................. 588
Physician Assistant, Post-Degree Professional Certificate .......... 301
Physics (PHYS) .............................................................................. 590
Pipefitting, Certificate of Proficiency ............................................. 152
Pipefitting, Certificate of Proficiency ............................................. 155
Plant Science and Landscape Technology, Associate of Applied Science ... 302
Plant Science and Landscape Technology (Landscape Technician), Certificate of Proficiency .......... 306
Plant Science and Landscape Technology (PST) ............................. 591
Plexus AS9100D Understanding and Internal Auditing (Aerospace) .... 347
Plexus Understanding and Internal Auditing for ISO 14001:2015 ........ 347
Plexus: ISO 13485:2016 – Medical Devices Understanding and Internal Auditor ................................................................. 348
Plumbing, Certificate of Proficiency ............................................. 157
Police Academy (ZPOL) ............................................................... 593
Political Science (POL) ................................................................. 593
Polysomnography (Sleep Disorders), Certificate of Proficiency .......... 307
Powered Industrial Truck/Forklift Operator Training ...................... 358
Practical Nursing, Certificate of Proficiency .................................. 284
Practical Nursing (PNUR) ............................................................. 596
Precision Machining Technology 3 (PMT 3) ................................... 359
Private Security Academy ............................................................. 359
Professional Baking, Certificate of Proficiency ............................ 227
Professional Culinary/Cook, Certificate of Proficiency ................. 228
Professional Development ............................................................ 333
Professional Development Institute (ZPDI) .................................. 597
Psychology (PSY) ........................................................................ 599
Public Safety .................................................................................. 111
Purchasing and Supply Management, Associate of Applied Business ... 308
Purchasing and Supply Management, Post-Degree Professional Certificate .... 309
Quality Control, Certificate of Proficiency .................................... 259
Radiography, Associate of Applied Science ................................. 310
Radiography (RADT) ................................................................. 601
Recording Arts & Technology (RAT) ............................................. 605
Recording Arts and Technology, Associate of Applied Science .... 314
Recreation (ZREC) ................................................................. 607
Regional Transportation (ZRTR) ................................................. 607
Registration .................................................................................. 72
Religious Studies (REL) ............................................................... 608
Respiratory Care, Associate of Applied Science ......................... 315
Respiratory Care (RESP) ........................................................... 609
Right Skills Now CNC Operations Program ......................... 359
Russian (RUSS) ........................................................................... 611
Sales (ZSLS) ............................................................................... 612
Science, Technology, Engineering, and Mathematics ................. 112
Sheet Metal Working, Certificate of Proficiency ......................... 160
Sociology (SOC) ................................................................. 612
Spanish (SPAN) ......................................................................... 615
Speech Communication (SPCH) ................................................. 617
Sport and Exercise Studies, Associate of Applied Science .......... 317
Sport and Exercise Studies (SES) ................................................. 619
State-Tested Nurse Aide ............................................................. 349
State-Tested Nurse Aide – Accelerated Program ................. 349
Steelworkers for the Future ......................................................... 360
Sterile Processing and Distribution Technology, Certificate of Proficiency ... 319
Student ID Card, My Tri-C Space, and E-mail ......................... 77
Student Information ................................................................. 77
Student Life ................................................................................. 80
Student Records .......................................................................... 78
Student Rights and Responsibilities ........................................... 83
Student Services .......................................................................... 78
Surgical Technology, Associate of Applied Science ................. 320
Surgical Technology (SURT) .......................................................... 621
Tax Preparation, Certificate of Proficiency ................................ 117
Theatre Arts (THEA) ................................................................. 623
Transfer Assurance Guides .......................................................... 92
Transfer Information ................................................................. 85
Transferring Information ............................................................. 85
Urban Studies (UST) ................................................................. 625
Veterans Affairs .......................................................................... 82
Veterinary Technology, Associate of Applied Science .......... 322
Veterinary Technology (VT) ...................................................... 626
Virtual Office Assistant, Certificate of Proficiency .................... 174
Visual Communication & Design (Graphic Design), Certificate of Proficiency ... 324
Visual Communication & Design (VC&D) ............................... 628
Visual Communication & Design with a Concentration in Graphic Design, Associate of Applied Business ... 323
Visual Communication & Design with a Concentration in Illustration, Associate of Applied Business ............................................................. 325
Visual Communication & Design with a Concentration in Photography, Associate of Applied Business ............................................................. 327
Visual Communication & Design with a Concentration in Web and Interactive Media, Associate of Applied Business ............................................................. 329
Visual Communication and Design (Advertising Design) (VCAD) .......... 630
Visual Communication and Design (Graphic Design) (VCGD) .......... 630
Visual Communication and Design (Illustration) (VCIL) .......... 631
Visual Communication and Design (Photography) (VCPH) .......... 632
Visual Communication and Design (Web and Interactive Media) (VCIM) 634
Voicewriting, Short-Term Certificate ....................................................179

W
Web Application Development, Short-Term Certificate ................. 242
Web Design & Development, Certificate of Proficiency ................. 331
Welcome to Tri-C .................................................................9
Welding Technology, Short-Term Certificate ................................249
Women’s Studies (WST) .........................................................635
Workforce, Community and Economic Development Division .......... 13
Workforce Training ...............................................................351