College Transfer Programs

704.330.2722
www.cpcc.edu
College Transfer Programs

44 - Hour Core - (CAA) ARTS

44 - Hour Core - (CAA) SCIENCE

Associate in Arts (A.A.) (A10100)

Associate in Science (A.S.) (A10400)

Associate in Fine Arts Degree (A.F.A.) (A10200)

Central Piedmont offers three degrees designed for college transfer – the Associate in Arts (A.A. A10100), the Associate in Science (A.S. A10400) and the Associate in Fine Arts (A.F.A. A10200). The A.A. degree emphasizes the liberal arts; the Associate in Science degree emphasizes science and mathematics; the Associate in Fine Arts degree emphasizes art, dance, and music.

The degree programs offer courses comparable to the freshman and sophomore levels at four-year colleges and universities. Students who want to transfer to a senior institution should work with an academic advisor, a student counselor or with a college transfer faculty advisor. These officials will advise college-transfer students on the strategic selection of courses that meet their two-year degree requirements and also, lower division general education requirements at the four-year schools in North Carolina. Because these requirements vary among the four-year schools, students should obtain a current catalog from the 4-year school they plan to attend and discuss their plans with a representative from the given institution.

Students seeking to transfer to one of the UNC system institutions should visit the following web site: www.ga.unc.edu

For More Information

Visit the CPCC website at www.cpcc.edu

Admissions

Students must have a high school diploma or its equivalent. Students must take placement tests in English, reading and, mathematics to enroll in English and mathematics courses.

General Requirements

Students must complete a minimum of 64 semester hours of transfer courses including the required general education courses. A minimum of 21 semester credit hours must be earned at CPCC. 12 of them must be the final credit hours prior to graduation. (Under special circumstances, students are occasionally permitted to take their final course(s) at another institution. These exceptions may be made with the approval of the appropriate academic dean.)

Procedures for Students Desiring a Second Degree

1. The student desiring a second degree informs his/her counselor of his/her intent to receive two associate degrees prior to applying for graduation in the Graduation Office.
2. The counselor evaluates the student’s transcript to determine if additional semester hours/coursework is required.
3. The counselor documents his/her decision on the Advisement Screen of the mainframe with a statement similar to the one below.

“With the completion of all graduation requirements, the student will be eligible for the Associate in Arts (A10100) and the Associate in General Education (A10300) degree.”

4. The student applies for graduation in the Graduation Office, submitting a separate application for each degree sought.
5. A graduation analyst confirms that the counselor has noted the student’s intent on the Advisement Screen and continues with graduation audit process. If no note is found on the Advisement Screen, the graduation analyst informs the student that he/she needs to speak with a counselor before proceeding.

CPCC GENERAL EDUCATION GOALS

Through its general education program, Central Piedmont seeks to provide a high quality of education for its students and to ensure that graduates have the necessary knowledge, skills, and abilities to function effectively in their personal and professional lives.

Central Piedmont Community College defines general education as acquiring and integrating the general knowledge, intellectual skills, attitudes, and experiences needed by an individual to achieve a level of competency appropriate for a two-year college graduate, preparing for advanced work and life-long learning, and functioning more fully as a person and as a member of society.

The following goals identify the essence of a general education. Although some competencies may be achieved primarily through successful completion of particular courses, students should have the opportunity to develop and use many of these skills throughout their programs.

I. READING

Students will demonstrate the ability to obtain meaning from printed, electronic, and graphical resources.

II. COMMUNICATION

Students will effectively communicate both orally and in writing. Students will demonstrate the ability to locate, critically evaluate, and present information.

III. MATHEMATICS

Students will apply mathematical concepts and skills to analyze, manipulate, and interpret quantitative data.

IV. COMPUTER SKILLS

Students will demonstrate the basic computer skills necessary to function in a technological world.

V. CRITICAL THINKING / PROBLEM SOLVING

Students will demonstrate the ability to identify, analyze, question, and evaluate content as a guide to understanding and action.

VI. CULTURAL AWARENESS

Students will demonstrate knowledge of cultural similarities and differences.

VII. SOCIAL / BEHAVIORAL SCIENCES

Students will demonstrate an understanding of the influence of the individual on group behavior and conversely, the influence of the group on the individual.

VIII. NATURAL SCIENCES

Students will demonstrate comprehension of the major steps of the scientific method.
IX. HUMANITIES / FINE ARTS

Students will demonstrate knowledge of the humanities and critical skills in assessing cultural/artistic merit and significance.

X. HEALTH / PHYSICAL EDUCATION

Students will demonstrate knowledge and/or skills of health and physical education. NOTE: This goal does not apply to the Associate in Fine Arts Degree.

College Transfer Degree Requirements

Students must also meet CPCC’s institutional General Education requirements, even if the student elects to participate in the following CAA. In order to meet these requirements the student must elect and complete:

- Communications (COM)
- Technology (CIS/CSC)
- Health and Physical Education (HEA/PED)

Transfer Agreements

Central Piedmont has expanded students’ options to transfer to senior institutions by entering into transfer agreements. The terms of the agreement are limited to the particular institution and may not be applied to other schools. Agreements have been established with the following institutions:

- Belmont Abbey
- Montreat College
- North Carolina A&T University (Fire Protection)
- Pfeiffer University
- Strayer University
- Queens University (Business and Accounting, and Human Services)
- UNC-Charlotte (Teacher Education, Early Childhood, Communication Studies, Journalism)
- Wingate University

For more information contact the Transfer Resource Center at 704.330.6454.

Accelerated Learning Opportunities

CPCC provides students the opportunity for accelerated learning through the following methods: full credit 8-week semester sessions, online courses, telecourses and credit by examination. Students interested in this option should consult their advisor for additional information, and check the CPCC schedule for complete details on course offerings.

For more information

Advisement is offered for this program by contacting Dianne Cates at 704.330.6946.
Comprehensive Articulation Agreement
Comprehensive Articulation Agreement (CAA) 44-HR CORE

The Comprehensive Articulation Agreement is a statewide contract between the North Carolina Community College System and the University of North Carolina. This agreement enables students to complete their 44-hour lower division general education requirements at the community college, also meeting the University equivalents by doing so. There are also fifteen private institutions that are part of the CAA articulation agreement:

- Barton College
- Belk College
- Bennett College
- Campbell University
- Catawba College
- Chowan College
- Gardner-Webb University
- Johnson C. Smith University
- Livingstone College
- Mars Hill College
- Mount Olive College
- Pfeiffer University
- Queens University of Charlotte
- Saint Andrews College
- Wingate University

Who is eligible for CAA status?

Students who have completed all approved CAA college-level courses in North Carolina beginning Fall 1997 or after and earned a minimum grade of C.

Comprehensive Articulation Agreement (CAA)

Quick View of CORE Courses

Liberal Arts Track

The following goals must be met to satisfy the 44-hour General Education Core requirements. Courses must be selected from the list of general education core options for CAA completion.

- English Composition Goal 6 SHC
- Natural Science Goal 8 SHC
- Mathematics Goal 6 SHC
  
  (Students may substitute a quantitative course for three credits of the Mathematics goal.) (Students should verify their math requirements with the 4-year institution of their choice prior to selecting courses for this goal).

- Humanities/Fine Arts Goal 12 SHC
  
  (3 SHC must be in a literature course, 3 SHC must be in a communications course.)

- Social/Behavioral Science Goal 12 SHC
  
  (3 SHC must be in a history course.)

  **SHC Total** 44 SHC

Quick View of CORE Courses

Science Track

- English Composition Goal 6 SHC
- Natural Science Goal 8 SHC
  
  (two course sequence)

- Mathematics Goal 6 SHC
  
  (Students may substitute a quantitative course for three credits of the Mathematics goal.) (Students should verify their math requirements with the 4-year institution of their choice prior to selecting courses for this goal).

- Humanities/Fine Arts Goal 12 SHC
  
  (3 SHC must be in a literature course, 3 SHC must be in a communications course.)

  **SHC Total** 44 SHC

Example of 44-hour CORE (CAA) completion

(2.5 year plan)

First Year

- Fall Semester
  
  ENG 111 Expository Writing 3
  
  MAT 161 College Algebra 3
  
  BIO 111 General Biology I 4
  
  SOC 210 Intro. to Sociology 3

  **SHC Total** 13 SHC

- Spring Semester
  
  ENG 113 Literature-Based Research 3
  
  MAT 263 Brief Calculus 3
  
  BIO 112 General Biology II 4
  
  REL 110 World Religion 3

  **SHC Total** 13 SHC

- Summer Term
  
  PSY 150 General Psychology 3
  
  COM 231 Public Speaking 3

  **SHC Total** 14 SHC

**Total** 44 SHC

Example of 44-Hour Core (CAA) Completion with Developmental Studies Courses

(2-Year Plan)

First Year

- Fall Semester
  
  ENG 080 Writing Foundations 4
  
  RED 080 Intro to College Reading 4
  
  MAT 080 Intermediate Algebra 4
  
  COM 110 Intro to Communications 3

  **SHC Total** 15 SHC

- Spring Semester
  
  ENG 090/090A Composition Strategies 4
  
  RED 090 Improved College Reading 4
  
  MAT 161 College Algebra 3
  
  HIS 131 American History I 3

  **SHC Total** 14 SHC

- Summer Term
  
  ENG 111 Expository Writing 3
  
  SOC 213 Sociology of the Family 3
  
  BIO 110 Principles of Biology 4

  **SHC Total** 10 SHC

**Total** 44 SHC

Second Year

- Fall Semester
  
  ENG 112 Argument-Based Research 3
  
  MAT 263 Brief Calculus 3
  
  HIS 132 American History II 3
  
  ART 111 Art Appreciation 3

  **SHC Total** 12 SHC
**Second Year Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 231 American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 120 Introductory Botany</td>
<td>4</td>
</tr>
<tr>
<td>POL 120 American Government</td>
<td>3</td>
</tr>
<tr>
<td>MUS 110 Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td><strong>SHC Total</strong></td>
<td><strong>13 SHC</strong></td>
</tr>
</tbody>
</table>

**List of General Education CORE Options for CAA Completion**

**Liberal Arts Track**

**GENERAL EDUCATION COURSES (44 SHC)**

**ENGLISH COMPOSITION (6 SHC)**

*Students will only receive credit for one of the following:* ENG 112, ENG 113 OR ENG 114

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 113 Literature-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114 Professional Research &amp; Report</td>
<td>3</td>
</tr>
</tbody>
</table>

**NATURAL SCIENCES (8 SHC)**

**BIOLOGICAL SCIENCES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIO 110 Principles of Biology</td>
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<tr>
<td>BIO 111 General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO 112 General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO 120 Introductory Botany</td>
<td>4</td>
</tr>
<tr>
<td>BIO 130 Introductory Zoology</td>
<td>4</td>
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</table>

**ASTRONOMY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AST 111 Descriptive Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>AST 111A Descriptive Astronomy Lab</td>
<td>1</td>
</tr>
<tr>
<td>AST 151 General Astronomy I</td>
<td>3</td>
</tr>
<tr>
<td>AST 151A General Astronomy Lab</td>
<td>1</td>
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</table>

**CHEMISTRY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 131 Introduction to Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 131A Introduction to Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM 132 Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHM 151 General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHM 152 General Chemistry II</td>
<td>4</td>
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**GEOLOGY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEL 113 Historical Geology</td>
<td>4</td>
</tr>
<tr>
<td>GEL 120 Physical Geology</td>
<td>4</td>
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**PHYSICS**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHY 110 Conceptual Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHY 110A Conceptual Physics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHY 151 College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHY 152 College Physics II</td>
<td>4</td>
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<tr>
<td>PHY 251 General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHY 252 General Physics II</td>
<td>4</td>
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**MATHEMATICS (6 SHC)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MAT 140 Survey of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MAT 161 College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 171 Pre-calculus Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 172 Pre-calculus Trigonometry</td>
<td>3</td>
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<tr>
<td>MAT 175 Pre-calculus</td>
<td>4</td>
</tr>
<tr>
<td>MAT 263 Brief Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MAT 263A Brief Calculus Lab</td>
<td>1</td>
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</tbody>
</table>

**QUANTITATIVE OPTIONS**

**COMPUTER SCIENCE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CIS 110 Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115 Introduction to Programming &amp; Logic</td>
<td>3</td>
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</tbody>
</table>

**STATISTICS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 155 Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAT 155A Statistical Analysis Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

**HUMANITIES/FINE ARTS (12 SHC)**

*Select four courses from at least three of the following discipline areas. At least one course must be a literature course. Only one course may be taken in the communication discipline.*

**ART**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 111 Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ART 114 Art History Survey I</td>
<td>3</td>
</tr>
<tr>
<td>ART 115 Art History Survey II</td>
<td>3</td>
</tr>
<tr>
<td>ART 116 Survey of American Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 117 Non-Western Art History</td>
<td>3</td>
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**COMMUNICATION**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COM 110 Introduction to Communications</td>
<td>3</td>
</tr>
<tr>
<td>COM 120 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM 231 Public Speaking</td>
<td>3</td>
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**DANCE**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DAN 110 Dance Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DAN 211 Dance History I</td>
<td>3</td>
</tr>
<tr>
<td>DAN 212 Dance History II</td>
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**DRAMA**

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DRA 111 Theatre Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DRA 112 Literature of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>DRA 122 Oral Interpretation</td>
<td>3</td>
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**FOREIGN LANGUAGES**

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>FRE 111/181 Elementary French I</td>
<td>4</td>
</tr>
<tr>
<td>FRE 112/182 Elementary French II</td>
<td>4</td>
</tr>
<tr>
<td>FRE 211/281 Intermediate French I</td>
<td>4</td>
</tr>
<tr>
<td>FRE 212/282 Intermediate French II</td>
<td>4</td>
</tr>
<tr>
<td>GER 111/181 Elementary German I</td>
<td>4</td>
</tr>
<tr>
<td>GER 112/182 Elementary German I</td>
<td>4</td>
</tr>
<tr>
<td>GER 211/281 Intermediate German I</td>
<td>4</td>
</tr>
<tr>
<td>GER 212/282 Intermediate German II</td>
<td>4</td>
</tr>
<tr>
<td>SPA 111/181 Elementary Spanish I</td>
<td>4</td>
</tr>
<tr>
<td>SPA 112/182 Elementary Spanish II</td>
<td>4</td>
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<tr>
<td>SPA 211/281 Intermediate Spanish I</td>
<td>4</td>
</tr>
<tr>
<td>SPA 212/282 Intermediate Spanish II</td>
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**HUMANITIES**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HUM 130 Myth in Human Culture</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160 Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 211 Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 212 Humanities II</td>
<td>3</td>
</tr>
<tr>
<td>HUM 220 Human Values and Meaning</td>
<td>3</td>
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</table>

**LITERATURE (one is required)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 231 American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 232 American Literature II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 241 British Literature I</td>
<td>3</td>
</tr>
<tr>
<td>Subject</td>
<td>Course</td>
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<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>ENG 242 British Literature II</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ENG 251 Western World Literature I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ENG 252 Western World Literature II</strong></td>
</tr>
<tr>
<td><strong>MUSIC</strong></td>
<td><strong>MUS 110 Music Appreciation</strong></td>
</tr>
<tr>
<td></td>
<td><strong>MUS 112 Introduction to Jazz</strong></td>
</tr>
<tr>
<td></td>
<td><strong>MUS 213 Opera and Musical Theatre</strong></td>
</tr>
<tr>
<td><strong>PHILOSOPHY</strong></td>
<td><strong>PHI 215 Philosophical Issues I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PHI 220 Western Philosophy I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PHI 221 Western Philosophy II</strong></td>
</tr>
<tr>
<td><strong>RELIGION</strong></td>
<td><strong>REL 110 World Religion</strong></td>
</tr>
<tr>
<td></td>
<td><strong>REL 111 Eastern Religions</strong></td>
</tr>
<tr>
<td></td>
<td><strong>REL 211 Introduction to Old Testament</strong></td>
</tr>
<tr>
<td></td>
<td><strong>REL 212 Introduction to New Testament</strong></td>
</tr>
<tr>
<td></td>
<td><strong>REL 221 Religion in America</strong></td>
</tr>
<tr>
<td></td>
<td><strong>SOCIAL/BEHAVIORAL SCIENCES (12 SHC)</strong></td>
</tr>
<tr>
<td></td>
<td>Select four courses from at least three of the following discipline areas. At least one course must be a history course.</td>
</tr>
<tr>
<td><strong>ANTHROPOLOGY</strong></td>
<td><strong>ANT 210 General Anthropology</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ANT 220 Cultural Anthropology</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ANT 221 Comparative Cultures</strong></td>
</tr>
<tr>
<td><strong>ECONOMICS</strong></td>
<td><strong>ECO 151 Survey of Economics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ECO 251 Principles of Microeconomics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ECO 252 Principles of Macroeconomics</strong></td>
</tr>
<tr>
<td><strong>GEOGRAPHY</strong></td>
<td><strong>GEO 111 World Regional Geography</strong></td>
</tr>
<tr>
<td><strong>HISTORY</strong></td>
<td><strong>HIS 111 World Civilization I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HIS 112 World Civilization II</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HIS 131 American History I</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HIS 132 American History II</strong></td>
</tr>
<tr>
<td><strong>POLITICAL SCIENCE</strong></td>
<td><strong>POL 120 American Government</strong></td>
</tr>
<tr>
<td></td>
<td><strong>POL 210 Comparative Government</strong></td>
</tr>
<tr>
<td></td>
<td><strong>POL 220 International Relations</strong></td>
</tr>
<tr>
<td><strong>PSYCHOLOGY</strong></td>
<td><strong>PSY 150 General Psychology</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PSY 241 Developmental Psychology</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PSY 281 Abnormal Psychology</strong></td>
</tr>
<tr>
<td><strong>SOCIOLOGY</strong></td>
<td><strong>SOC 210 Introduction to Sociology</strong></td>
</tr>
<tr>
<td></td>
<td><strong>SOC 213 Sociology of the Family</strong></td>
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<td></td>
<td><strong>SOC 225 Social Diversity</strong></td>
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</tbody>
</table>
Associate in Arts (A.A.)
COLLEGE TRANSFER
ASSOCIATE IN ARTS DEGREE

Quick View of Associate in Arts Degree Goals (A10100)

Students completing the Associate of Arts college-transfer degree at CPCC must complete the following institutional requirements:

• Communications
• Technology
• Health & Physical Education

ENGLISH COMPOSITION GOAL 6 SHC

NATURAL SCIENCE GOAL 8 SHC

MATHEMATICS GOAL 6 SHC
(Students may substitute a quantitative course for three credits of the mathematics goal.) (Students should verify their math requirements with a 4-yr institution of their choice prior to selecting courses for this goal)

TECHNOLOGY GOAL 3 SHC

HUMANITIES/FINE ARTS GOAL 12 SHC
(Students must substitute a communications course to meet three SHC of the Humanities/Fine Arts goal.) Must have 3 SHC in a literature course

SOCIAL/BEHAVIORAL SCIENCE GOAL 12 SHC

HEALTH AND PHYSICAL EDUCATION 2 SHC

ELECTIVES 15 SHC

TOTAL 64 SHC

Transfer in Arts Diploma (D 10100)

The Transfer Diploma in Arts is awarded for the successful completion of the Associate in Arts (AA) general education core. The general education core includes study in the areas of humanities and fine arts, social and behavioral sciences, natural sciences and mathematics, and English composition.

This diploma serves as an indication that a student has successfully completed the general education core and assists senior institutions in transcript evaluation by avoiding course by course analysis.

Successful completion necessitates a grade of “C” or better in each core course.

Only students transferring without the Associate in Arts degree are eligible for the Transfer Diploma in Arts. Students who have earned the AA are not eligible.

Diploma Awarded

A Transfer in Arts Diploma is awarded by the College upon completion of this program.

Contact Information

The Transfer in Arts program is in the General Studies area. For more information, call 704.330.6506.

Major and Related Courses Requirements

English Composition (6 SHC)
ENG 111 and 112, 113, or 114

Humanities/Fine Arts (12 SHC)
COM 110, 120, or 231; one literature course; and 6 additional humanities/fine arts chosen from approved list.

Social/Behavioral Sciences (12 SHC)
Four courses from at least three of the following discipline areas are required: anthropology, economics, geography, history, political science, psychology, and sociology. At least one course must be a history course.

Natural Sciences/Mathematics (14 SHC)
Natural Sciences (8 SHC): Two courses, including accompanying laboratory work, from the biological and physical disciplines are required.
Mathematics (6 SHC): At least one course in introductory mathematics is required; the other course may be selected from among other quantitative subjects, such as computer science and statistics.

SCH Total 44 SHC

Example of Associate of Arts Plan (2-yr. plan)

First Year Fall Semester
ENG 111 Expository Writing 3
MAT 161 College Algebra 3
HIS 111 World Civilization I 3
FRE 111 Elementary French I 3
FRE 181 French Lab I (Lab Elective) 3
CIS 115 Programming and Logic 3
SHC Total 15

First Year Spring Semester
ENG 112 Argument-Based Research 3
MAT 155 Statistical Analysis 3
MAT 155A Statistical Analysis Lab (Lab Elective) 3
FRE 112 Elementary French II 3
FRE 182 French Lab II (Lab Elective) 3
PSY 150 General Psychology 3
General Elective 3
SHC Total 15

Second Year Fall Semester
COM 110 Intro. to Communications 3
ECO 251 Principles of Microeconomics 3
BIO 110 Principles of Biology 4
Elective credit for previous math & French Labs 3
General Elective * 3
Health/Physical Education 1
SHC Total 17

Second Year Spring Semester
ENG 241 British Literature I 3
ECO 252 Principles of Macroeconomics 3
BIO 130 Introductory Zoology 4
General Elective* 3
General Elective* 3
Health/Physical Education 1
SHC Total 17
Total 64

*Refer to list of Associate of Arts College Transfer Electives.
### Example of Associate of Arts Plan with Developmental Studies Courses

**First Year Fall Semester**
- ENG 090/090A Composition Strategies 4
- MAT 060 Essential Mathematics 4
- RED 090 Improved College Reading 4
- ACA 111 College Student Success (Elective) 3
- HIS 111 World Civilization I 3
- **SHC Total** 15

**First Year Spring Semester**
- ENG 111 Expository Writing 4
- MAT 070 Introductory Algebra 4
- SPA 111 Elementary Spanish I 3
- SPA 181 Spanish Lab I (Lab Elective) 3
- SOC 210 Introduction to Sociology 3
- CIS 110 Introduction to Computers 3
- **SHC Total** 17

**First Year Summer Term**
- ENG 112 Argument-Based Research 3
- MAT 080 Intermediate Algebra 4
- General Elective* 3
- **SHC Total** 10

**Second Year Fall Semester**
- COM 110 Intro. to Communications 3
- PSY 150 General Psychology 3
- MAT 161 College Algebra 3
- BIO 110 Principles of Biology 4
- SPA 112 Intermediate Spanish II 4
- SPA 182 Intermediate Spanish Lab II (Lab Elective) 4
- **SHC Total** 17

**Second Year Spring Semester**
- ENG 231 American Literature I 3
- POL 120 American Government 3
- MAT 263 Brief Calculus 3
- MAT 263A Brief Calculus Lab (Lab Elective) 3
- General Elective*(ACA, Math & Lang. Elective) 4
- HEA 112 First Aid & CPR 2
- **SHC Total** 15

**Second Year Summer Term**
- AST 111 Descriptive Astronomy 3
- AST 111A Descriptive Astronomy Lab 3
- General Elective* 3
- **SHC Total** 10

**Total** = 64

(+ Developmental studies courses)

*Refer to list of Associate of Arts College Transfer Electives.

### List of General Education Core Options for ASSOCIATE in ARTS DEGREE

**ENGLISH COMPOSITION** (6 SHC)
- ENG 112 Expository Writing 3
- ENG 113 Literature-Based Research 3
- ENG 114 Professional Research & Report 3

**NATURAL SCIENCES** (8 SHC)
- BIO 110 Principles of Biology 4
- BIO 111 General Biology I 4
- BIO 112 General Biology II 4
- BIO 120 Introductory Botany 4
- BIO 130 Introductory Zoology 4

**ASTRONOMY**
- AST 111 Descriptive Astronomy 3
- AST 111A Descriptive Astronomy Lab 1
- AST 151 General Astronomy I 3
- AST 151A General Astronomy Lab 1

**CHEMISTRY**
- CHM 131 Introduction to Chemistry 3
- CHM 131A Introduction to Chemistry Laboratory 1
- CHM 132 Organic and Biochemistry 4
- CHM 151 General Chemistry I 4
- CHM 152 General Chemistry II 4

**GEOLOGY**
- GEL 113 Historical Geology 4
- GEL 120 Physical Geology 4

**PHYSICS**
- PHY 110 Conceptual Physics 3
- PHY 110A Conceptual Physics Laboratory 1
- PHY 151 College Physics I 4
- PHY 152 College Physics II 4
- PHY 251 General Physics I 4
- PHY 252 General Physics II 4

**MATHEMATICS** (6 SHC)
- MAT 140 Survey of Mathematics 3
- MAT 141 Mathematical Concepts 3
- MAT 161 College Algebra 3
- MAT 171 Pre-calculus Algebra 3
- MAT 172 Pre-calculus Trigonometry 3
- MAT 175 Pre-calculus 4
- MAT 263 Brief Calculus 3
- MAT 263A Brief Calculus Lab 1
- MAT 271 Calculus I 4
- MAT 272 Calculus 272 4
- MAT 273 Calculus III 4

**QUANTITATIVE OPTIONS**

**COMPUTER SCIENCE**
- CIS 110 Introduction to Computers 3
- CIS 115 Introduction to Programming & Logic 3
### Central Piedmont Community College

#### College Transfer Programs — Associate in Arts, Associate in Science, and Associate in Fine Arts Degrees

**Statistics**
- MAT 155 Statistical Analysis 3
- MAT 155A Statistical Analysis Lab 1

**Humanities/Fine Arts (12 SHC)**
(Select four courses from at least three of the following discipline areas. At least one course must be a literature course. Only one course may be taken in the communication discipline.)

**Art**
- ART 111 Art Appreciation 3
- ART 114 Art History Survey I 3
- ART 115 Art History Survey II 3
- ART 116 Survey of American Art 3
- ART 117 Non-Western Art History 3

**Communication**
- COM 110 Introduction to Communications 3
- COM 120 Interpersonal Communication 3
- COM 231 Public Speaking 3

**Dance**
- DAN 110 Dance Appreciation 3
- DAN 211 Dance History I 3
- DAN 212 Dance History II 3

**Drama**
- DRA 111 Theatre Appreciation 3

**Foreign Languages**
- ASL 111/181 Elementary ASL I 4
- ASL 112/182 Elementary ASL II 4
- ASL 211/281 Elementary ASL I 4
- ASL 212/282 Elementary ASL II 4
- FRE 111/181 Elementary French I 4
- FRE 112/182 Elementary French II 4
- FRE 211/281 Intermediate French I 4
- FRE 212/282 Intermediate French II 4
- GER 111/181 Elementary German I 4
- GER 112/182 Elementary German II 4
- GER 211/281 Intermediate German I 4
- GER 212/282 Intermediate German II 4
- SPA 111/181 Elementary Spanish I 4
- SPA 112/182 Elementary Spanish II 4
- SPA 211/281 Intermediate Spanish I 4
- SPA 212/282 Intermediate Spanish II 4

**Humanities**
- HUM 130 Myth in Human Culture 3
- HUM 160 Introduction to Film 3
- HUM 211 Humanities I 3
- HUM 212 Humanities II 3
- HUM 220 Human Values and Meaning 3

**Literature (one is required)**
- ENG 231 American Literature I 3
- ENG 232 American Literature II 3
- ENG 241 British Literature I 3
- ENG 242 British Literature II 3
- ENG 251 Western World Literature I 3
- ENG 252 Western World Literature II 3

**Music**
- MUS 110 Music Appreciation 3
- MUS 112 Introduction to Jazz 3
- MUS 213 Opera and Musical Theatre 3

**Philosophy**
- PHI 215 Philosophical Issues I 3
- PHI 220 Western Philosophy I 3
- PHI 221 Western Philosophy II 3

**Religion**
- REL 110 World Religion 3
- REL 111 Eastern Religions 3
- REL 211 Introduction to Old Testament 3
- REL 212 Introduction to New Testament 3
- REL 221 Religion in America 3

**Social/Behavioral Sciences (12 SHC)**
(Select four courses from at least three of the following discipline areas. At least one course must be a history course.)

**Anthropology**
- ANT 210 General Anthropology 3
- ANT 220 Cultural Anthropology 3
- ANT 221 Comparative Cultures 3

**Economics**
- ECO 151 Survey of Economics 3
- ECO 251 Principles of Microeconomics 3
- ECO 252 Principles of Macroeconomics 3

**Geography**
- GEO 111 World Regional Geography 3

**History**
- HIS 111 World Civilization I 3
- HIS 112 World Civilization II 3
- HIS 131 American History I 3
- HIS 132 American History II 3

**Political Science**
- POL 120 American Government 3
- POL 210 Comparative Government 3
- POL 220 International Relations 3

**Psychology**
- PSY 150 General Psychology 3
- PSY 241 Developmental Psychology 3
- PSY 281 Abnormal Psychology 3

**Sociology**
- SOC 210 Introduction to Sociology 3
- SOC 213 Sociology of the Family 3
- SOC 225 Social Diversity 3

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**List of Electives for Associate in Arts Degree**

The following CAA College Transfer Elective courses for Associate of Arts Degree completion changes periodically. For the most current list, refer to www.ga.unc.edu

**Academic/College Success Skills**
- ACA 111 College Student Success
- ACA 118 College Study Skills
- ACA 120 Career Assessment

**Arts**
- ART 111 Art Appreciation
- ART 114 Art History Survey I
ART 115 Art History Survey II
ART 117 Non-Western Art History
ART 121 Design I
ART 122 Design II
ART 131 Drawing I
ART 132 Drawing II
ART 135 Figure Drawing I
ART 171 Computer Art I
ART 212 Gallery Assistantship I
ART 213 Gallery Assistantship II
ART 214 Portfolio and Resume
ART 222 Wood Design I
ART 223 Wood Design II
ART 231 Printmaking I
ART 232 Printmaking II
ART 235 Figure Drawing II
ART 240 Painting I
ART 241 Painting II
ART 242 Landscape Painting
ART 243 Portrait Painting
ART 244 Watercolor
ART 246 Metals I
ART 247 Jewelry I
ART 248 Jewelry II
ART 250 Surface Design: Textiles
ART 251 Weaving I
ART 252 Weaving II
ART 260 Photo Appreciation
ART 261 Photography I (Lab. Proc.)
ART 262 Photography II (Lab. Proc.2)
ART 263 Color Photography
ART 271 Computer Art II
ART 281 Sculpture I
ART 282 Sculpture II
ART 283 Ceramics I
ART 284 Ceramics II
ART 285 Ceramics III
ART 286 Ceramics IV
ART 289 Museum Study
ART 288 Studio

ACCOUNTING
ACC 120 Prin of Financial Accounting
ACC 121 Prin of Managerial Accounting

ANTHROPOLOGY
ANT 210 General Anthropology
ANT 220 Cultural Anthropology
ANT 221 Comparative Cultures

AMERICAN SIGN LANGUAGE
ASL 111 Elementary ASL I
ASL 181 ASL LAB I
ASL 112 Elementary ASL II
ASL 182 ASL LAB II
ASL 211 Intermediate ASL I
ASL 281 Intermediate ASL LAB I
ASL 212 Intermediate ASL II
ASL 282 Intermediate ASL LAB II

ASTRONOMY
AST 111 Descriptive Astronomy
AST 111A Descriptive Astronomy Lab

BIOLOGY
BIO 110 Principles of Biology
BIO 111 General Biology I
BIO 120 Introductory Botany
BIO 155 Nutrition
BIO 163 Basic Anatomy and Physiology
BIO 168 Anatomy and Physiology I
BIO 169 Anatomy and Physiology II
BIO 143 Field Biology Minicourse
BIO 145 Ecology
BIO 175 General Microbiology
BIO 243 Marine Biology
BIO 235 Ornithology
BIO 271 Pathophysiology
BIO 272 Cardio-Pulmonary Biology
BIO 275 Microbiology

BUSINESS
BUS 110 Introduction to Business
BUS 115 Business Law I
BUS 228 Business Statistics

CHEMISTRY
CHM 115 Concepts in Chemistry
CHM 115A Concepts in Chemistry Lab
CHM 130 General, Organic & Biochemistry
CHM 130A General, Organic & Biochemistry
CHM 131 Introduction to Chemistry
CHM 131A Introduction to Chemistry Lab
CHM 132 Organic and Biochemistry
CHM 151 General Chemistry I
CHM 152 General Chemistry II
CHM 251 Organic Chemistry I
CHM 252 Organic Chemistry II

COMMUNICATIONS
COM 110 Intro to Communications
COM 111 Voice & Diction I
COM 120 Interpersonal Communications
COM 140 Intercultural Communications
COM 150 Intro. to Mass Communications
COM 231 Public Speaking
COM 232 Election Rhetoric
COM 233 Persuasive Speaking
COM 251 Debate I

COMPUTER SCIENCE
CIS 110 Intro to Communications
CIS 115 Intro to Prog and Logic
CSC 120 Computing Fundamentals I
CSC 130 Computing Fundamentals II
CSC 134 C++ Programming

CRIMINAL JUSTICE
CJC 111 Intro Criminal Justice
CJC 141 Correction
CJC 121 Law Enforcement Operations

DANCE
DAN 110 Dance Appreciation
DAN 211 Dance History I
DAN 212 Dance History II

DRAFTING
DFT 170 Engineering Graphics
DRAMA
DRA 111 Theatre Appreciation
DRA 120 Voice for Performance
DRA 130 Acting I
DRA 131 Acting II
DRA 135 Acting for the Camera I
DRA 136 Acting for the Camera II
DRA 140 Stagecraft I
DRA 141 Stagecraft II
DRA 142 Costuming
DRA 145 Stage Make-Up
DRA 170 Play Production I
DRA 171 Play Production II
DRA 175 Teleplay Production I
DRA 176 Teleplay Production II
DRA 230 Acting III
DRA 231 Acting IV
DRA 270 Play Production III
DRA 271 Play Production IV
DRA 275 Teleplay Production III
DRA 276 Teleplay Production IV

ECONOMICS
ECO 151 Survey of Economics
ECO 251 Principles of Microeconomics
ECO 252 Principles of Macroeconomics

ENGLISH
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Prof Research & Reporting
ENG 125 Creative Writing I
ENG 126 Creative Writing II
ENG 133 Intro to the Novel
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Lit I
ENG 252 Western World Lit II
ENG 271 Contemporary Literature
ENG 273 African-American Lit
ENG 274 Lit by Women
ENG 275 Science Fiction

FRENCH
FRE 111 Elementary French I
FRE 181 French Lab 1
FRE 112 Elementary French II
FRE 181 French Lab 2
FRE 221 French Conversation
FRE 211 Inter French I
FRE 281 French Lab 3
FRE 212 Intermediate French II
FRE 282 French Lab 4

GEOGRAPHY
GEO 111 World Regional Geography
GEO 131 Physical Geography I
GEO 132 Physical Geography II
GEL 113 Historical Geology
GEL 120 Physical Geology
GEL 220 Marine Geology

GERMAN
GER 111 Elementary German I
GER 181 German Lab 1
GER 112 Elementary German II
GER 182 German Lab 2
GER 211 Intermediate German I
GER 281 German Lab 2
GER 212 Intermediate German II
GER 282 German Lab 4
GER 221 German Conversation

HEALTH
HEA 110 Personal Health/Wellness
HEA 112 First Aid and CPR

HISTORY
HIS 111 World Civil I
HIS 112 World Civil II
HIS 131 American History I
HIS 132 American History II
HIS 165 Twentieth-Century World
HIS 221 African-American History
HIS 222 African-American History I
HIS 223 African American His II
HIS 226 The Civil War
HIS 231 Recent American History
HIS 236 North Carolina History

HUMANITIES
HUM 110 Technology and Society
HUM 115 Critical Thinking
HUM 130 Myth in Human Culture
HUM 160 Intro to Film
HUM 211 Hum I
HUM 212 Hum II
HUM 220 Human Values and Meaning

JOURNALISM
JOU 110 Intro to Journalism

MATHEMATICS
MAT 140 Survey of Math
MAT 141 Mathematical Concepts
MAT 141A Mathematical Concepts Lab
MAT 155 Statistical Analysis
MAT 155A Statistical Analysis Lab
MAT 161 College Algebra
MAT 167 Discrete Math
MAT 171 Pr Calc Algebra
MAT 171 Pr Calc Algebra Lab
MAT 172 Pr Calc Trig
MAT 172Pr Calc Trig Lab
MAT 175 Pre Calculus
MAT 263 Brief Calculus
MAT 263A Brief Calculus Lab
MAT 271 Calculus I
MAT 272 Calculus II
MAT 273 Calculus III
MAT 280 Linear Algebra
MAT 285 Differential Equations

MUSIC
MUS 110 Music Appreciation
MUS 111 Fundamentals of Music
MUS 112 Introduction to Jazz
MUS 121 Music Theory I
MUS 122 Music Theory II
MUS 123 Music Composition
MUS 131 Chorus I
MUS 132 Chorus II
MUS 135 Jazz Ensemble I
MUS 136 Jazz Ensemble II
MUS 210 History of Rock Music
MUS 213 Opera and Musical Theatre
MUS 221 Music Theory III
MUS 222 Music Theory IV
MUS 231 Chorus III
MUS 232 Chorus IV
MUS 235 Jazz Ensemble III
MUS 236 Jazz Ensemble IV
MUS 253 Big Band
MUS 263 Jazz Improvisation I
MUS 264 Jazz Improvisation II
MUS 265 Piano Pedagogy
MUS 271 Music History I
MUS 272 Music History II

PHILOSOPHY
PHI 220 Western Philosophy I
PHI 221 Western Philosophy II
PHI 230 Introduction to Logic
PHI 240 Introduction to Ethics

PHYSICAL EDUCATION
PED 113 Aerobics I
PED 117 Weight Training I
PED 122 Yoga I
PED 163 Kayaking – Basic
PED 169 Orienteering
PED 170 Backpacking

PHYSICS
PHY 110 Conceptual Physics
PHY 110A Conceptual Physics Lab
PHY 151 College Physics I
PHY 152 College Physics II
PHY 153 Modern Topics in Physics
PHY 251 General Physics I
PHY 252 General Physics II
PHY 253 Modern Physics

PHYSICAL SCIENCE
PHS 110 Basic Physical Science

POLITICAL SCIENCE
POL 120 American Government
POL 210 Comparative Government
POL 220 International Relations

PSYCHOLOGY
PSY 150 General Psychology
PSY 241 Developmental Psychology
PSY 263 Educational Psychology
PSY 281 Abnormal Psychology

RELIGION
REL 110 World Religions
REL 111 Eastern Religions
REL 211 Intro to Old Testament
REL 212 Intro to New Testament
REL 221 Religion in America

RUSSIAN
RUS 111 Elementary Russian I
RUS 181 Russian Lab I
RUS 112 Elementary Russian II
RUS 182 Russian Lab 2

SOCIOLOGY
SOC 210 Introduction to Sociology
SOC 213 Sociology of the Family
SOC 220 Social Problems
SOC 225 Social Diversity

SPANISH
SPA 111 Elementary Spanish I
SPA 181 Spanish Lab 1
SPA 112 Elementary Spanish II
SPA 182 Spanish Lab 2
SPA 151 Hispanic Literature
SPA 211 Intermediate Spanish I
SPA 281 Spanish Lab 3
SPA 212 Intermediate Spanish II
SPA 282 Spanish Lab 4
SPA 221 Spanish Conversation
Associate in Science (A.S.)
COLLEGE TRANSFER
ASSOCIATE IN SCIENCE DEGREE

Quick View of Associate in Science Degree goals (A10400)

Students completing the Associate of Science college-transfer degree at CPCC must complete the following institutional requirements:

- Communications
- Technology
- Health & Physical Education

**ENGLISH COMPOSITION GOAL** 6 SHC

**NATURAL SCIENCE GOAL** (Two course sequence) 8 SHC

**MATHEMATICS (PRE-CALCULUS min.)** 3 SHC
**HIGHER MATH/QUANTITATIVE GOAL** 3 SHC

**NATURAL SCIENCE/MATH ELECTIVE** 6 SHC

**TECHNOLOGY GOAL** 3 SHC

**HUMANITIES/FINE ARTS GOAL** 9 SHC
(3 SHC must be a communications course. At least 3 SHC must be a literature course.)

**SOCIAL/BEHAVIORAL SCIENCE GOAL** 9 SHC
(At least 3 SHC must be a history course.)

**HEALTH & PE** 1 SHC

**COLLEGE TRANSFER ELECTIVES** 16 SHC

**SHC Total** 64 SHC

Transfer in Science Diploma (D10400)

The Transfer in Science Diploma is awarded for the successful completion of the Associate in Science (AS) general education core. The general education core includes study in the areas of humanities and fine arts, social and behavioral sciences, natural sciences and mathematics, and English composition.

This diploma serves as an indication that a student has successfully completed the general education core and assists senior institutions in transcript evaluation by avoiding course by course analysis.

Successful completion necessitates a grade of “C” or better in each core course.

Only students transferring without the Associate in Science degree are eligible for the Transfer Diploma in Science.

Students who have earned the AS are not eligible.

**Diploma Awarded**

A Transfer in Science Diploma is awarded by the College upon completion of this program.

**Contact Information**

The Transfer in Science program is in the General Studies area. For more information, call 704.330.6505.

Major and Related Course Requirements

**English Composition (6 SHC)**
ENG 111 and 112, 113, or 114

**Humanities/Fine Arts (9 SHC)**
COM 110, one literature course, and one additional course from the following discipline areas are required: art, drama, dance, foreign languages, interdisciplinary humanities, music, philosophy, and religion.

**Social/Behavioral Sciences (9SHC)**
One history course and two additional courses from two of the following discipline areas are required: anthropology, economics, geography, political science, psychology, and sociology.

**Natural Sciences/Mathematics (20 SHC)**
Natural Sciences (8 SHC minimum)
A minimum two-course sequence from the following is required: general biology, general chemistry, or general physics
BIO 111 General Biology I (4 SHC) and
BIO 112 General Biology II (4 SHC)

CHM 151 General Chemistry I (4 SHC) and
CHM 152 College Physics II (4 SHC) or

PHY 151 General Physics I (4 SHC) and
PHY 152 College Physics II (4 SHC) or

PHY 251 General Physics I (4 SHC) and
PHY 252 General Physics II (4 SHC)

Mathematics (6 SHC minimum)
One course in mathematics at the pre-calculus algebra level or above is required; the other course(s) may be higher level mathematics or may be selected from among other quantitative subjects, such as computer science and statistics.

Six additional semester hour credits must be selected from courses designated as Natural Sciences/Mathematics general education transfer courses.

**SHC Total** 44 SHC

Example of Associate in Science Plan

2-Year Plan

**First Year Fall Semester**
ENG 111 Expository Writing 3
PHI 215 Philosophical Issues 3
HIS 131 American History I 3
MAT 171 Pre-calculus Algebra 3
Health/P.E. 1

**SHC Total** 13

**First Year Spring Semester**
ENG 113 Literature Based Research 3
MAT 263 Brief Calculus 3
PSY 150 General Psychology 3
CIS 115 Intro to Prog. and Logic 3
MAT/SCI elective 3

**SHC Total** 15

**First Year Summer Term**
COM 231 Public Speaking 3
College Transfer elective 4

**SHC Total** 7
### Second Year Fall Semester
- ENG 251 Western World Literature I: 3
- College Transfer Elective: 4
- CHM 151 General Chemistry I: 4
- MAT/SCI elective: 3
  
  \[SHC \text{ Total} \quad 14\]

### Second Year Spring Semester
- College Transfer Elective: 4
- GEO 111 World Regional Geography: 3
- CHM 152 General Chemistry II: 4
- College Transfer Elective: 4
  
  \[SHC \text{ Total} \quad 15\]

\[Total \text{ SHC} \quad 64\]

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### Example of Associate in Science Plan with Developmental Studies courses

#### 2.5-Year Plan

#### First Year Fall Semester
- ENG 090/090A Composition Strategies: 4
- MAT 080 Intermediate Algebra: 4
- POL 210 Comparative Government: 3
- CIS 110 Introduction to Computers: 3
- ACA 111 College Student Success: 1 (College Transfer Elect)
  
  \[SHC \text{ Total} \quad 15\]

#### First Year Spring Semester
- ENG 111 Expository Writing: 3
- MAT 171 Pre-calculus Algebra: 3
- COM 110 Intro. To Communication: 3
- Health/P.E. elective: 1
- MAT/SCI elective: 3
- College Transfer Elective: 4
  
  \[SHC \text{ Total} \quad 17\]

#### First Year Summer Term
- ENG 112 Argument Based Research: 3
- College Transfer Elective: 4
- MAT 172 Pre-calculus Trigonometry: 3
  
  \[SHC \text{ Total} \quad 10\]

#### Second Year Fall Semester
- BIO 111 General Biology I: 4
- College Transfer Elective: 4
- MUS 110 Music Appreciation: 3
- HIS 111 World Civilization I: 3
- MAT/SCI elective: 3
  
  \[SHC \text{ Total} \quad 17\]

#### Second Year Spring Semester
- BIO 112 General Biology II: 4
- College Transfer elective: 3
- ENG 231 American Literature: 3
- HIS 112 World Civilization II: 3
- College Transfer Elective: 3
  
  \[SHC \text{ Total} \quad 17\]

\[Total \text{ SHC} \quad 64\]

\[+ \text{ Developmental studies courses}\]

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### List of General Education Core Options for Associate in Science degree

#### ENGLISH COMPOSITION (6 SHC)
Students will only receive credit for one of the following:
- ENG 112 Expository Writing: 3
- ENG 114 Professional Research & Report: 3

#### NATURAL SCIENCES (8 SHC)
- BIO 111 General Biology I: 4
- and
- BIO 112 General Biology II: 4

#### CHEMISTRY
- CHM 151 General Chemistry I: 4
- and
- CHM 152 General Chemistry II: 4

#### PHYSICS
- PHY 151 College Physics I: 4
- and
- PHY 251 General Physics I: 4
- OR
- PHY 152 College Physics II: 4
- and
- PHY 252 General Physics II: 4

#### MATHEMATICS (6 SHC)
(At least one Math course at the college transfer level is required. The other course may be selected from other quantitative subjects such as Computer Information Systems, & Statistics)
- MAT 171 Pre-calculus Algebra: 3
- MAT 172 Pre-calculus Trigonometry: 3
- MAT 175 Pre-calculus: 4
- MAT 263 Brief Calculus: 3
- MAT 263A Brief Calculus Lab: 1
- MAT 271 Calculus I: 4
- MAT 272 Calculus II: 4
- MAT 273 Calculus III: 4

#### QUANTITATIVE OPTIONS

#### COMPUTER SCIENCE
- CIS 110 Introduction to Computers: 3
- CIS 115 Introduction to Programming & Logic: 3

#### STATISTICS
- MAT 155 Statistical Analysis: 3
- MAT 155A Statistical Analysis Lab: 1

#### TECHNOLOGY GOAL (3 SHC)
- CIS 110 Introduction to Computers: 3
- CIS 115 Introduction to Prog. & Logic: 3
- CSC 120 Computing Fundamentals I: 3
- CSC 130 Computing Fundamentals II: 3
- CSC 134 C++ Programming: 3
### HUMANITIES/FINE ARTS (9 SHC)
(Select three courses from at least three of the following discipline areas. At least one course must be a literature course. Only one course may be taken in the communication discipline.)

- **ART**
  - ART 111 Art Appreciation 3
  - ART 114 Art History Survey I 3
  - ART 115 Art History Survey II 3
  - ART 116 Survey of American Art 3
  - ART 117 Non-Western Art History 3

- **COMMUNICATION**
  - COM 110 Introduction to Communications 3
  - COM 120 Interpersonal Communication 3
  - COM 231 Public Speaking 3

- **DANCE**
  - DAN 110 Dance Appreciation 3
  - DAN 211 Dance History I 3
  - DAN 212 Dance History II 3

- **DRAMA**
  - DRA 111 Theatre Appreciation 3

- **FOREIGN LANGUAGES**
  - FRE 111/181 Elementary French I 4
  - FRE 112/182 Elementary French II 4
  - FRE 211/281 Intermediate French I 4
  - FRE 212/282 Intermediate French II 4
  - GER 111/181 Elementary German I 4
  - GER 112/182 Elementary German II 4
  - GER 211/281 Intermediate German I 4
  - GER 212/282 Intermediate German II 4
  - SPA 111/181 Elementary Spanish I 4
  - SPA 112/182 Elementary Spanish II 4
  - SPA 211/281 Intermediate Spanish I 4
  - SPA 212/282 Intermediate Spanish II 4

- **HUMANITIES**
  - HUM 130 Myth in Human Culture 3
  - HUM 160 Introduction to Film 3
  - HUM 211 Humanities I 3
  - HUM 212 Humanities II 3
  - HUM 220 Human Values and Meaning 3

- **LITERATURE (one is required)**
  - ENG 231 American Literature I 3
  - ENG 232 American Literature II 3
  - ENG 241 British Literature I 3
  - ENG 242 British Literature II 3
  - ENG 251 Western World Literature I 3
  - ENG 252 Western World Literature II 3

- **MUSIC**
  - MUS 110 Music Appreciation 3
  - MUS 112 Introduction to Jazz 3
  - MUS 213 Opera and Musical Theatre 3

- **PHILOSOPHY**
  - PHI 215 Philosophical Issues I 3
  - PHI 220 Western Philosophy I 3
  - PHI 221 Western Philosophy II 3

- **RELIGION**
  - REL 110 World Religion 3

### SPEECH/COMMUNICATIONS
(Three SHC in Speech/Communications must be substituted for 3 SHC in the above Humanities/Fine Arts list.)

- COM 110 Introduction to Communications 3
- COM 120 Interpersonal Communication 3
- COM 231 Public Speaking 3

### SOCIAL/BEHAVIORAL SCIENCES (9 SHC)
(Select three courses from at least three of the following disciplines. At least one course must be a history course.)

- **ANTHROPOLOGY**
  - ANT 210 General Anthropology 3
  - ANT 220 Cultural Anthropology 3
  - ANT 221 Comparative Cultures 3

- **ECONOMICS**
  - ECO 151 Survey of Economics 3
  - ECO 251 Principles of Microeconomics 3
  - ECO 252 Principles of Macroeconomics 3

- **GEOGRAPHY**
  - GEO 111 World Regional Geography 3

- **HISTORY**
  - HIS 111 World Civilization I 3
  - HIS 112 World Civilization II 3
  - HIS 131 American History I 3
  - HIS 132 American History II 3

- **POLITICAL SCIENCE**
  - POL 120 American Government 3
  - POL 210 Comparative Government 3
  - POL 220 International Relations 3

- **PSYCHOLOGY**
  - PSY 150 General Psychology 3
  - PSY 241 Developmental Psychology 3
  - PSY 281 Abnormal Psychology 3

- **SOCIOLOGY**
  - SOC 210 Introduction to Sociology 3
  - SOC 213 Sociology of the Family 3
  - SOC 225 Social Diversity 3

### List of General Electives for Associate in Science degree
(The following approved CAA College Transfer Elective Courses for Associate in Science completion changes periodically. For the most current list, refer to www.ga.unc.edu.)

- **ACADEMIC/COLLEGE SUCCESS SKILLS**
  - ACA 111 College Student Success
  - ACA 118 College Study Skills
  - ACA 120 Career Assessment

- **ART**
  - ART 111 Art Appreciation
  - ART 114 Art History Survey I
  - ART 115 Art History Survey II

- **RELIGION**
  - REL 110 World Religion
| ART 111 Non-Western Art History | BIO 155 Nutrition |
| ART 121 Design I | BIO 163 Basic Anatomy and Physiology |
| ART 122 Design II | BIO 168 Anatomy and Physiology I |
| ART 131 Drawing I | BIO 169 Anatomy and Physiology II |
| ART 132 Drawing II | BIO 230 Entomology |
| ART 135 Figure Drawing I | BIO 235 Ornithology |
| ART 171 Computer Art I | BIO 271 Pathophysiology |
| ART 212 Gallery Assistantship I | BIO 275 Microbiology |
| ART 213 Gallery Assistantship II |  |
| ART 214 Portfolio and Resume |  |
| ART 222 Wood Design I |  |
| ART 223 Wood Design II |  |
| ART 231 Printmaking I |  |
| ART 232 Printmaking II |  |
| ART 235 Figure Drawing II |  |
| ART 240 Painting I |  |
| ART 241 Painting II |  |
| ART 242 Landscape Painting |  |
| ART 243 Portrait Painting |  |
| ART 244 Watercolor |  |
| ART 245 Metals I |  |
| ART 246 Metals I |  |
| ART 247 Jewelry I |  |
| ART 248 Jewelry II |  |
| ART 250 Surface Design: Textiles |  |
| ART 251 Weaving I |  |
| ART 252 Weaving II |  |
| ART 260 Photo Appreciation |  |
| ART 261 Photography I (Lab. Proc.) |  |
| ART 262 Photography II (Lab.Proc.2) |  |
| ART 263 Color Photography |  |
| ART 271 Computer Art II |  |
| ART 281 Sculpture I |  |
| ART 282 Sculpture II |  |
| ART 283 Ceramics I |  |
| ART 284 Ceramics II |  |
| ART 285 Ceramics III |  |
| ART 286 Ceramics IV |  |
| ART 289 Museum Study |  |
| ART 288 Studio |  |

**ANTHROPOLOGY**

| ANT 210 General Anthropology |  |
| ANT 220 Cultural Anthropology |  |
| ANT 221 Comparative Cultures |  |

**AMERICAN SIGN LANGUAGE**

| ASL 111 Elementary ASL I |  |
| ASL 181 ASL LAB I |  |
| ASL 112 Elementary ASL II |  |
| ASL 182 ASL LAB II |  |
| ASL 211 Intermediate ASL I |  |
| ASL 212 Intermediate ASL II LAB |  |
| ASL 281 Intermediate ASL I LAB |  |
| ASL 282 Intermediate ASL II LAB |  |

**ASTRONOMY**

| AST 111 Descriptive Astronomy |  |
| AST 111A Descriptive Astronomy Lab |  |

**BIOLOGY**

| BIO 110 Principles of Biology |  |
| BIO 111 General Biology I |  |
| BIO 112 General Biology II |  |
| BIO 120 Introductory Botany |  |
| BIO 130 Introductory Zoology |  |
| BIO 135 Figure Drawing II |  |

**BUSINESS**

| BUS 110 Introduction to Business |  |
| BUS 115 Business Law I |  |

**CHEMISTRY**

| CHM 115 Concepts in Chemistry |  |
| CHM 115A Concepts in Chemistry Lab |  |
| CHM 130 General, Organic & Biochemistry |  |
| CHM 130A General, Organic & Biochemistry |  |
| CHM 131 Introduction to Chemistry |  |
| CHM 131A Introduction to Chemistry Lab |  |
| CHM 132 Organic and Biochemistry |  |
| CHM 151 General Chemistry I |  |
| CHM 152 General Chemistry II |  |
| CHM 251 Organic Chemistry I |  |
| CHM 252 Organic Chemistry II |  |

**COMMUNICATIONS**

| COM 110 Intro to Communications |  |
| COM 111 Voice & Diction I |  |
| COM 120 Interpersonal Communications |  |
| COM 140 Intercultural Communications |  |
| COM 150 Intro. to Mass Communications |  |
| COM 231 Public Speaking |  |
| COM 232 Election Rhetoric |  |
| COM 233 Persuasive Speaking |  |
| COM 251 Debate I |  |

**COMPUTER SCIENCE**

| CIS 110 Intro to Communications |  |
| CIS 115 Intro to Programming and Logic |  |
| CSC 120 Computing Fundamentals I |  |
| CSC 130 Computing Fundamentals II |  |
| CSC 134 C++ Programming |  |

**CRIMINAL JUSTICE**

| CJC 111 Intro Criminal Justice |  |
| CJC 112 Criminology |  |
| CJC 141 Correction |  |

**DRAMA**

| DRA 111 Theatre Appreciation |  |
| DRA 130 Acting I |  |
| DRA 131 Acting II |  |
| DRA 135 Acting for the Camera I |  |
| DRA 136 Acting for the Camera II |  |
| DRA 140 Stagecraft I |  |
| DRA 141 Stagecraft II |  |
| DRA 145 Stage Make-Up |  |
| DRA 170 Play Production I |  |
| DRA 171 Play Production II |  |
| DRA 175 Teleplay Production I |  |
| DRA 176 Teleplay Production II |  |
| DRA 230 Acting III |  |
| DRA 231 Acting IV |  |
| DRA 270 Play Production III |  |
| DRA 271 Play Production IV |  |
| DRA 275 Teleplay Production III |  |
DRA 276 Teleplay Production IV

ECONOMICS
ECO 151 Survey of Economics
ECO 251 Principles of Microeconomics
ECO 252 Principles of Macroeconomics

ENGLISH
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Prof Research & Reporting
ENG 125 Creative Writing I
ENG 126 Creative Writing II
ENG 133 Intro to the Novel
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Lit I
ENG 252 Western World Lit II
ENG 253 The Bible as Literature
ENG 271 Contemporary Literature
ENG 273 African-American Lit
ENG 274 Lit by Women
ENG 275 Science Fiction

FRENCH
FRE 111 Elementary French I
FRE 181 French Lab 1
FRE 112 Elementary French II
FRE 181 French Lab 2
FRE 211 Inter French I
FRE 212 Intermediate French II
FRE 281 French Lab 3
FRE 282 French Lab 4
FRE 221 French Conversation

GEOGRAPHY
GEO 111 World Regional Geography
GEO 131 Physical Geography I
GEO 132 Physical Geography II

GEOLOGY
GEL 113 Historical Geology
GEL 120 Physical Geology
GEL 220 Marine Geology

GERMAN
GER 111 Elementary German I
GER 181 German Lab 1
GER 112 Elementary German II
GER 182 German Lab 2
GER 211 Intermediate German I
GER 281 German Lab 2
GER 212 Intermediate German II
GER 282 German Lab 4
GER 221 German Conversation

HEALTH
HEA 110 Personal Health/Wellness
HEA 112 First Aid and CPR
HEA 120 Community Health

HISTORY
HIS 111 World Civil I
HIS 112 World Civil II

HUMANITIES
HUM 110 Technology and Society
HUM 130 Myth in Human Culture
HUM 160 Intro to Film
HUM 211 Hum I
HUM 212 Hum II
HUM 220 Human Values and Meaning

JOURNALISM
JOU 110 Intro to Journalism

MATHEMATICS
MAT 140 Survey of Math
MAT 141 Mathematical Concepts
MAT 141A Mathematical Concepts Lab
MAT 155 Statistical Analysis
MAT 161 College Algebra
MAT 167 Discrete Math
MAT 171 Pr Calc Algebra
MAT 171A Pr Calc Algebra Lab
MAT 172 Pr Calc Trig
MAT 172A Pr Calc Trig Lab
MAT 175 Pre Calculus
MAT 263 Brief Calculus
MAT 271 Calculus I
MAT 272 Calculus II
MAT 273 Calculus III
MAT 280 Linear Algebra
MAT 285 Differential Equations

MUSIC
MUS 110 Music Appreciation
MUS 111 Fundamentals of Music
MUS 112 Introduction to Jazz
MUS 121 Music Theory I
MUS 122 Music Theory II
MUS 123 Music Composition
MUS 131 Chorus I
MUS 132 Chorus II
MUS 210 History of Rock Music
MUS 213 Opera and Musical Theatre
MUS 221 Music Theory III
MUS 222 Music Theory IV
MUS 231 Chorus III
MUS 232 Chorus IV
MUS 253 Big Band
MUS 263 Jazz Improvisation I
MUS 264 Jazz Improvisation II
MUS 265 Piano Pedagogy
MUS 271 Music History I
MUS 272 Music History II

PHILOSOPHY
PHI 220 Western Philosophy I
PHI 221 Western Philosophy II
PHI 230 Introduction to Logic
PHI 240 Introduction to Ethics

PHYSICAL EDUCATION
PED 113 Aerobics I

CENTRAL PIEDMONT COMMUNITY COLLEGE

College Transfer Programs — Associate in Arts, Associate in Science, and Associate in Fine Arts Degrees
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<thead>
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<th>PED 115 Step Aerobics</th>
<th>ACA 118 College Study Skills</th>
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<td>PED 117 Weight Training I</td>
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<td>PED 122 Yoga I</td>
<td>ACC 120 Prin of Financial Accounting</td>
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<td>PED 163 Kayaking – Basic</td>
<td>ACC 121 Prin of Managerial Accounting</td>
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<td>PED 169 Orienteering</td>
<td>BIO 170 Introductory Microbiology</td>
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<td>PED 170 Backpacking</td>
<td>BUS 116 Business Law II</td>
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<td>BUS 137 Principles of Management</td>
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<td>CHM 121 Foundations of Chemistry</td>
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<td>DAN 225 Choreography I</td>
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<td>DAN 226 Choreography II</td>
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<td>DAN 236 Advanced Ballet I</td>
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<td>DAN 237 Adv Ballet II</td>
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<td>EFL 181 EFL Lab I</td>
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<td>FRE 120 French for the workplace</td>
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<td>HEA 130 Health-Adult Sexuality</td>
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<td>HEA 140 Health-Child Sexuality</td>
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<td>JOU 217 Feature/Editorial Writing</td>
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<td>RED 111 Critical Reading for College</td>
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<td>SPA 120 Spanish for the workplace</td>
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### PHYSICAL SCIENCE

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### PHYSICS

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<th>PHY 110 Conceptual Physics</th>
<th>PHY 110A Conceptual Physics Lab</th>
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<td>PHY 131 Physics - Mechanics</td>
<td>PHY 132 Physics – Electricity &amp; Magnetism</td>
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<td>PHY 133 Physics – Sound and Light</td>
<td>PHY 151 College Physics I</td>
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<td>PHY 152 College Physics II</td>
<td>PHY 153 Modern Topics in Physics</td>
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<td>PHY 251 General Physics I</td>
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### POLITICAL SCIENCE

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<th>POL 120 American Government</th>
<th>POL 130 State and Local Politics</th>
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<td>POL 210 Comparative Government</td>
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### PSYCHOLOGY

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<td>PSY 263 Educational Psychology</td>
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### RELIGION

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<th>REL 110 World Religions</th>
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<td>REL 211 Intro to Old Testament</td>
<td>REL 212 Intro to New Testament</td>
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<td>REL 221 Religion in America</td>
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### SOCIOLOGY

<table>
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<th>SOC 210 Introduction to Sociology</th>
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<td>SOC 225 Social Diversity</td>
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<th>SPA 111 Elementary Spanish I</th>
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<td>SPA 221 Spanish Conversation</td>
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</table>

### UNCC Bilateral Agreement Courses –

Students who plan to transfer to UNCC may select from the following list of electives, under the Bilateral agreement between CPCC and UNCC:
Associate in Fine Arts (A.F.A.)
The Associate in Fine Arts degree is awarded for study leading toward a career in art, dance, or music. The A.F.A. degree is not included in the Comprehensive Articulation Agreement. It requires 28 semester hours of General Education, with the remaining 36-37 hours devoted to skill development in the chosen area of concentration. Transfer to a senior institution will be on a course-by-course basis along with the presentation of an art portfolio or an audition for dance or music. Students planning to transfer should contact the institution they plan to attend for specific transfer requirements.

Quick View of Associate in Fine Arts Degree goals

ENGLISH COMPOSITION GOAL 6 SHC
NATURAL SCIENCE GOAL 4 SHC
MATHEMATICS GOAL 3 SHC
TECHNOLOGY GOAL 3 SHC
HUMANITIES/FINE ARTS GOAL 6 SHC (3 SHC must be in a communications course, and 3 SHC must be in a literature course.)
SOCIAL/BEHAVIORAL SCIENCE GOAL 9 SHC (3 SHC must be in a history course.)
FINE ARTS ELECTIVES 33 SHC
SHC Total 64 SHC

List of General Education Core Courses for Associate in Fine Arts Degree

ENGLISH COMPOSITION (6 SHC)
(Students must select two courses from the following list of courses. One of the courses must be ENG 111.)
ENG 111 Expository Writing
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

NATURAL SCIENCE (4 SHC)
(Students must select 4 SHC from the following list of courses.)
AST 111 Descriptive Astronomy
AST 111A Descriptive Astronomy Lab
BIO 110 Principles of Biology
CHM 131 Introduction to Chemistry
CHM 131A Introduction to Chemistry Lab
GEL 113 Historical Geology
GEL 120 Physical Geology
PHY 110 Conceptual Physics
PHY 110A Conceptual Physics Lab
BIO 168 Anatomy and Physiology I
BIO 111 General Biology I
BIO 112 General Biology II

MATHEMATICS (3 SHC)
(Students must select 3 SHC from the following list of courses.)
MAT 140 Survey of Math
MAT 155 Statistics I
MAT 161 College Algebra
MAT 171 Pre-Calculus Algebra
MAT 171A Pre-Calculus Algebra Lab

TECHNOLOGY (3 SHC)
(Students must select ONE COURSE from the following courses.)
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic

HUMANITIES/FINE ARTS (6 SHC)
(Students must select 6 SHC from the following courses. 3 SHC must be a communications course.)
LITERATURE
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II

COMMUNICATIONS
COM 110 Introduction to Communications
COM 120 Interpersonal Communications
COM 231 Public Speaking

SOCIAL/BEHAVIORAL SCIENCES (9 SHC)
(Students must select 9 SHC from the following list of courses. Courses must from three different disciplines. 3 SHC must be a history course.)
ANT 210 General Anthropology
ANT 220 Cultural Anthropology
ANT 221 Comparative Cultures
ECO 151 Survey of Economics
ECO 251 Principles of Microeconomics
ECO 252 Principles of Macroeconomics
PSY 150 General Psychology
PSY 281 Abnormal Psychology
GEO 111 World Regional Geography
POL 120 American Government
POL 210 Comparative Government
POL 220 International Relations
SOP 210 Introduction to Sociology
SOP 213 Sociology of the Family
SOP 220 Social Problems
SOP 225 Social Diversity
HIS 111 World Civilization I
HIS 112 World Civilization II
HIS 131 American History I
HIS 132 American History II

The following are specific CPCC requirements for major areas of emphasis in the Associate of Fine Arts degree:

Major area of emphasis: ART
Students are required to take:
ART 114, 115 Art History Survey I, II
ART 121, 122 Design I, II
ART 131, Drawing I
Studio art courses must meet the following criteria:
• 6 contact hours for each 3 credit studio class
• All two-dimensional studio art classes, except ART 131 Drawing I, require a prerequisite of ART 121 Design I
• All three dimensional studio art classes require a prerequisite of ART 122 Design II.

**Major area of emphasis: DANCE**
Dancers **are required** to audition for acceptance into the Dance Program and to take selected courses.
Students **are required** to take:
DAN 132 Intermediate Ballet I
DAN 133 Intermediate Ballet II
DAN 236, 237 Advanced Ballet I, II
DAN 142, 143 Intermediate Modern Dance I, II
DAN 221, 222 Advanced Modern Dance I, II
DAN 225 Choreography
DAN 264 Dance Production (Twice)
DAN 211, 212 Dance History I, II
MUS 110 Music Appreciation

**Major area of emphasis: MUSIC**
Students in this area **are required** to take:
MUS 151, 152 Class Piano
MUS 121, 122, 221, 222 Music Theory I, II, III, IV
MUS 271 Music History I
MUS 161, 162, 261, 262 Applied Music I, II, III, IV
And
Any four of the following 1 Semester Hour Credit courses:
MUS 131, 132, 231, 232 Chorus I, II, III, IV
MUS 133, 134, 233, 234 Band I, II, III, IV
MUS 135, 136, 235, 236 Jazz Ensemble I, II, III, IV
MUS 137, 138, 237, 238 Orchestra I, II, III, IV
MUS 141, 142, 241, 242 Ensemble I, II, III, IV
MUS 253 Big Band
Or 4 semesters of the following 3 Semester Hour Credit courses: MUS173, MUS174, MUS274 Opera Theatre I, II, III, IV
Maximum one credit per semester will count toward ensemble requirement. Additional ensemble credits will count towards fulfilling the music elective credits.

**Electives:**
See your faculty advisor to select electives appropriate for your area of study.
Pre-Major Articulation Agreement
**Pre-Major Articulation Agreements**

System-wide guidelines have been developed by university and community college faculty that will prepare students for selected majors at the baccalaureate level are listed below. Students who successfully complete one of these programs of study and who meet the requirements for admission to the university are eligible to apply for admission to the major with junior standing. For more information, contact the Transfer Resource Center at 704.330.6454.

**Associate in Arts (A10100)**

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<td>Computer Science</td>
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**Associate in Science (A10400)**

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**Associate in Fine Arts (A10200)**

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<tr>
<td>Music and Music Education</td>
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</table>

NOTE: In order to meet graduation requirements for a pre-major program, all course requirements must be completed at CPCC after fall 1997 with a grade of C or better, or be eligible for transfer from a North Carolina community college or UNC-system institution. Course requirements must be completed in full; no course substitutions or waivers are permitted.

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**Pre-Major Associate in Fine Arts Articulation Agreement: Art (A1020A)**

**GENERAL EDUCATION CORE** 28 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Fine Arts Degree)

**ENGLISH COMPOSITION** 6 SHC
ENG 111 Expository Writing
AND
ENG 112 Argument-Based Research
OR
ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS** 6 SHC
Students must complete two courses.
One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II
One course must be a communications course:
COM-110 Intro to Communication
COM-120 Interpersonal Communication
COM-231 Public Speaking

**SOCIAL/BEHAVIORAL SCIENCE** 9 SHC
Students must complete three courses.
One course must be a history course:
HIS 111 World Civilization I
HIS 112 World Civilization II
HIS 131 American History I
HIS 132 American History II
Students must complete 2 courses from 2 of the following disciplines: ANT, ECO, GEO, POL, PSY, SOC.

**NATURAL SCIENCE** 4 SHC
Select one of the following courses:
AST-111 & AST-111A Descriptive Astronomy & Lab
BIO-110 Principles of Biology
BIO-111 Biology I
BIO-112 Biology II
BIO-120 Introductory Botany
BIO-130 Introductory Zoology
CHM-131 & CHM-131A Introduction to Chemistry & Lab

**MATHEMATICS** 3 SHC
Select one of the following courses:
MAT 140 Survey of Math
MAT 161 College Algebra
MAT 171 Precalculus Algebra
MAT 175 Precalculus

**OTHER REQUIRED HOURS** 36 SHC
If a two- or three-dimensional studio course is to transfer as a pre-major course, it must have ART 121 or ART 122 respectively as a prerequisite.

The following courses are required (15 SHC):
ART 114 Art History Survey I (3 SHC)
ART 115 Art History Survey II (3 SHC)
CENTRAL PIEDMONT COMMUNITY COLLEGE

College Transfer Programs — Associate in Arts, Associate in Science, and Associate in Fine Arts Degrees

**ELECTIVES (21 SHC from the following):**
- ART 116 Survey of American Art (3 SHC)
- ART 117 Non-Western Art History (3 SHC)
- ART 132 Drawing II (3 SHC)
- ART 135 Figure Drawing I (3 SHC)
- ART 171 Computer Art I (3 SHC)
- ART 212 Gallery Assistantship I (3 SHC)
- ART 213 Gallery Assistantship II (3 SHC)
- ART 231 Printmaking I (3 SHC)
- ART 232 Printmaking II (3 SHC)
- ART 235 Figure Drawing II (3 SHC)
- ART 240 Painting I (3 SHC)
- ART 241 Painting II (3 SHC)
- ART 242 Landscape Painting (3 SHC)
- ART 243 Portrait Painting (3 SHC)
- ART 244 Watercolor Painting (3 SHC)
- ART 245 Metals I (3 SHC) or ART 246 Metals II (3 SHC) or ART 247 Jewelry I (3 SHC)
- ART 248 Jewelry II (3 SHC)
- ART 251 Photography I (3 SHC)
- ART 252 Photography II (3 SHC)
- ART 253 Color Photography (3 SHC)
- ART 254 Digital Photography I (3 SHC)
- ART 255 Digital Photography II (3 SHC)
- ART 256 Videography I (3 SHC)
- ART 257 Videography II (3 SHC)
- ART 258 Video Production (3 SHC)
- ART 259 Video Production II (3 SHC)
- ART 261 Sculpture I (3 SHC)
- ART 262 Sculpture II (3 SHC)
- ART 263 Ceramics I (3 SHC)
- ART 264 Ceramics II (3 SHC)
- ART 265 Museum Study (3 SHC)

Studio art courses must meet the following criteria:
- 6 contact hours for each 3 credit studio class
- All two-dimensional studio art classes, except ART 131 Drawing I, must require a prerequisite of ART 121 Design I
- All three-dimensional studio art classes must require a prerequisite of ART 122 Design II

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64**

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Validation of the level of achievement in studio course work may be determined through portfolio review at the receiving institution. Upon successful completion of the Associate in Fine Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for art will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, WCU, WSSU.

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in art. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and PRAXIS II.

**Pre-Major Associate in Arts Articulation Agreement: Art Education (A1010A)**

**GENERAL EDUCATION CORE**

- **44 SHC**
  (For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION**

- **6 SHC**
  - English 111 Expository Writing
  - AND one of the following:
    - ENG 112 Argument-Based Research
    - ENG 113 Literature-Based Research
    - ENG 114 Professional Research and Reporting

**HUMANITIES/FINE ARTS**

- **12 SHC**
  The following courses are required:
  - ART 114 Art History Survey I (3 SHC)
  - ART 115 Art History Survey II (3 SHC)
  - One course must be a literature course:
    - ENG 231 American Literature I
    - ENG 232 American Literature II
    - ENG 241 British Literature I
    - ENG 242 British Literature II
    - ENG 251 Western World Literature I
    - ENG 252 Western World Literature II
  - One course must be a communications course:
    - COM-110 Intro to Communication
    - COM-120 Interpersonal Communication
    - COM-231 Public Speaking

**SOCIAL/BEHAVIORAL SCIENCES**

- **12 SHC**
  A total of four courses from three discipline areas are required.
  - One course must be a history course:
    - HIS 111 World Civilization I
    - HIS 112 World Civilization II
    - HIS 131 American History I
    - HIS 132 American History II
  - Students must complete 3 courses from at least 2 of the following disciplines: ANT, ECO, GEO, HIS, POL, PSY, SOC.

**NATURAL SCIENCES**

- **8 SHC**
  Select two courses from the biological and physical science disciplines, including accompanying laboratory work.

**MATHEMATICS**

- **6 SHC**
  Two courses are required.
  - Students must select MAT 161 College Algebra or higher.
  - Students must select one of the following courses:
    - CIS 110 Introduction to Computers
    - CIS 115 Introduction to Programming and Logic
    - MAT 155 Statistical Analysis

**OTHER REQUIRED HOURS**

- **20-21 SHC**

The following courses are required (9 SHC):
- ART 121 Design I
- ART 122 Design II
- ART 131 Drawing I

11 additional hours of electives must be selected from the courses below:
- ART 132 Drawing II
ART 171 Computer Art I
ART 231 Printmaking I
ART 240 Painting I
ART 283 Ceramics I
ART 245 Metals I
ART 261 Photography I
ART 281 Sculpture I
ART 266 Videography I
ART 247 Jewelry I
ART 264 Digital Photography I
ART 135 Fig Draw I
ART 222 Wood Design I
ART 250 Surface Design: Textiles
ART 251 Weaving I
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
CSC 134 C++ Programming
CSC 136 Fortran Programming
CSC 120 Computing Fundamentals I
CSC 130 Computing Fundamentals II
CSC 220 Machine Implementation of Algorithms

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for art education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, UNC-A, UNC-C, UNC-G, WCU, WSSU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in art education. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and II.

Pre-Major Associate in Science
Articulation Agreement: Biology and Biology Education (A1040A)

GENERAL EDUCATION CORE* 46 SHC

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Science Degree)

ENGLISH COMPOSITION 6 SHC

English 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

HUMANITIES/FINE ART 9 SHC

A total of three courses from three discipline areas are required.

One course must be a communications course:
COM-110 Intro to Communication
COM-120 Interpersonal Communication

COM-231 Public Speaking

One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II

One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, HUM, MUS, PHI, REL, and SPA.

SOCIAL/BEHAVIORAL SCIENCES 9 SHC

A total of three courses from three discipline areas are required.

One course must be a history course:
HIS 111 World Civilization I
HIS 112 World Civilization II
HIS 131 American History I
HIS 132 American History II

Two additional courses from the following discipline areas are required: ANT, ECO, GEO, POL, PSY, SOC.

NATURAL SCIENCES 16 SHC

The following courses are required:
CHM 151 General Chemistry I
CHM 152 General Chemistry II
BIO 111 General Biology I

One of the following courses is required:
BIO 112 General Biology II
BIO 120 Introduction to Botany
BIO 130 Introduction to Zoology

MATHEMATICS 6 SHC

Two courses are required.
Students must select MAT 171 Precalculus Algebra or higher.

Students must select one of the following quantitative courses:
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
MAT 155 Statistical Analysis

OTHER REQUIRED HOURS* 18 SHC

CHEMISTRY/PHYSICS 8 SHC

One of the following sequences of courses is required:
CHM 251 and 252 Organic Chemistry I & II
PHY 151 and 152 College Physics I & II
#PHY 251 and 252 General Physics I & II

#Only students who place into MAT 272 may choose PHY 251 and 252.

HEALTH/PHYSICAL EDUCATION 1 SHC

Students must complete a minimum of 1 credit of courses in HEA or PED.

ELECTIVES 9 SHC

Students must select an additional 9 credits of approved college transfer courses to total 64 credits. For a complete course listing, refer to the List of General Electives for the Associate in Science Degree.

TOTAL SEMESTER HOURS CREDITS (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign
Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Science degree, students who meet the requirements outlined in this pre-major articulation agreement will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree:

- Biology Education, Secondary Education: ASU, ECSU, FSU, NCA&T, NCCU, UNC-A*, UNC-P, UNC-W, WCU.
- * Certification for Grades (K-4); Middle Grades (4-6); Grades (6-9); Secondary Level.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in biology and biology education. Admission to teach licensure programs require satisfactory scores on PRAXIS I and II.

Pre-Major Associate in Arts
Articulation Agreement: Business Administration (A1010B)

GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree).

ENGLISH COMPOSITION 6 SHC
- ENG 111 Expository Writing
- AND one of the following:
  - ENG 112 Argument-Based Research
  - ENG 113 Literature-Based Research
  - ENG 114 Professional Research and Reporting

HUMANITIES/FINE ARTS 12 SHC
Four courses from three discipline areas are required
One course must be a communications course:
- COM-110 Intro to Communication
- COM-120 Interpersonal Communication
- COM-231 Public Speaking
One course must be a literature course:
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 251 Western World Literature I
- ENG 252 Western World Literature II
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, and SPA.

SOCIAL/BEHAVIORAL SCIENCES 12 SHC
Four courses from three discipline areas are required.
One course must be a history course:
- HIS 111 World Civilization I
- HIS 112 World Civilization II
- HIS 131 American History I
- HIS 132 American History II

Three additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, and SOC.
The following courses are recommended:
- POL 120 American Government
- PSY 150 General Psychology
- SOC 210 Introduction to Sociology

NATURAL SCIENCES 8 SHC
Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

MATHEMATICS 6 SHC
Two courses are required.
Select one of the following courses:
- MAT 161 College Algebra
- MAT 171 Precalculus Algebra
- MAT 175 Precalculus choose one:
Select one of the following courses:
- MAT 263 Brief Calculus
- MAT 271 Calculus I

OTHER REQUIRED HOURS * 20 SHC
The following courses are required:
- ACC 120 Principles of Accounting I
- ACC 121 Principles of Accounting II
- CIS 110 Introduction to Computers
- ECO 251 Principles of Microeconomics
- ECO 252 Principles of Macroeconomics
- MAT 155 Statistical Analysis

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for business administration will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in business administration.

Pre-Major Associate in Science
Articulation Agreement: Chemistry and Chemistry Education (A1040B)

Students entering the Pre-Chemistry Associate in Science Degree Program must demonstrate competency in or complete the prerequisites required for MAT 271, Calculus I.

GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Science Degree)
<table>
<thead>
<tr>
<th>ENGLISH COMPOSITION</th>
<th>6 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 111 Expository Writing AND one of the following:</td>
<td></td>
</tr>
<tr>
<td>ENG 112 Argument-Based Research</td>
<td></td>
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<tr>
<td>ENG 113 Literature-Based Research</td>
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</tr>
<tr>
<td>ENG 114 Professional Research and Reporting</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HUMANITIES/FINE ARTS</th>
<th>9 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three courses from three discipline areas are required. The following course is required:</td>
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<tr>
<td>COM 231 Public Speaking</td>
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<tr>
<td>One course must be a literature course:</td>
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<tr>
<td>ENG 231 America Literature I</td>
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<tr>
<td>ENG 232 American Literature II</td>
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<tr>
<td>ENG 241 British Literature I</td>
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<tr>
<td>ENG 242 British Literature II</td>
<td></td>
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<tr>
<td>ENG 251 Western World Literature I</td>
<td></td>
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<tr>
<td>ENG 252 Western World Literature II</td>
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<tr>
<td>One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, HUM, MUS, PHI, REL, and SPA.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SOCIAL/BEHAVIORAL SCIENCES</th>
<th>9 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three courses from three discipline areas are required. One course must be a history course:</td>
<td></td>
</tr>
<tr>
<td>HIS 111 World Civilization I</td>
<td></td>
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<tr>
<td>HIS 112 World Civilization II</td>
<td></td>
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<tr>
<td>HIS 131 American History I</td>
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<tr>
<td>HIS 132 American History II</td>
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<tr>
<td>Two additional courses from the following discipline areas are required: ANT, ECO, GEO, POL, PSY, SOC. The following course is recommended: PSY 150 General Psychology</td>
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</tbody>
</table>

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<thead>
<tr>
<th>NATURAL SCIENCES</th>
<th>12 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following courses are required:</td>
<td></td>
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<tr>
<td>CHM 151 General Chemistry I</td>
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<tr>
<td>CHM 152 General Chemistry II</td>
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<tr>
<td>PHY 251 General Physics I</td>
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<table>
<thead>
<tr>
<th>MATHEMATICS</th>
<th>8 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following courses are required:</td>
<td></td>
</tr>
<tr>
<td>MAT 271 Calculus I</td>
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<tr>
<td>MAT 272 Calculus II</td>
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</tbody>
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<table>
<thead>
<tr>
<th>OTHER REQUIRED HOURS*</th>
<th>20-21 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following courses are required:</td>
<td></td>
</tr>
<tr>
<td>CHM 251 Organic Chemistry I</td>
<td></td>
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<tr>
<td>CHM 252 Organic Chemistry II</td>
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<tr>
<td>PHY 252 General Physics II</td>
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</tbody>
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<table>
<thead>
<tr>
<th>HEALTH/PHYSICAL EDUCATION</th>
<th>1 SHC</th>
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<tbody>
<tr>
<td>Students must complete 1 credit of HEA or PED</td>
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<thead>
<tr>
<th>COMPUTER SCIENCE</th>
<th>3 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following courses:</td>
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</tr>
<tr>
<td>CIS 110 Introduction to Computers</td>
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<tr>
<td>CIS 115 Introduction to Programming and Logic</td>
<td></td>
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<tr>
<td>CSC 134 C++ Programming</td>
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<tr>
<td>CSC 136 Fortran Programming</td>
<td></td>
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<tr>
<td>CSC 120 Computing Fundamentals I</td>
<td></td>
</tr>
<tr>
<td>CSC 130 Computing Fundamentals II</td>
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<tr>
<td>CSC 220 Machine Implementation of Algorithms</td>
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<thead>
<tr>
<th>ELECTIVES</th>
<th>4 SHC</th>
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</thead>
<tbody>
<tr>
<td>Four additional hours of approved college transfer courses are required to total 64 SHC of transferable courses. For complete course listing, refer to the List of General Electives for the Associate in Science Degree. The following course is recommended:</td>
<td></td>
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<tr>
<td>#MAT 273 Calculus III</td>
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<tr>
<td>#Only students who place into MAT 272 may choose MAT 273.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65</th>
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</thead>
<tbody>
<tr>
<td>*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.</td>
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</table>

<table>
<thead>
<tr>
<th>Application to a University</th>
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</thead>
<tbody>
<tr>
<td>Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Science degree, students who meet the requirements outlined in this pre-major articulation agreement will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree:</td>
</tr>
<tr>
<td>Chemistry Education, Secondary Education: ASU, ECSU, NCA&amp;T, NCCU, UNC-A*, UNC-W</td>
</tr>
<tr>
<td>*Certification for Grades K-4; Middle Grades (4-6); Grades 6-9; Secondary Level.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Admission to the Major</th>
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</thead>
<tbody>
<tr>
<td>Grade point average requirements vary and admission is competitive across the several programs in chemistry and chemistry education. Admission to teach licensure programs requires satisfactory scores on PRAXIS I and II.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-Major Associate in Arts Articulation Agreement: Communication/Communication Studies (A1010O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL EDUCATION CORE (44 SHC)*</td>
</tr>
<tr>
<td>The general education core includes study in the areas of humanities and fine arts, social and behavioral sciences, natural sciences and mathematics, and English composition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENGLISH COMPOSITION</th>
<th>6 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two English composition courses are required.</td>
<td></td>
</tr>
<tr>
<td>• English 111, Expository Writing, is required as the first composition course.</td>
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<tr>
<td>• The second composition course must be selected from the following:</td>
<td></td>
</tr>
<tr>
<td>ENG 112 Argument-Based Research (3 SHC)</td>
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<tr>
<td>ENG 113 Literature-Based Research (3 SHC)</td>
<td></td>
</tr>
<tr>
<td>ENG 114 Professional Research and Reporting (3 SHC)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HUMANITIES/FINE ARTS</th>
<th>12 SHC**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four courses from three discipline areas are required.</td>
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<tr>
<td>• One course must be a literature course.</td>
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</tr>
<tr>
<td>• Three additional courses from the following discipline areas are required: art, dance, drama, foreign languages, interdisciplinary humanities, literature, music, philosophy, and religion. One of these courses must be from fine arts and one from humanities.</td>
<td></td>
</tr>
</tbody>
</table>
### SOCIAL/BEHAVIORAL SCIENCES (12 SHC)

Four courses from three discipline areas are required.
- One course must be a history course.
- The following course is required (3 SHC): PSY 150 General Psychology (3 SHC)
- Two courses from the following discipline areas are required, to include at least one additional discipline: anthropology, economics, geography, history, political science, psychology, and sociology. The following courses are recommended:
  - SOC 210 Intro to Sociology (3 SHC) or SOC 225 Social Diversity (3 SHC)

### NATURAL SCIENCES/MATHEMATICS (14 SHC)

#### NATURAL SCIENCES (8 SHC):
- Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

#### MATHEMATICS (6 SHC): Two courses are required.
- One course must be in introductory mathematics (college algebra, trigonometry, calculus, etc.)
- The second course may be a higher level mathematics course or may be selected from among other quantitative subjects, such as computer science (CIS) and statistics (MAT).
  
  The following course is recommended to meet the second mathematics requirement:
  - CIS 110 Introduction to Computers (3 SHC)

### OTHER REQUIRED HOURS (20-21 SHC)*

One semester hour of credit may be included in a 65 semester hour credit associate in arts program. The transfer of the 65th hour is not guaranteed.
- The following courses are required (9 SHC):
  - COM 110 Introduction to Communication (3 SHC)
  - COM 120 Intro. Interpersonal Communication (3 SHC)
  - COM 231 Public Speaking (3 SHC)
- 11 additional hours of approved college transfer courses are required.
  
  The following courses are recommended:
  - COM 130 Nonverbal Communication (3 SHC)
  - COM 140 Intro. Intercultural Communication (3 SHC)
  - COM 150 Intro. to Mass Communication (3 SHC)
  - COM 251 Debate I (3 SHC)
  - MAT 151 Statistics I (3 SHC) or MAT 155 Statistical Analysis (3 SHC)

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65**

* Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

### Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the associate degree, students who meet the requirements outlined in this pre-major articulation agreement will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree as listed at www.northcarolina.edu/content.php/aa/planning/traditional.htm.

**Students are encouraged to contact the senior institution to confirm degree offerings.**

### Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in Speech/Communication.

### Pre-Major Associate in Arts Articulation Agreement: Computer Science (A1010T)

Students entering the Computer Science Associate in Arts Degree Program must demonstrate competency in or complete the prerequisites required for MAT 271, Calculus I.

**GENERAL EDUCATION CORE, * 46 SHC**

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

#### ENGLISH COMPOSITION 6 SHC
- English 111 Expository Writing
- AND one of the following:
  - ENG 112 Argument-Based Research
  - ENG 113 Literature-Based Research
  - ENG 114 Professional Research and Reporting
  - (ENG 113 is recommended to satisfy this requirement.)

#### HUMANITIES/FINE ARTS 12 SHC

Four courses from three discipline areas are required.
- One course must be a communications course:
  - COM 110 Intro to Communication
  - COM 120 Interpersonal Communication
  - COM 231 Public Speaking
- One course must be a literature course:
  - ENG 231 American Literature I
  - ENG 232 American Literature II
  - ENG 241 British Literature I
  - ENG 242 British Literature II
  - ENG 251 Western World Literature I
  - ENG 252 Western World Literature II

Two additional courses from the following discipline areas are required: ART, DAN, DRA, FRE, GER, ENG, HUM, MUS, PHI, REL, and SPA.

#### SOCIAL/BEHAVIORAL SCIENCES 12 SHC

Four courses from three discipline areas are required.
- One course must be a history course:
  - HIS 111 World Civilization I
  - HIS 112 World Civilization II
  - HIS 131 American History I
  - HIS 132 American History II

Three additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

### SOCIAL/BEHAVIORAL SCIENCES 12 SHC

Four courses from three discipline areas are required.
- One course must be a history course:
  - HIS 111 World Civilization I
  - HIS 112 World Civilization II
  - HIS 131 American History I
  - HIS 132 American History II

Three additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

### NATURAL SCIENCES 8 SHC

The following physics sequence is required:
- PHY 251 General Physics I
- PHY 252 General Physics II

### MATHEMATICS 8 SHC

The following courses are required:
- MAT 271 Calculus I
- MAT 272 Calculus II
OTHER REQUIRED HOURS * 18-19 SHC
The following courses are required: 11 SHC
CSC 120 Computing Fundamentals I
CSC 130 Computing Fundamentals II
MAT 167 Discrete Mathematics

HEALTH/PHYSICAL EDUCATION 2 SHC
Students must complete 2 SHC of HEA or PED

ELECTIVES 5 SHC
Five additional hours of approved college transfer courses are required to total 64 SHC of transferable courses. For the complete course listing, refer to the List of General Electives for the Associate in Arts Degree.
The following courses are recommended:
CSC 220 Machine Implement of Algor
BIO 111 Gen Biology I OR
CHM 151 Gen Chemistry I OR
MAT 280 Linear Algebra

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Science degree, students who meet the requirements outlined in this pre-major articulation agreement for Computer Science will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-C, UNC-G, UNC-P, UNC-W, WC, WSSU.

Admission to the Major
Grade point average requirements vary and admission is competitive across the several programs in computer science. Computer science is a rapidly developing field; curriculum requirements change frequently and vary among the programs and tracks at different universities. In choosing courses to meet both general education core requirements and other required hours, students should seek advice based on the program and track into which they desire to transfer. Students must be proficient in the programming language(s) and programming environment(s) used at the receiving institution.

Pre-Major Associate in Arts Articulation Agreement: Criminal Justice (A1010D)

GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

ENGLISH COMPOSITION 6 SHC
English 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

HUMANITIES/FINE ARTS 12 SHC
A total of four courses from three discipline areas are required
One course must be a communications course:
COM 110 Intro to Communication
COM 120 Interpersonal Communication
COM 213 Public Speaking
One course must be a literature course:
ENG 211 American Literature I
ENG 212 American Literature II
ENG 214 British Literature I
ENG 215 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, and SPA.

SOCIAL/BEHAVIORAL SCIENCES 12 SHC
Four courses from three discipline areas are required.
The following courses are required:
POL 120 American Government
PSY 150 General Psychology
SOC 210 Introduction to Sociology
Select one of the following history courses:
HIS 111 World Civilization I
HIS 112 World Civilization II
HIS 131 American History I
HIS 132 American History II

NATURAL SCIENCES 8 SHC
Two courses from the biological and physical science disciplines, including accompany laboratory work, are required.

MATHEMATICS 6 SHC
Two courses are required. Students must select MAT 161 College Algebra or higher.
The following course is required: MAT 155 Statistical Analysis (3 SHC)

OTHER REQUIRED HOURS* 20-21 SHC
The following courses are required: 9 SHC
CJC 111 Introduction to Criminal Justice
CJC 121 Law Enforcement Operations
CJC 141 Corrections

HEALTH/PHYSICAL EDUCATION 2 SHC
Students must complete 2 SHC of HEA or PED

COMPUTER SCIENCE 3 SHC
Select one of the following courses:
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
CSC 134 C++ Programming
CSC 136 Fortran Programming
CSC 120 Computing Fundamentals I
CSC 130 Computing Fundamentals II
CSC 220 Machine Implementation of Algorithms

ELECTIVES 6 SHC
Six additional hours of approved college transfer courses are required to total 64 SHC of transferable courses. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree.
TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65
Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for criminal justice will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCCU, NCSU, UNC-C, UNC-P, UNC-W, WCU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in criminal justice.

Pre-Major Associate in Science
Articulation Agreement: Engineering (A1040D)

Students entering the Pre-Engineering Associate in Science Degree Program must demonstrate competency in or complete the prerequisites required for MAT 271, Calculus I.

GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Science Degree)

ENGLISH COMPOSITION 6 SHC
English 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting
(ENG 113 is recommended to satisfy this requirement.)

HUMANITIES/FINE ARTS 9 SHC
A total of three courses from three discipline areas are required
One course must be a communications course:
COM 110 Intro to Communication
COM 120 Interpersonal Communication
COM 231 Public Speaking
One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II
One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, ENG, HUM, MUS, PHI, REL, and SPA.

SOCIAL/BEHAVIORAL SCIENCES 9 SHC
Three courses from three discipline areas are required.
One of the following history sequences is required:
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 131 American History I
HIS 132 American History II
One of the following courses is required:
ECO 251 Principles of Microeconomics
ECO 252 Principles of Macroeconomics

One additional course from one of the following discipline areas is required: ANT, GEO, POL, PSY, SOC.

NATURAL SCIENCES 12 SHC
The following courses are required:
CHM 151 General Chemistry I
PHY 251 General Physics I
PHY 252 General Physics II

MATHEMATICS 8 SHC
The following mathematics courses are required:
MAT 271 Calculus I
MAT 272 Calculus II

OTHER REQUIRED HOURS* 20-21 SHC
The following courses are required:
MAT 273 Calculus III
MAT 285 Differential Equations
One of the following courses is required:
CSC 134 C++ Programming
CSC 136 FORTRAN Programming
CSC 151JAVA Programming
One of the following courses is required:
CHM 152 General Chemistry II
DFT 170 Engineering Graphics
EGR 220 Engineering Statics

HEALTH/PHYSICAL EDUCATION 1 SHC
Students must complete 1 SHC of HEA or PED courses

ELECTIVES 6 SHC
Six additional hours of approved college transfer courses are required to total 64 SHC of transferable courses. For complete course listing, refer to the List of General Electives for the Associate in Science Degree.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Science degree, students who meet the requirements outlined in this pre-major articulation agreement for engineering will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: NCA&T, NCSU, UNC-C

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in engineering. In choosing courses to meet both general education core requirements and other required hours, students should seek advice based on the program and track into which they desire to transfer.
**Pre-Major Associate in Arts**  
*Articulation Agreement: Elementary Education  
(A1010R)*

**GENERAL EDUCATION CORE*  44 SHC**
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION  6 SHC**
- English 111 Expository Writing
- AND one of the following:
  - ENG 112 Argument-Based Research
  - ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS  12 SHC**
Four courses from three discipline areas are required.  
One course must be a literature course:
- ENG 131 Introduction to Literature
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 233 Major American Writers

The following course is required:
- COM 231 Public Speaking

One of the following courses is required:
- ART 111 Art Appreciation (3 SHC)
- ART 114 Art History Survey I (3 SHC)
- ART 115 Art History Survey II (3 SHC)
- MUS 110 Music Appreciation (3 SHC)

One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, HUM, MUS, PHI, REL, and SPA.

**SOCIAL/BEHAVIORAL SCIENCES  12 SHC**
Four courses from three discipline areas are required.  
One course must be a history course:
- HIS 111 World Civilizations I
- HIS 112 World Civilizations
- HIS 114 Comparative World History
- HIS 115 Introduction to Global History
- HIS 121 Western Civilization I
- HIS 122 Western Civilization II

The following course is required:
- PSY 150 General Psychology

One of the following courses is required:
- SOC 210 Introduction to Sociology
- SOC 225 Social Diversity

One additional course from the following discipline areas is required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

**NATURAL SCIENCES  8 SHC**
Two courses are required.  
Select one of the following courses:
- BIO 110 Principles of Biology
- BIO 111 General Biology I

Select one of the following courses:
- CHM 131 & CHM 131A Intro to Chemistry and Lab
- CHM 135 Survey of Chemistry I
- CHM 151 General Chemistry I
- PHY 110 & PHY 110A Conceptual Physics and Lab
- PHY 151 College Physics I

**MATHEMATICS  6 SHC**
The following course is required:
- CIS 110 Introduction to Computers

Select one of the following courses:
- MAT 140 Survey of Mathematics
- MAT 141 Mathematical Concepts I
- MAT 142 Mathematical Concepts II
- MAT 161 College Algebra

**OTHER REQUIRED HOURS*  20-21 SHC**

**HEALTH/PHYSICAL EDUCATION  2 SHC**
Student must complete 2 SHC of HEA or PED courses.

**ELECTIVES  18 SHC**
Students must select 18 SHC of approved college transfer electives to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree.

One semester hour of credit may be included in a sixty-five semester hour credit associate in arts program. The transfer of the 65th hour is not guaranteed.

At certain UNC institutions, EDU 216 and EDU 221 may fulfill major requirements; at a majority of institutions the courses will transfer only as free electives. Students should check with the university for the local transfer policy regarding EDU 216 and EDU 221.

It is recommended that within the 18 SHC of electives, pre-education students in Elementary Education select courses that will help meet a corollary studies area. These courses should be selected in conjunction with the requirements at each university, since available corollary studies may not be offered on each university campus.

Corollary Studies are comprised of a minimum of 18 hours of community college or UNC campuses’ coursework in a choice of four interdisciplinary areas: (1) diversity studies, (2) global issues, (3) the arts, or (4) math, science and technology. Satisfying the UNC Board of Governors’ requirement for an academic concentration, corollary studies are appropriate for expanding and deepening the pre-service elementary teacher’s knowledge, appreciation and skills in the areas appropriate to the elementary school classroom and curriculum. The following recommended courses in these corollary studies may be taken as general education or as electives.

**Recommended Courses for Corollary Studies Areas**

**I. DIVERSITY STUDIES**
A minimum 18-hour multidisciplinary area of corollary studies that increases the pre-service teacher’s knowledge of, respect for, and skills in working with students, families, and communities of diverse abilities, languages, races, and cultural backgrounds. Select courses from a minimum of two and a maximum of three different fields (prefixes) as listed below:

**Anthropology**
- ANT 210 General Anthropology
- ANT 220 Cultural Anthropology
- ANT 221 Comparative Cultures

**Art**
- ART 117 Non-Western Art History Communication
- COM 120 Interpersonal Communications
- COM 140 Intercultural Communication

**Drama**
- DRA 126 Storytelling

**English**
- ENG 261 World Literature I
- ENG 262 World Literature II
- ENG 265 Thematic World Lit I
- ENG 266 Thematic World Lit II
ENG 271 Contemporary Literature
ENG 273 African-American Literature

Geography
GEO 112 Cultural Geography

History
HIS 151 Hispanic Civilization
HIS 153 Russian Cultural History
HIS 221 African-American History
HIS 222 African-American History I
HIS 223 African-American History II
HIS 226 The Civil War
HIS 227 Native American History
HIS 228 History of the South
HIS 233 History of Appalachia
HIS 234 Cherokee History
HIS 235 The Spanish Borderlands
HIS 260 History of Africa
HIS 261 East Asian History
HIS 262 Middle East History

Humanities
HUM 120 Cultural Studies
HUM 121 The Nature of America
HUM 122 Southern Culture
HUM 123 Appalachian Culture
HUM 150 American Women’s Studies
HUM 170 The Holocaust
HUM 220 Human Values and Meaning

Music
MUS 114 Non-Western Music

Physical Education
PED 220 Exercise for the Physically Challenged Psychology

Psychology
PSY 211 Psychology of Adjustment
PSY 237 Social Psychology
PSY 241 Developmental Psychology;
PSY 243 Child Psychology
PSY 246 Adolescent Psychology
PSY 259 Human Sexuality
PSY 275 Health Psychology;
PSY 281 Abnormal Psychology

Religion
REL 110 World Religions
REL 111 Eastern Religions
REL 221 Religion in America

Sociology
SOC 213 Sociology of the Family
SOC 215 Group Processes
SOC 220 Social Problems;
SOC 225 Social Diversity
SOC 230 Race and Ethnic Relations
SOC 234 Sociology of Gender
SOC 240 Social Psychology;
SOC 242 Sociology of Deviance
SOC 254 Rural and Urban Sociology

Languages
American Sign Language
ASL 211 Intermediate ASL I (+ lab)
ASL 212 Intermediate ASL II (+ lab)

French
FRE 141 Culture and Civilization
FRE 151 Francophone Literature
FRE 161 Cultural Immersion;
FRE 211 Intermediate French I (+ lab)
FRE 212 Intermediate French II (+ lab)
FRE 221 French Conversation

German
GER 141 Culture and Civilization
GER 211 Intermediate German I (+ lab)
GER 212 Intermediate German II (+ lab)
GER 221 German Conversation

Italian
ITA 211 Intermediate Italian I (+ lab)
ITA 212 Intermediate Italian II (+ lab)
ITA 221 Italian Conversation

Japanese
JPN 211 Intermediate Japanese I
JPN 212 Intermediate Japanese II

Portuguese
POR 141 Culture and Civilization
POR 211 Intermediate Portuguese I (+ lab)
POR 212 Intermediate Portuguese II (+ lab)
POR 221 Portuguese Conversation

Russian
RUS 211 Intermediate Russian I (+ lab)
RUS 212 Intermediate Russian II (+ lab)
RUS 221 Russian Conversation

Spanish
SPA 141 Culture and Civilization
SPA 151 Hispanic Literature
SPA 161 Cultural Immersion;
SPA 211 Intermediate Spanish I (+ lab)
SPA 212 Intermediate Spanish II (+ lab)

Universities may add diversity choices to this list with courses they have available and deem appropriate.

II. GLOBAL ISSUES
A minimum 18-hour multidisciplinary Global Issues area of corollary studies that encompasses courses with a common theme of providing insight into the human condition in the world. The corollary studies area of Global Issues will increase the preservice teacher’s knowledge and understanding of the world in which we live and contemporary issues affecting the world.

Courses addressing a particular region in the world or courses about a particular historical period were not included. The perception of a global issue is subjective and courses included in this area may change over time. Select courses from a minimum of two and a maximum of three different fields (prefixes) as listed below:

Anthropology
ANT 220 Cultural Anthropology
ANT 221 Comparative Cultures

Biology
BIO 145 Ecology
BIO 150 Genetics in Human Affairs
BIO 173 Microbes in World Affairs;
BIO 240 Waste Management

Economics
ECO 252 Principles of Macroeconomics

Geology
GEL 230 Environmental Geology

Geography
GEO 111 World Regional Geography
GEO 112 Cultural Geography
GEO 113 Economic Geography

Health
HEA 120 Community Health
History
- HIS 114 Comparative World History
- HIS 115 Introduction to Global History
- HIS 116 Current World Problems
- HIS 161 Science and Technology

Humanities
- HUM 110 Technology and Society
- HUM 211 Humanities I
- HUM 212 Humanities II
- HUM 220 Human Values and Meaning

Philosophy
- PHI 215 Philosophical Issues
- PHI 240 Introduction to Ethics
- PHI 250 Philosophy of Science

Physical Science
- PHS 130 Earth Science
- PHS 140 Weather and Climate

Political Science
- POL 210 Comparative Government
- POL 220 International Relations

Religion
- REL 110 World Religions

Sociology
- SOC 220 Social Problems
- SOC 254 Rural and Urban Sociology

Universities may add global issues choices to this list with courses they have available and deem appropriate.

III. THE ARTS
A minimum 18-hour area of corollary studies in the Arts will increase the pre-service teacher’s knowledge and appreciation of the visual and performing arts and their history. Pre-service teachers who select this area of corollary studies will be prepared to use the Arts to further children’s understanding of the world, of diverse cultures, and of multiple ways of constructing knowledge and expressing themselves.

Students will choose a minimum of eighteen hours of coursework from the approved lists. Their selections must be drawn from a minimum of two and a maximum of three categories/disciplines (prefixes) across the following two lists. Students may choose up to six hours of coursework from List II. The remainder of coursework (12-18 hours) must be from List I.

List I: Non-applied Courses (12-18 hours should be chosen from this list)
- Art
  - ART 110 Introduction to Art
  - ART 111 Art Appreciation
  - ART 114 Art History Survey I
  - ART 115 Art History Survey II
  - ART 116 Survey of American Art
  - ART 117 Non-Western Art History
  - ART 260 Photography Appreciation
  - ART 289 Museum Study
- Dance
  - DAN 110 Dance Appreciation
  - DAN 211 Dance History I
  - DAN 212 Dance History II
- Drama/Theatre
  - DRA 111 Theatre Appreciation
  - DRA 112 Literature for the Theatre
  - DRA 120 Voice for Performance
  - DRA 122 Oral Interpretation
  - DRA 124 Readers Theatre
  - DRA 126 Storytelling
  - DRA 128 Children’s Theatre
  - DRA 211 Theatre History I
  - DRA 212 Theatre History II

Music
- MUS 110 Music Appreciation
- MUS 111 Fundamentals of Music
- MUS 113 American Music
- MUS 114 Non-Western Music
- MUS 121 Music Theory I
- MUS 122 Music Theory II
- MUS 270 Music Literature
- MUS 271 Music History I
- MUS 272 Music History II
- MUS 280 Music for the Elementary Classroom

List II: Applied/Skilled/Ensemble Courses (Only 6 hours may be chosen)
- Art
  - ART 113 Art Methods and Materials
  - ART 121 Design I
  - ART 122 Design II
  - ART 130 Basic Drawing
  - ART 131 Drawing I
  - ART 132 Drawing II
  - ART 140 Basic Painting
  - ART 171 Computer Art I
  - ART 231 Printmaking I
  - ART 232 Printmaking II
  - ART 240 Painting I
  - ART 241 Painting II
  - ART 244 Watercolor
  - ART 261 Photography I
  - ART 262 Photography II
  - ART 271 Computer Art II
  - ART 281 Sculpture I
  - ART 282 Sculpture II
  - ART 283 Ceramics I
  - ART 284 Ceramics II

Drama/Theatre
- DRA 130 Acting I
- DRA 131 Acting II

Music
- MUS 123 Music Composition
- MUS 131 Chorus I
- MUS 132 Chorus II
- MUS 135 Jazz Ensemble I
- MUS 136 Jazz Ensemble II
- MUS 151 Class Music I
- MUS 152 Class Music II
- MUS 161 Applied Music I
- MUS 162 Applied Music II
- MUS 214 Electronic Music I
- MUS 215 Electronic Music II
- MUS 253 Big Band
- MUS 263 Jazz Improvisation I
- MUS 264 Jazz Improvisation II
- MUS 265 Piano Pedagogy

Universities may add art, dance, drama/theatre and music choices to this list with courses they have available and deem appropriate.

IV. MATH, SCIENCE AND TECHNOLOGY
A minimum 18-hour multidisciplinary area of corollary studies that increases the pre-service teacher’s knowledge of, respect for, and skills in the areas of math, science and technology and their interconnectedness. Select courses from a minimum of two and a maximum of three different fields (prefixes) as listed below:
Technology
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
CSC 120 Computing Fundamentals I
CSC 130 Computing Fundamentals II – (4 SHC)
HIS 161 Science and Technology
HUM 110 Technology and Society
PHI 230 Introduction to Logic

Mathematics (math lab credit hours are not included in 18 hour concentration, eg. 141A):
MAT 140 Survey of Mathematics
MAT 141 Mathematical Concepts I
MAT 142 Mathematical Concepts II
MAT 145 Analytical Math
MAT 151 Statistics I or MAT 155 Statistical Analysis
MAT 161 College Algebra
MAT 162 College Trigonometry
MAT 165 Finite Mathematics
MAT 167 Discrete Mathematics
MAT 171 Precalculus Algebra
MAT 172 Precalculus Trigonometry
MAT 175 Precalculus
MAT 210 Logic
MAT 252 Statistics II
MAT 263 Brief Calculus
MAT 271 Calculus I
MAT 272 Calculus II
MAT 273 Calculus III;
MAT 280 Linear Algebra
MAT 285 Differential Equations
HUM 240 Mathematics and the Arts

Science
AST 111 Descriptive Astronomy
AST 151 General Astronomy I
AST 152 General Astronomy II
AST 251 Observational Astronomy
BIO 110 Principles of Biology
BIO 111 General Biology I
BIO 112 General Biology II
BIO 120 Introductory Botany
BIO 130 Introductory Zoology
BIO 140 Environmental Biology;
BIO 143 Field Biology Minicourse
BIO 145 Ecology
BIO 146 Regional Natural History
BIO 150 Genetics in Human Affairs
BIO 155 Nutrition
BIO 163 Basic Anatomy and Physiology;
BIO 165 Anatomy and Physiology I
BIO 166 Anatomy and Physiology II
BIO 168 Anatomy and Physiology I;
BIO 169 Anatomy and Physiology II
BIO 173 Microbes in World Affairs
BIO 175 General Microbiology
BIO 176 Adv General Microbiology
BIO 180 Biological Chemistry
BIO 221 Botany I
BIO 222 Botany II
BIO 223 Field Botany
BIO 224 Local Flora Spring
BIO 225 Local Flora Summer
BIO 226 Local Flora Fall
BIO 227 Winter Plant ID
BIO 230 Entomology
BIO 231 Invertebrate Zoology
BIO 232 Vertebrate Zoology

Universities may add math, science and technology choices to this list with courses they have available and deem appropriate.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon completion of the associate in arts degree, students who meet the requirements outlined in this pre-major articulation agreement for Elementary Education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: Elementary Education: ASU, ECU, ECSU, FSU, NCA&T, NCCU, UNC-A, UNC-C, UNC-CH, UNC-G, UNC-P, UNC-W, WCU, and WSSU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in Elementary Education.
Minimum statewide requirements are:
1. Minimum 2.5 grade point average on a 4.0 scale.
2. Satisfactory passing scores as established by the State Board of Education on PRAXIS I PPST-Reading; PPST-Writing; PPST-Math.

Receiving institutions may have additional requirements, prerequisites, and/or proficiencies. Since these vary at receiving institutions, students should review the admission to teacher education requirements for the institutions they anticipate attending.

**Pre-Major Associate in Arts Articulation Agreement: Middle Grades Education and Special Education (A1010S)**

**GENERAL EDUCATION CORE** * 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION .** 6 SHC
English 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS** 12 SHC
Four courses from three discipline areas are required.
One course must be a literature course:
ENG 131 Introduction to Literature
ENG 231 American Literature I
ENG 232 American Literature II
ENG 233 Major American Writers

The following course is required:
COM 231 Public Speaking

One of the following courses is required:
ART 111 Art Appreciation
ART 114 Art History Survey I
ART 115 Art History Survey II
MUS 110 Music Appreciation

One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, HUM, MUS, PHI, REL, SPA.

**SOCIAL/BEHAVIORAL SCIENCES** 12 SHC
Four courses from three discipline areas are required.
One course must be a history course:
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 114 Comparative World History
HIS 115 Introduction to Global History
HIS 121 Western Civilization I
HIS 122 Western Civilization II

The following courses are required:
PSY 150 General Psychology

One of the following courses is required:
SOC 210 Introduction to Sociology
SOC 225 Social Diversity

One additional course from the following discipline areas is required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

**NATURAL SCIENCES** 8 SHC
Two courses are required.
Select one of the following courses:
BIO 110 Principles of Biology

BIO 111 General Biology I
Select one of the following courses:
CHM 131 & CHM 131A Intro to Chemistry and Lab
CHM 135 Survey of Chemistry I
CHM 151 General Chemistry I
PHY 110 & PHY 110A Conceptual Physics and Lab
PHY 151 College Physics I

**MATHEMATICS** 6 SHC
Two courses are required:
The following course is required:
CIS 110 Introduction to Computers
Select one of the following courses:
MAT 140 Survey of Mathematics
MAT 141 Mathematical Concepts I
MAT 142 Mathematical Concepts II
MAT 161 College Algebra

**OTHER REQUIRED HOURS** * 20-21 SHC

**HEALTH/PHYSICAL EDUCATION** 2 SHC
Students must complete 2 SHC of HEA or PED courses.

**ELECTIVES** 18 SHC
Students must complete 18 SHC of approved college transfer electives to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree.

One semester hour of credit may be included in a sixty-five semester hour credit associate in arts program. The transfer of the 65th hour is not guaranteed.

At certain UNC institutions, EDU 216 and EDU 221 may fulfill major requirements; at a majority of institutions the courses will transfer only as free electives. Students should check with the university for the local transfer policy regarding EDU 216 and EDU 221.

It is recommended that within the 18 semester hours of electives, pre-education students in Middle Grades Education and Special Education select courses that will help meet the mandated academic (second major) concentration. These courses should be selected in conjunction with the requirements at each university, since available academic (second major) concentrations and their specific requirements differ on each campus. In order to be consistent with NC licensure areas, Middle Grades Education students should select courses from up to two (2) of the following areas: Social Sciences, English, Mathematics, Sciences. (Note: UNC-Asheville students major in an academic area and the selected 18 hours should be in sync with their intended major/program.) Typically offered academic concentrations are biology, English, history, mathematics, and psychology. The following recommended courses in these concentrations may be taken as general education or as electives.

**Recommended Courses for Typical Academic Concentrations**

- **Biology** Up to 12 SHC from the following:
  - BIO 110 Principles of Biology or BIO 111 General Biology I and BIO 112 General Biology II; BIO 120 Intro. Botany or BIO 130 Intro. Zoo. or BIO 140 Environ. Bio. and BIO 140A Environ. Bio. Lab;
  - CHM 151 General Chemistry I
  - CHM 152 General Chemistry II
  - English Up to 6 SHC from the following:
    - ENG 231 American Lit. I
    - ENG 261 World Lit. I
    - ENG 272 Southern Lit.

- **Chemistry**

  - CHM 131 & CHM 131A Intro to Chemistry and Lab
  - CHM 135 Survey of Chemistry I
  - CHM 151 General Chemistry I
  - PHY 110 & PHY 110A Conceptual Physics and Lab
  - PHY 151 College Physics I
ENG 232 American Lit. II
ENG 262 World Lit. II
ENG 273 African-American Lit.
ENG 241 British Lit. I
ENG 265 Thematic World Lit. I
ENG 274 Lit. by Women
ENG 242 British Lit. II
ENG 266 Thematic World Lit. II

History 6 SHC from the following should be taken as general education:

HIS 111 World Civilizations I and
HIS 112 World Civilizations II or
HIS 121 Western Civilization I and
HIS 122 Western Civilization II

6 SHC from the following should be taken as “other required hours:"

HIS 131 American History I and
HIS 132 American History II

Mathematics Up to 12 SHC from the following:

MAT 151 Stat. I,
MAT 151A Statist. I Lab. or
MAT 155 Statist. Analy.
MAT 155A Statist. Analy. Lab
MAT 172 Precal. Trig.
MAT 172A Precal. Trig. Lab or
MAT 175 Precal.
MAT 175A Precalculus Lab;
MAT 271 Calculus I
MAT 272 Calculus II

Psychology Select from:

PSY 150 General Psychology
PSY 241 Develop. Psychology
PSY 263 Educational Psychology
PSY 237 Social Psychology
PSY 243 Child Psychology
PSY 275 Health Psychology
PSY 239 Psy. of Personality
PSY 246 Adolescent Psychology
PSY 281 Abnormal Psychology

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

* Students must meet the receiving university’s foreign language and/or health and physical education requirements.

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon completion of the associate in arts degree, students who meet the requirements outlined in this pre-major articulation agreement for Middle Grades Education and Special Education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree:

Middle Grades Education: ASU, ECU, ECSU, FSU, NCCU, NCSU, UNC-A, UNC-C, UNC-CH, UNC-G, UNC-P, UNC-W, WCU, and WSSU.

Special Education: ASU, ECU, ECSU, NCA&T, UNC-C, UNC-CH, UNC-P, UNC-W, WCU, and WSSU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in Middle Grades Education and Special Education. Minimum statewide requirements are:

1. Minimum 2.5 grade point average on a 4.0 scale.

2. Satisfactory passing scores as established by the State Board of Education on PRAXIS I PPST-Reading; PPST Writing; PPST-Math.

Receiving institutions may have additional requirements, prerequisites, and/or proficiencies. Since these vary at receiving institutions, students should review the admission to teacher education requirements for the institution(s) they anticipate attending.

Pre-Major Associate in Arts
Articulation Agreement: English (A1010E)

**GENERAL EDUCATION CORE** 44 SHC

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION** 6 SHC

English 111 Expository Writing
AND one of the following:

ENG 112 Argument-Based Research
ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS** 12 SHC

Four courses from three discipline areas are required

One course must be a communications course:

COM 110 Introduction to Communication
COM 120 Interpersonal Communication
COM 231 Public Speaking

One course must be a literature course:

ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II

Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.

One of the following foreign language sequences is recommended:

FRE 111 and 112 Elementary French I & I
GER 111 and 112 Elementary German I & II
SPA 111 and 112 Elementary Spanish I & II

**SOCIAL/BEHAVIORAL SCIENCES** 12 SHC

Four courses from three discipline areas are required.

One course must be a history course:

HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 131 American History I
HIS 132 American History II

Three additional courses from one of the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

**NATURAL SCIENCES** 8 SHC

Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

**MATHEMATICS** 6 SHC

Two courses are required.

One course must be in introductory mathematics (college algebra, trigonometry, calculus, etc.).

The second course must be selected from the following:

CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
MAT 155 & MAT 155A Statistical Analysis & Lab

OTHER REQUIRED HOURS* 20-21 SHC

One of the following courses is required:
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II

HEALTH/PHYSICAL EDUCATION 2 SHC

Students must select 2 SHC of HEA or PED courses.

ELECTIVES

Students must complete 15 additional hours of approved college transfer courses to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree.

One of the following courses is recommended:
- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II

An intermediate foreign language sequence is recommended:
- FRE 211 and 212 Intermediate French I & II
- GER 211 and 212 Intermediate German I & II
- SPA 211 and 212 Intermediate Spanish I & II

A total of 64 SHC of transferable courses is required.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for English will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC–A, UNC–CH, UNC–C, UNC–G, UNC–P, UNC–W, WCU, WSSU.

Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in English.

Pre-Major Associate in Arts

Articulation Agreement: English Education (A1010F)

GENERAL EDUCATION CORE * 44 SHC

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

ENGLISH COMPOSITION 6 SHC

English 111 Expository Writing

AND one of the following:

- ENG 112 Argument-Based Research
- ENG 113 Literature-Based Research

HUMANITIES/FINE ARTS 12 SHC

Four courses from three discipline areas are required.

One course must be a communications course:
- COM 110 Introduction to Communication
- COM 120 Interpersonal Communication
- COM 231 Public Speaking

One course must be a literature course:
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 251 Western World Literature I
- ENG 252 Western World Literature II

Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, FER, HUM, MUS, PHI, REL, or SPA.

One of the following fine arts courses is recommended:
- ART 111 Art Appreciation
- DAN 110 Dance Appreciation
- DRA 111 Theatre Appreciation
- HUM 160 Introduction to Film
- MUS 110 Music Appreciation

One of the following foreign language sequences is recommended:
- FRE 111 and 112 Elementary French I & II
- GER 111 and 112 Elementary German I & II
- SPA 111 and 112 Elementary Spanish I & II

SOCIAL/BEHAVIORAL SCIENCES 12 SHC

Four courses from three discipline areas are required.

One course must be a history course:
- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II

The following course is required:
- PSY 150 General Psychology

Two additional courses from one of the following discipline areas are required, to include one additional discipline: ANT, ECO, GEO, HIS, POL, PSY, SOC.

One of the following courses is recommended:
- HIS 111 World Civilizations I
- HIS 112 World Civilizations II

NATURAL SCIENCES 8 SHC

Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

MATHEMATICS 6 SHC

Two mathematics courses are required.

One course must be in introductory mathematics (college algebra, trigonometry, calculus, etc.).

The second course must be selected from the following courses:
- CIS 110 Introduction to Computers
- CIS 115 Introduction to Programming and Logic
- MAT 155 & MAT 155A Statistical Analysis & Lab

OTHER REQUIRED HOURS* 20-21 SHC

HEALTH/PHYSICAL EDUCATION 2 SHC

Students must select 2 SHC of HEA or PED courses.
### Electives 18-19 SHC

Students must select 18 additional hours of approved college transfer courses to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the mathematics requirement, a computer science course must be selected from the list of approved electives.

The following course is **recommended**:  
COM 231 Public Speaking

An intermediate foreign language sequence is **recommended**:  
- FRE 211 and 212 Intermediate French I & II
- GER 211 and 212 Intermediate German I & II
- SPA 211 and 212 Intermediate Spanish I & II

One of the following courses with multicultural or gender emphasis is **recommended**:  
- ENG 273 African-American Literature
- ENG 274 Literature by Women
- HIS 221 African-American History
- SOC 225 Social Diversity

Two additional 200-level survey courses in literature are **recommended**.

A total of 64 SHC of transferable courses is required.

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM:** 64-65  
*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

### Application to a University

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for English Education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-G, UNC-P, UNC-W, WCU, WSSU.

### Admission to the Major

Grade point average requirements vary and admission is competitive across the several programs in English Education. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and II.

### Pre-Major Associate in Arts Articulation Agreement: Health Education (A1010G)

**General Education Core** 44 SHC  
*(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)*

**English Composition** 6 SHC  
- English 111 Expository Writing  
- English 112 Argument-Based Research  
- English 113 Literature-Based Research  
- English 114 Professional Research and Reporting

**Humanities/Fine Arts** 12 SHC  
Four courses from three discipline areas are required.

**Social/Behavioral Sciences** 12 SHC  
Four courses from three discipline areas are required.

**Natural Sciences** 8 SHC  
One of the following sequences of courses is required:  
CHM 151 General Chemistry I  
AND  
CHM 152 General Chemistry II  
OR  
BIO 111 General Biology I  
AND  
BIO 112 General Biology II

**Mathematics** 6 SHC  
The following courses are required:  
CIS 110 Introduction to Computers  
MAT 161 or higher College Algebra

**Other Required Hours** 20-21 SHC  
The following courses are required:  
HEA 110 Personal Health/Wellness  
HEA 112 First Aid and CPR  
HEA 120 Community Health  
The following course sequence is required:  
BIO 168 Anatomy and Physiology I AND  
BIO 169 Anatomy and Physiology II  
The following course is required:  
MAT 155 Statistical Analysis

**Electives**  
One additional hour of approved college transfer course work is required to total 64 SHC of transferable courses. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree.

**Total Semester Hours Credit (SHC) in Program:** 64-65
*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for health education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, FSU, NCCU, UNC-C, UNC-G, UNC-P

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in health education. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and II.

**Pre-Major Associate in Arts**

**Articulation Agreement: History (A1010H)**

**GENERAL EDUCATION CORE**

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

<table>
<thead>
<tr>
<th>ENGLISH COMPOSITION</th>
<th>6 SHC</th>
</tr>
</thead>
</table>
| English 111 Expository Writing
AND one of the following: ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research & Reporting |

One of the following courses is recommended to satisfy the second composition requirement:

- ENG 112 Argument-Based Research
- ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS**

12 SHC

Four courses from three discipline areas are required.

One course must be a communications course:

- COM 110 Introduction to Communication
- COM 120 Interpersonal Communication
- COM 231 Public Speaking

One course must be a literature course:

- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 251 Western World Literature I
- ENG 252 Western World Literature II

Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, or SPA.

**SOCIAL/BEHAVIORAL SCIENCES**

12 SHC

Four courses from three discipline areas are required.

One course must be a history course:

- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II

Three courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL., PSY, SOC.

The following history sequence is recommended:

**HIS 111 World Civilizations I AND HIS 112 World Civilizations II**

**NATURAL SCIENCES**

8 SHC

Two courses from the biological and physical science disciplines, including accompany laboratory work, are required.

**MATHEMATICS**

6 SHC

Two courses are required.

- MAT 161 (or higher) College Algebra
- Select one of the following courses:
  - CIS 110 Introduction to Computers
  - CIS 115 Intro to Programming and Logic
  - MAT 155 & MAT 155A Statistical Analysis & Lab

**OTHER REQUIRED HOURS**

20-21 SHC

**HEALTH/PHYSICAL EDUCATION**

2 SHC

Students must select 2 SHC of HEA or PED courses.

**ELECTIVES**

18 SHC

18 additional hours of approved college transfer courses are required to total 64 SHC of credit. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the math requirement, a computer science course must be selected from the list of approved electives.

The following courses are recommended:

- HIS 131 American History I
- HIS 132 American History II

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM:** 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for History will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in History.

**Pre-Major Associate in Science**

**Articulation Agreement: Mathematics (A1040E)**

**GENERAL EDUCATION CORE**

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Science Degree)

<table>
<thead>
<tr>
<th>ENGLISH COMPOSITION</th>
<th>6 SHC</th>
</tr>
</thead>
</table>
| English 111 Expository Writing
AND one of the following: ENG 112 Argument-Based Research
ENG 113 Literature-Based Research |

**HUMANITIES/FINE ARTS**

12 SHC

Four courses from three discipline areas are required.

One course must be a communications course:

- COM 110 Introduction to Communication
- COM 120 Interpersonal Communication
- COM 231 Public Speaking

One course must be a literature course:

- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 251 Western World Literature I
- ENG 252 Western World Literature II

Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, or SPA.

**SOCIAL/BEHAVIORAL SCIENCES**

12 SHC

Four courses from three discipline areas are required.

One course must be a history course:

- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II

Three courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL., PSY, SOC.

The following history sequence is recommended:

**HIS 111 World Civilizations I AND HIS 112 World Civilizations II**

**NATURAL SCIENCES**

8 SHC

Two courses from the biological and physical science disciplines, including accompany laboratory work, are required.

**MATHEMATICS**

6 SHC

Two courses are required.

- MAT 161 (or higher) College Algebra
- Select one of the following courses:
  - CIS 110 Introduction to Computers
  - CIS 115 Intro to Programming and Logic
  - MAT 155 & MAT 155A Statistical Analysis & Lab

**OTHER REQUIRED HOURS**

20-21 SHC

**HEALTH/PHYSICAL EDUCATION**

2 SHC

Students must select 2 SHC of HEA or PED courses.

**ELECTIVES**

18 SHC

18 additional hours of approved college transfer courses are required to total 64 SHC of credit. For complete course listing, refer to the List of General Electives for the Associate in Science Degree. If not taken to satisfy the math requirement, a computer science course must be selected from the list of approved electives.

The following courses are recommended:

- HIS 131 American History I
- HIS 132 American History II

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM:** 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for History will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in History.
ENG 114 Professional Research and Reporting

HUMANITIES/FINE ARTS 9 SHC
Three courses from three discipline areas are required.
One course must be a communications course:
COM 110 Introduction to Communication
COM 120 Interpersonal Communication
COM 231 Public Speaking
One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II
One additional course from the following discipline areas is required: ART, DAN, DRA, FRE, GER, HUM, MUS, PHI, REL, or SPA.

SOCIAL/BEHAVIORAL SCIENCES 9 SHC
Three courses from three discipline areas are required.
One course must be a history course:
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 131 American History I
HIS 132 American History II
Two courses from the following discipline areas are required: ANT, ECO, GEO, POL, PSY, SOC.

NATURAL SCIENCES 8 SHC
The following physics sequence is required:
PHY 251 General Physics I
PHY 252 General Physics II

MATHEMATICS 12 SHC
The following mathematics courses are required:
MAT 175 Precalculus I
MAT 271 Calculus I
MAT 272 Calculus II

OTHER REQUIRED HOURS* 20-21 SHC
The following courses are required:
MAT 273 Calculus III
One of the following courses is required:
MAT 280 Linear Algebra
MAT 285 Differential Equations
One of the following courses is required:
CSC 120 Computing Fundamentals I
CSC 134 C++ Programming
CSC 136 FORTRAN Programming
CSC 151 JAVA Programming

HUMANITIES/FINE ARTS 3 SHC
Students must complete an additional 3 hours of approved Humanities/Fine Arts courses. For complete course listing, refer to the List of General Education Core Courses for the Associate in Science Degree – Humanities/Fine Arts section.

SOCIAL/BEHAVIORAL SCIENCES 3 SHC
Students must complete an additional 3 hours of approved Social/Behavioral Sciences courses. For complete course listing, refer to the List of General Education Core Courses for the Associate in Science Degree – Social/Behavioral Sciences section

HEALTH/PHYSICAL EDUCATION 1 SHC
Students must complete 1 SHC of HEA or PED courses.

ELECTIVES 2 SHC
Students must complete 2 additional hours of approved college transfer electives to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Science Degree.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Science degree, students who meet the requirements outlined in this pre-major articulation agreement for mathematics will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

Admission to the Major
Grade point average requirements vary and admission is competitive across the several programs in mathematics.

Pre-Major Associate in Fine Arts Articulation Agreement: Music and Music Education (A1020D)

GENERAL EDUCATION CORE* 28 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Fine Arts Degree)

ENGLISH COMPOSITION 6 SHC
ENG 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

HUMANITIES/FINE ARTS 6 SHC
Two courses are required.
One course must be a communications course:
COM 110 Introduction to Communications
COM 120 Interpersonal Communication
COM 231 Public Speaking
One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 Western World Literature I
ENG 252 Western World Literature II

SOCIAL/BEHAVIORAL SCIENCES 9 SHC
Three courses from three discipline areas are required.
One course must be a history course:
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 131 American History I
HIS 132 American History II
Two additional courses from two of the following discipline areas are required: ANT, ECO, GEO, POL, PSY, SOC.
### NATURAL SCIENCES 4 SHC
Select 4 SHC from the following courses:
- AST 111 Descriptive Astronomy
- AST 111A Descriptive Astronomy Lab
- BIO 110 Principles of Biology
- CHM 131 Introduction to Chemistry
- CHM 131A Introduction to Chemistry Lab
- BIO 111 General Biology I
- BIO 112 General Biology II
- BIO 120 Introductory Botany
- BIO 130 Introductory Zoology

### MATHEMATICS 3 SHC
Select one of the following courses:
- MAT 140 Survey of Math
- MAT 161 College Algebra
- MAT 171 Precalculus Algebra
- MAT 175 Precalculus

### OTHER REQUIRED HOURS 36 SHC
The following courses are required: 26 SHC
- MUS 121 Music Theory I
- MUS 122 Music Theory II
- MUS 151 Class Music I
- MUS 152 Class Music II
- MUS 221 Music Theory III
- MUS 222 Music Theory IV
- MUS 161 Applied Music I
- MUS 162 Applied Music II
- MUS 261 Applied Music III
- MUS 262 Applied Music IV
Select four of the following courses: 4 SHC
- MUS 131 Chorus I
- MUS 132 Chorus II
- MUS 135 Jazz Ensemble I
- MUS 136 Jazz Ensemble II
- MUS 231 Chorus III
- MUS 232 Chorus IV
- MUS 235 Jazz Ensemble III
- MUS 236 Jazz Ensemble IV
- MUS 253 Big Band

### ELECTIVES 6 SHC
Students must select an additional 6 SHC from MUS courses.

### TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

#### Application to a University
Application admission deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Fine Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for music and music education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSA, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

#### Admission to the Major
Graduate point average requirements vary and admission is competitive across the several programs in music and music education. Validation of level of achievement in Theory, Class Music, and Applied Music is required for acceptance into four-year programs in accordance with NASM requirements for admission of transfer students. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and PRAXIS II.

### Pre-Major Associate in Arts

#### Articulation Agreement: Nursing (A1010I)

#### GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

#### ENGLISH COMPOSITION 6 SHC
- English 111 Expository Writing
- AND one of the following:
  - ENG 112 Argument-Based Research
  - ENG 113 Literature-Based Research
  - ENG 114 Professional Research and Reporting

#### HUMANITIES/FINE ARTS 12 SHC
Four courses from three discipline areas are required
One course must be a communications course:
- COM 110 Introduction to Communications
- COM 120 Interpersonal Communications
- COM 231 Public Speaking
One course must be a literature course:
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 251 Western World Literature I
- ENG 252 Western World Literature II
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, or SPA.

#### SOCIAL/BEHAVIORAL SCIENCES 12 SHC
Four courses from three discipline areas are required.
One course must be a history course:
- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II
The following courses are required:
- PSY 150 General Psychology
- PSY 241 Developmental Psychology
- SOC 210 Introduction to Sociology

#### NATURAL SCIENCES 8 SHC
One of the following chemistry sequences is required:
- CHM 131 & 131A Introduction to Chemistry & Lab
- CHM 132 Organic Biochemistry
- CHM 151 General Chemistry I AND
- CHM 152 General Chemistry II

#### MATHEMATICS 6 SHC
The following courses are required:
- MAT 161 (or higher) College Algebra
- MAT 155 Statistical Analysis

#### OTHER REQUIRED HOURS 20-21 SHC
The following courses are required:
- PSY 281 Abnormal Psychology
SOC 213 Sociology of the Family
The following course sequence is required:
   BIO 168 Anatomy and Physiology I
   BIO 169 Anatomy and Physiology II
One of the following courses is required:
   BIO 175 General Microbiology
   BIO 275 Microbiology

HEALTH/PHYSICAL EDUCATION 2 SHC
Students must select 2 SHC of HEA or PED courses.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for Nursing will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ECU, NCA&T, NCCU, UNC-CH, UNC-C, UNC-G, UNC-W, WCU, WSSU.

Admission to the Major
Admission across the several programs in Nursing is competitive. Other professional admission requirements may be designated by individual programs. Grade point average requirements vary and admission is competitive across the several programs in nursing.

Pre-Major Associate in Arts
Articulation Agreement: Physical Education (A1010J)

GENERAL EDUCATION CORE* 44 SHC
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

ENGLISH COMPOSITION 6 SHC
   English 111 Expository Writing
   AND one of the following:
   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting
   The following course is recommended:
   ENG 112 Argument-Based Research

HUMANITIES/FINE ARTS 12 SHC
Four courses from three discipline areas are required. One course must be a communications course:
   COM 110 Introduction to Communication
   COM 120 Interpersonal Communication
   COM 231 Public Speaking
One course must be a literature course:
   ENG 231 American Literature I
   ENG 232 American Literature II
   ENG 241 British Literature I
   ENG 242 British Literature II
   ENG 251 Western World Literature I
   ENG 252 Western World Literature II
   The following course is recommended:
   ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.
   The following sequence of courses is recommended:
   COM 231 Public Speaking

SOCIAL/BEHAVIORAL SCIENCES 12 SHC
Four courses from three discipline areas are required. One course must be a history course:
   HIS 111 World Civilizations I
   HIS 112 World Civilizations II
   HIS 131 American History I
   HIS 132 American History II
   Three additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.
   The following course is recommended:
   PSY 150 General Psychology

NATURAL SCIENCES 8 SHC
Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required. The following sequence of courses is recommended:
   BIO 111 General Biology I
   BIO 112 General Biology II

MATHEMATICS 6 SHC
Two courses are required. One course must be in introductory mathematics (college algebra, trigonometry, calculus, etc.). The following course is recommended as the introductory mathematics course:
   MAT 161 College Algebra
   One of the following courses must be completed as the second mathematics course:
   CIS 110 Introduction to Computers
   CIS 115 Introduction to Programming and Logic
   MAT 155 Statistical Analysis

OTHER REQUIRED HOURS* 20-21 SHC
   The following courses are required:
   PED 110 Fit and Well for Life
   PHYSICAL EDUCATION ELECTIVES 2 SHC
   Students must select 2 SHC of PED courses.

ELECTIVES 16 SHC
Students must select 16 additional hours of approved college transfer courses to total 64 SHC. Pre-education majors should select additional courses from Humanities/Fine Arts, Social/Behavioral Sciences, Natural Sciences/Mathematics, and electives that meet the requirements of the academic concentration, based on the requirements of the receiving institution. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the math requirement, one computer science course must be selected from the list of electives.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65
   *Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major
articulation agreement for physical education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, UNC-CH, UNC-G, UNC-P, UNC-W, WCU, WSSU.

Admission to the Major
Grade point average requirements vary and admission is competitive across the several programs in physical education. Admission to teach licensure programs requires satisfactory scores on PRAXIS I and II.

Pre-Major Associate in Arts Articulation Agreement: Political Science (A1010K)

<table>
<thead>
<tr>
<th>GENERAL EDUCATION CORE*</th>
<th>44 SHC</th>
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</thead>
<tbody>
<tr>
<td>(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)</td>
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<table>
<thead>
<tr>
<th>ENGLISH COMPOSITION</th>
<th>6 SHC</th>
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<tbody>
<tr>
<td>English 111 Expository Writing</td>
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<tr>
<td>AND one of the following:</td>
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<tr>
<td>ENG 112 Argument-Based Research</td>
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<tr>
<td>ENG 113 Literature-Based Research</td>
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<tr>
<td>ENG 114 Professional Research and Reporting</td>
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<thead>
<tr>
<th>HUMANITIES/FINE ARTS</th>
<th>12 SHC</th>
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<tbody>
<tr>
<td>Four courses from three discipline areas are required</td>
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<tr>
<td>One course must be a communications course:</td>
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<tr>
<td>COM 110 Introduction to Communications</td>
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<tr>
<td>COM 120 Interpersonal Communication</td>
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<tr>
<td>COM 231 Public Speaking</td>
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<tr>
<td>One course must be a literature course:</td>
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<tr>
<td>ENG 231 American Literature I</td>
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<td>ENG 232 American Literature II</td>
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<tr>
<td>ENG 241 British Literature I</td>
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<tr>
<td>ENG 242 British Literature II</td>
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<tr>
<td>ENG 251 Western World Literature I</td>
<td></td>
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<tr>
<td>ENG 252 Western World Literature II</td>
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<tr>
<td>Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.</td>
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<tr>
<td>One of the following course sequences is <strong>recommended</strong>:</td>
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<tr>
<td>FRE 111 and 112 Elementary French I &amp; II</td>
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<tr>
<td>GER 111 and 112 Elementary German I &amp; II</td>
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<tr>
<td>SPA 111 and 112 Elementary Spanish I &amp; II</td>
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<table>
<thead>
<tr>
<th>SOCIAL/BEHAVIORAL SCIENCES</th>
<th>12 SHC</th>
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</thead>
<tbody>
<tr>
<td>Four courses from three discipline areas are required.</td>
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<tr>
<td>One course must be a history course:</td>
<td></td>
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<tr>
<td>HIS 111 World Civilizations I</td>
<td></td>
</tr>
<tr>
<td>HIS 112 World Civilizations II</td>
<td></td>
</tr>
<tr>
<td>HIS 131 American History I</td>
<td></td>
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<tr>
<td>HIS 132 American History II</td>
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</tr>
<tr>
<td>Three additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.</td>
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<tr>
<td>The following courses are <strong>recommended</strong>:</td>
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<tr>
<td>PSY 150 General Psychology</td>
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<td>GEO 111 World Regional Geography</td>
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<tr>
<td>One of the following courses is <strong>recommended</strong>:</td>
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<tr>
<td>SOC 210 Introduction to Sociology</td>
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<td>SOC 220 Social Problems</td>
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<td>SOC 225 Social Diversity</td>
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<thead>
<tr>
<th>NATURAL SCIENCES</th>
<th>8 SHC</th>
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<tbody>
<tr>
<td>Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.</td>
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<table>
<thead>
<tr>
<th>MATHEMATICS</th>
<th>6 SHC</th>
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<tbody>
<tr>
<td>Two courses are required.</td>
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<tr>
<td>One course must be in introductory mathematics (college algebra, trigonometry, calculus, etc.). Students must select one of the following courses:</td>
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<tr>
<td>CIS 110 Introduction to Computers</td>
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<tr>
<td>CIS 115 Introduction to Programming and Logic</td>
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<tr>
<td>MAT 155 Statistical Analysis</td>
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<tr>
<td>The following course is <strong>recommended</strong> to meet the second mathematics requirement:</td>
<td></td>
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<tr>
<td>CIS 110 Introduction to Computers</td>
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<thead>
<tr>
<th>OTHER REQUIRED HOURS*</th>
<th>20-21 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following course is required:</td>
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<tr>
<td>POL 120 American Government</td>
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<table>
<thead>
<tr>
<th>HEALTH/PHYSICAL EDUCATION</th>
<th>2 SHC</th>
</tr>
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<tbody>
<tr>
<td>Students must select 2 SHC of HEA or PED courses.</td>
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</table>

<table>
<thead>
<tr>
<th>ELECTIVES</th>
<th>15 SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students must select 15 additional hours of approved college transfer courses are required to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the mathematics requirement, students must complete a minimum of one computer science course.</td>
<td></td>
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<tr>
<td>The following courses are <strong>recommended</strong>:</td>
<td></td>
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<tr>
<td>POL 210 Comparative Government</td>
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<td>POL 220 International Relations</td>
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<tr>
<td>One of the following is <strong>recommended</strong>:</td>
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<tr>
<td>ECO 151 Survey of Economics</td>
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<tr>
<td>ECO 251 Principles of Microeconomics</td>
<td></td>
</tr>
<tr>
<td>ECO 252 Principles of Macroeconomics</td>
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</tbody>
</table>

| TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65 |

| *Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution. |

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for political science will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

Admission to the Major
Grade point average requirements vary and admission is competitive across the several programs in political science.
**Pre-Major Associate in Arts**  
**Articulation Agreement: Psychology (A1010L)**

**GENERAL EDUCATION CORE**  
44 SHC  
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION**  
6 SHC  
ENG 111 Expository Writing  
AND one of the following:  
ENG 112 Argument-Based Research  
ENG 113 Literature-Based Research  
ENG 114 Professional Research and Reporting

**HUMANITIES/FINE ARTS**  
12 SHC  
Four courses from three discipline areas are required  
One course must be a communications course:  
COM 110 Introduction to Communications  
COM 120 Interpersonal Communication  
COM 231 Public Speaking  
One course must be a literature course:  
ENG 231 American Literature I  
ENG 232 American Literature II  
ENG 241 British Literature I  
ENG 242 British Literature II  
ENG 251 Western World Literature I  
ENG 252 Western World Literature II  
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.

**SOCIAL/BEHAVIORAL SCIENCES**  
12 SHC  
Four courses from three discipline areas are required  
One course must be a history course:  
HIS 111 World Civilizations I  
HIS 112 World Civilizations II  
HIS 131 American History I  
HIS 132 American History II  
The following course is required:  
PSY 150 General Psychology  
Two additional courses from the following discipline areas are required: ANT, ECO, GEO, HIS, POL, PSY, SOC.

**NATURAL SCIENCES**  
8 SHC  
Two courses are required.  
One of the following biology courses is required:  
BIO 110 Principles of Biology  
BIO 111 General Biology I  
Students must select one course from the biological and physical science disciplines, including accompanying laboratory work, are required.

**MATHEMATICS**  
6 SHC  
Two courses are required.  
Students must select MAT 161 College Algebra or a higher math. The second course must be selected from the following courses:  
CIS 110 Introduction to Computers  
CIS 115 Introduction to Programming and Logic  
MAT 155 Statistical Analysis

**OTHER REQUIRED HOURS**  
20-21 SHC

**HEALTH/PHYSICAL EDUCATION**  
2 SHC  
Students must select 2 SHC of HEA or PED courses.

**ELECTIVES**  
18 SHC  
18 additional hours of approved college transfer courses are required.  
For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the Mathematics requirements, one course must be a computer science course chosen from the list of electives.

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM:** 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**  
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for psychology will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

**Admission to the Major**  
Grade point average requirements vary and admission is competitive across the several programs in psychology.

**Pre-Major Associate in Arts**  
**Articulation Agreement: Social Science Secondary Education (A1010M)**

**GENERAL EDUCATION CORE**  
44 SHC  
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION**  
6 SHC  
ENG 111 Expository Writing  
AND one of the following:  
ENG 112 Argument-Based Research  
ENG 113 Literature-Based Research

**HUMANITIES/FINE ARTS**  
12 SHC  
Four courses from three discipline areas are required  
One course must be a communications course:  
COM 110 Introduction to Communications  
COM 120 Interpersonal Communication  
COM 231 Public Speaking  
One course must be a literature course:  
ENG 231 American Literature I  
ENG 232 American Literature II  
ENG 241 British Literature I  
ENG 242 British Literature II  
ENG 251 Western World Literature I  
ENG 252 Western World Literature II

**SOCIAL/BEHAVIORAL SCIENCES**  
12 SHC  
Four courses from three discipline areas are required  
One course must be a history course:  
HIS 111 World Civilizations I  
HIS 112 World Civilizations II  
HIS 131 American History I  
HIS 132 American History II  
The following course is required:  
PSY 150 General Psychology  
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.

**NATURAL SCIENCES**  
8 SHC  
Two courses are required.  
One of the following biology courses is required:  
BIO 110 Principles of Biology  
BIO 111 General Biology I  
Students must select one course from the biological and physical science disciplines, including accompanying laboratory work, are required.

**MATHEMATICS**  
6 SHC  
Two courses are required.  
Students must select MAT 161 College Algebra or a higher math. The second course must be selected from the following courses:  
CIS 110 Introduction to Computers  
CIS 115 Introduction to Programming and Logic  
MAT 155 Statistical Analysis

**OTHER REQUIRED HOURS**  
20-21 SHC

**HEALTH/PHYSICAL EDUCATION**  
2 SHC  
Students must select 2 SHC of HEA or PED courses.
SOCIAL/BEHAVIORAL SCIENCES  12 SHC
The following courses are required:
  POL 120 American Government
  SOC 210 Introduction to Sociology
  HIS 111 World Civilizations I
  HIS 112 World Civilizations II

NATURAL SCIENCES  8 SHC
Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

MATHEMATICS  6 SHC
Two courses are required.
  Students must select MAT 161 College Algebra or higher.
  Students must select one of the following courses:
    CIS 110 Introduction to Computers
    CIS 115 Introduction to Programming and Logic
    MAT 155 Statistical Analysis

OTHER REQUIRED HOURS*  20-21 SHC
The following courses are required:
  GEO 111 World Regional Geography
  HIS 131 American History I
  HIS 132 American History II
  One of the following is required
    ECO 151 Survey of Economics
    OR
    ECO 251 Principles of Microeconomics AND
    ECO 252 Principles of Macroeconomics

HEALTH/PHYSICAL EDUCATION  2 SHC
Students must select 2 SHC of HEA or PED courses.

ELECTIVES
Students must select 6 additional hours of approved college transfer courses to total 64 SHC of transferable courses. For complete course listing, refer to the List of General Electives for the Associate in Arts degree. If not taken to satisfy the Mathematics requirements, one course must be a computer science course chosen from the list of electives.

TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65
  *Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for social science secondary education will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, FSU, NCSU, UNC-CH, WCU.

Admission to the Major
Grad point average requirements vary and admission is competitive across the several programs in social science secondary education. Admission to teacher licensure programs requires satisfactory scores on PRAXIS I and II.

Pre-Major Associate in Arts
Articulation Agreement: Social Work (A1010Q)

ENGLISH COMPOSITION  6 SHC
  English 111 Expository Writing
  AND one of the following:
  ENG 112 Argument-Based Research
  ENG 113 Literature-Based Research
  ENG 114 Professional Research and Reporting

HUMANITIES/FINE ARTS  12 SHC
Four courses from three discipline areas are required.
  One course must be a communications course:
    COM 110 Introduction to Communications
    COM 120 Interpersonal Communication
    COM 231 Public Speaking
  One course must be a literature course:
    ENG 231 American Literature I
    ENG 232 American Literature II
    ENG 241 British Literature I
    ENG 242 British Literature II
    ENG 251 Western World Literature I
    ENG 252 Western World Literature II
  Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.

SOCIAL/BEHAVIORAL SCIENCES  12 SHC
Four courses from three discipline areas are required.
  Students must select one of the following courses:
    HIS 111 World Civilizations I
    HIS 112 World Civilizations II
    HIS 131 American History I
    HIS 132 American History II
  The following courses are required:
    POL 120 American Government
    PSY 150 General Psychology
    SOC 210 Introduction to Sociology

NATURAL SCIENCES  8 SHC
Two courses from the biological and physical sciences disciplines, including accompanying laboratory work, are required.
  The following courses are recommended:
    BIO 110 Principles of Biology
    OR
    BIO 111 General Biology I AND
    BIO 112 General Biology II

MATHEMATICS  6 SHC
Two courses are required.
  Students must select one of the following courses or a higher level:
    MAT 161 College Algebra
    MAT 171 Precalculus Algebra
  Students must select one of the following courses:
    CIS 110 Introduction to Computers
    CIS 115 Introduction to Programming and Logic
    MAT 155 Statistical Analysis
The following course is recommended:
CIS 110 Introduction to Computers

OTHER REQUIRED HOURS*  20-21 SHC

HEALTH/PHYSICAL EDUCATION  2 SHC
Students must select 2 SHC of HEA or PED courses.

ELECTIVES  18-19 SHC
Students must select 18-19 additional hours of approved transfer courses to total 64 SHC. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the second math requirement, one course must be a computer science course selected from the list of electives.
The following courses are recommended:
ANT 210 General Anthropology
ECO 151 Survey of Economics
ECO 252 Principles of Macroeconomics
HIS 112 World Civilizations II
HIS 132 American History II
PSY 241 Developmental Psychology
PSY 281 Abnormal Psychology
SPA 111 Elementary Spanish I
SPA 112 Elementary Spanish II
TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65
* Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

Application to a University
Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for social work will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, NCA&T, NCCU, NCSU, UNC-C, UNC-G, UNC-P, UNC-W, WCU.

Admission to the Major
Grade point average requirements vary and admission is competitive across the several programs in social work.

Pre-Major Associate in Arts Articulation Agreement: Sociology (A1010N)

GENERAL EDUCATION CORE
(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

ENGLISH COMPOSITION  6 SHC
English 111 Expository Writing
AND one of the following:
ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting
The following course is recommended:
ENG 112 Argument-Based Research

HUMANITIES/FINE ARTS  12 SHC
Four courses from three discipline areas are required.
One course must be a communications course:
COM 110 Introduction to Communications
COM 120 Interpersonal Communication
COM 231 Public Speaking
One course must be a literature course:
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 251 World Literature I
ENG 252 World Literature II
Two additional courses from the following discipline areas are required: ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA.

SOCIAL/BEHAVIORAL SCIENCES  12 SHC
Four courses from three discipline areas are required.
One course must be a history course:
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 131 American History I
HIS 132 American History II
The following course is required:
SOC 210 Introduction to Sociology
One of the following courses is required:
SOC 213 Sociology of the Family
SOC 220 Social Problems (3 SHC)
SOC 225 Social Diversity (3 SHC)
One course from the following discipline areas is required:
ANT, ECO, GEO, POL, PSY.

NATURAL SCIENCES  8 SHC
Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required. For course listing, refer to the List of General Education Core Courses for the Associate in Arts Degree – Natural Sciences section.

MATHEMATICS  6 SHC
Two courses are required.
Students must select MAT 161 College Algebra or higher.
Students must select one of the following courses:
CIS 110 Introduction to Computers
CIS 115 Introduction to Programming and Logic
MAT 155 Statistical Analysis
The following course is recommended:
MAT 155 Statistical Analysis

OTHER REQUIRED HOURS  20-21 SHC

HEALTH/PHYSICAL EDUCATION  2 SHC
Students must select 2 SHC of HEA or PED courses.

ELECTIVES  18 SHC
Students must select 18 additional hours of approved college transfer courses to total 64 hours. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the second math requirement, one course in computer science must be selected from the list of electives.
TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM: 64-65
* Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.
language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for Sociology will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G, UNC-P, UNC-W, WCU, WSSU.

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in sociology.

**Pre-Major Associate in Arts Articulation Agreement: Speech/Communication (A1010O)**

**GENERAL EDUCATION CORE** 44 SHC

(For complete course listing by prefix, refer to the List of General Education Core Courses for the Associate in Arts Degree)

**ENGLISH COMPOSITION** 6 SHC

- English 111 Expository Writing
- AND one of the following:
  - ENG 112 Argument-Based Research
  - ENG 113 Literature-Based Research
  - ENG 114 Professional Research and Reporting

**HUMANITIES/FINE ARTS** 12 SHC

Four courses from three discipline areas are required. The following course is required:

- COM 110 Introduction to Communications

One course must be a literature course:

- ENG 231 American Literature I
- ENG 241 British Literature I
- ENG 252 Western World Literature I

Two additional courses from the following discipline areas are required:

- ART, DAN, DRA, ENG, FRE, GER, HUM, MUS, PHI, REL, SPA

The following courses are recommended:

- DRA 122 Oral Interpretation
- HUM 160 Introduction to Film

**SOCIAL/BEHAVIORAL SCIENCES** 12 SHC

Four courses from three discipline areas are required.

One course must be a history course:

- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 131 American History I
- HIS 132 American History II

The following course is required:

- PSY 150 General Psychology

Two courses from the following discipline areas are required, to include at least one additional discipline: ANT, ECO, GEO, HIS, POL, PSY, SOC.

The following courses are recommended:

**SOC 210 Intro to Sociology**

**OR**

**SOC 225 Social Diversity**

**ANT 210 General Anthropology**

**OR**

**ANT 220 Cultural Anthropology**

**NATURAL SCIENCES** 8 SHC

Two courses from the biological and physical science disciplines, including accompanying laboratory work, are required.

**MATHEMATICS** 6 SHC

Two courses are required.

Students must complete MAT 161 College Algebra or higher.

The following courses are recommended:

- CIS 110 Introduction to Computers
- CIS 115 Introduction to Programming and Logic
- MAT 155 Statistical Analysis

**OTHER REQUIRED HOURS** 20-21 SHC

The following courses are required:

- COM 120 Interpersonal Communication
- COM 231 Public Speaking

**HEALTH/PHYSICAL EDUCATION** 2 SHC

Students must select 2 SHC of HEA or PED courses.

**ELECTIVES**

Students must select 12 additional hours of approved college transfer courses to total 64 hours. For complete course listing, refer to the List of General Electives for the Associate in Arts Degree. If not taken to satisfy the second math requirement, one course must be a computer science course selected from the list of electives.

The following courses are recommended:

- COM 140 Intercultural Communication
- MAT 155 Statistical Analysis

**TOTAL SEMESTER HOURS CREDIT (SHC) IN PROGRAM:** 64-65

*Students must meet the receiving university’s foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.

**Application to a University**

Admission application deadlines vary; students must meet the deadline for the university to which they plan to transfer. Upon successful completion of the Associate in Arts degree, students who meet the requirements outlined in this pre-major articulation agreement for speech/communication will be eligible to be considered for admission as juniors to the universities offering the baccalaureate degree: ASU, ECU, ECSU, FSU, NCA&T, NCCU, NCSU, UNC-A, UNC-CH, UNC-C, UNC-G.

**Admission to the Major**

Grade point average requirements vary and admission is competitive across the several programs in speech/communication.
## ASSOCIATE DEGREE CHECK SHEET

Name:___________________________________________________________ SS#: __________________________________

Advisor:_______________________________ Office Location:____________________ Phone#:________________________

Intended Degree: (Circle) A.A. A.S. A.F.A. A.G.E. NONE

Comprehensive Articulation Agreement (CAA) Participant: (Circle) Yes No

Pre-Major/Concentration:__________________________________________

Transfer Credits Accepted:________________________________________

### GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Goal</th>
<th>Course Description</th>
<th>Hours Required</th>
<th>Hours Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCC GOAL II</td>
<td>English Composition/Communications</td>
<td>( )</td>
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<tr>
<td></td>
<td>English</td>
<td></td>
<td>( )</td>
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<td>Communications</td>
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<td>CPCC GOAL III and VIII</td>
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<td></td>
<td>Science</td>
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<td>Computer Skills</td>
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<tr>
<td>CPCC GOAL VII</td>
<td>Behavioral and Social Sciences</td>
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<tr>
<td>CPCC GOAL IX</td>
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<td>CPCC GOAL X</td>
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<td>ELECTIVES</td>
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64
## ACA - Academic/College Success Skills

<table>
<thead>
<tr>
<th>Course Prefixes</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACA</td>
<td>Academic/College Success Skills</td>
</tr>
<tr>
<td>ACC</td>
<td>Accounting</td>
</tr>
<tr>
<td>AHR</td>
<td>Air Conditioning, Heating and Refrigeration</td>
</tr>
<tr>
<td>ANT</td>
<td>Anthropology</td>
</tr>
<tr>
<td>ARC</td>
<td>Architectural Technology</td>
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<tr>
<td>ART</td>
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<td>ASL</td>
<td>American Sign Language</td>
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<td>AST</td>
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<td>Automation Training</td>
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<td>AUB</td>
<td>Automotive Body Repair</td>
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<td>BPA</td>
<td>Baking and Pastry Arts</td>
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<td>Blueprint Reading</td>
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<td>BUS</td>
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<tr>
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<td>Chemistry</td>
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<tr>
<td>CIV/CSC</td>
<td>Computer Information Systems</td>
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<tr>
<td>CJC</td>
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<td>COM</td>
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<td>CMT</td>
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<td>Cardiovascular Technology</td>
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<td>DDF</td>
<td>Design Drafting</td>
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<td>Developmental Disabilities</td>
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<tr>
<td>DEN</td>
<td>Dental Assisting/Hygiene</td>
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<td>DES</td>
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<td>ENG</td>
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<td>FIP</td>
<td>Fire Protection Technology</td>
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<td>FLO</td>
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<tr>
<td>HEA</td>
<td>Health</td>
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<tr>
<td>HET</td>
<td>Heavy Equipment and Transport Technology -Diesel Mechanics</td>
</tr>
<tr>
<td>HIS</td>
<td>History</td>
</tr>
<tr>
<td>HIT</td>
<td>Health Information Technology</td>
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<tr>
<td>HOR</td>
<td>Horticulture Technology</td>
</tr>
<tr>
<td>HRM</td>
<td>Hotel and Restaurant Management</td>
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<tr>
<td>HSE</td>
<td>Human Services Technology</td>
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<td>HUM</td>
<td>Humanities</td>
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<tr>
<td>HYD</td>
<td>Hydraulic</td>
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<tr>
<td>INT</td>
<td>International Business</td>
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<tr>
<td>IPP</td>
<td>Interpreter Education</td>
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<tr>
<td>ISC</td>
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<td>JOU</td>
<td>Journalism</td>
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<td>LEX</td>
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<tr>
<td>MEC</td>
<td>Mechanical Engineering Technology</td>
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<td>MED</td>
<td>Medical Assisting</td>
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<tr>
<td>MKT</td>
<td>Marketing and Retailing</td>
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<td>MLT</td>
<td>Medical Laboratory Technology</td>
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<td>MNT</td>
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<td>MUS</td>
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<tr>
<td>NET</td>
<td>Networking Technology</td>
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<td>NOS</td>
<td>Networking Operating System</td>
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<td>NUR</td>
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<td>OST</td>
<td>Office Systems Technology</td>
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<tr>
<td>PCI</td>
<td>Process Control Instrumentation</td>
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<td>PED</td>
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<td>POL</td>
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<td>Printing</td>
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<td>Psychology</td>
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<td>RCP</td>
<td>Respiratory Therapy</td>
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<td>RED</td>
<td>Reading</td>
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<td>Religion</td>
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<td>SAB</td>
<td>Substance Abuse</td>
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<td>SEC</td>
<td>Information Systems Security</td>
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<td>SGD</td>
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<td>SOC</td>
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<td>Surgical Technology</td>
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<td>TRF</td>
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<td>WEB</td>
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<td>WLD</td>
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### ACA 111 College Student Success

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Prerequisites: None
Corequisites: None

This course introduces the college’s physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives. This course is also available through the Virtual Learning Community (VLC).
### ACA 118 College Study Skills

**Prerequisites:**
Corequisites: None

This course covers skills and strategies designed to improve study behaviors. Topics include time management, note taking, test taking, memory techniques, active reading strategies, critical thinking, communication skills, learning styles, and other strategies for effective learning. Upon completion, students should be able to apply appropriate study strategies and techniques to the development of an effective study plan. This course is also available through the Virtual Learning Community (VLC).

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
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</tbody>
</table>

### ACA 120 Career Assessment

**Prerequisites:**
Corequisites: None

This course provides the information and strategies necessary to develop clear personal, academic, and professional goals. Topics include personality styles, goal setting, various college curricula, career choices, and campus leadership development. Upon completion, students should be able to clearly state their personal, academic, and professional goals and have a feasible plan of action to achieve those goals. This course is also available through the Virtual Learning Community (VLC).

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
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<tr>
<td>1</td>
<td>0</td>
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</tbody>
</table>

### ACA 121 Managing a Team

**Prerequisites:** None
Corequisites: None

This course focuses on the process of the individual with an awareness of the reality in the collective teamwork approach for the workplace emphasizing process-orientation. Topics include how teams work, team effectiveness, team-building techniques, positive thinking, and leadership principles. Upon completion, students should be able to demonstrate an understanding of how teamwork strengthens ownership, involvement, and responsibility in the workplace.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>1</td>
<td>0</td>
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</table>

### ACA 220 Professional Transition

**Prerequisites:** None
Corequisites: None

This course provides preparation for meeting the demands of employment or education beyond the community college experience. Emphasis is placed on strategic planning, gathering information on workplaces or colleges, and developing human interaction skills for professional, academic, and/or community life. Upon completion, students should be able to successfully make the transition to appropriate workplaces or senior institutions.

**ACC - Accounting**

### ACC 110 Ten-Key Skills

**Prerequisites:**
Corequisites: None

This course is designed to enable mastery of the “touch system” on a ten-key device. Emphasis is placed on the “touch system” on a ten-key device. Upon completion, students should be able to use the “touch system” on a ten-key device in making computations necessary in accounting.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tr>
<td>0</td>
<td>2</td>
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</table>

### ACC 115 College Accounting

**Prerequisites:** RED 090 and MAT 070 with grades of C or better or appropriate placement test scores.
Corequisites: None

This course introduces basic accounting principles for a business. Topics include the complete accounting cycle with end-of-period statements, bank reconciliation, payrolls, and petty cash. Upon completion, students should be able to demonstrate an understanding of accounting principles and apply those skills to a business organization.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
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</tbody>
</table>

### ACC 120 Principles of Financial Accounting

**Prerequisites:** RED 090 and MAT 070 with grades of C or better.
Corequisites: None

This course introduces business decision-making using accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirements.

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<th>Lecture</th>
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<td>2</td>
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</table>

### ACC 121 Principles of Managerial Accounting

**Prerequisites:** ACC 120 with a grade of C or better.
Corequisites: None

This course is a continuation of accounting principles. Emphasis is placed on managerial accounting concepts for external and internal analysis, reporting and decision-making. Upon completion, students should be able to analyze and interpret transactions relating to managerial concepts including product costing systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirements.

<table>
<thead>
<tr>
<th>Lecture</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
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</tbody>
</table>

### ACC 129 Individual Income Taxes

**Prerequisites:** ACC 120 with a grade of C or better.
Corequisites: None

This course introduces the relevant laws governing individual income taxation. Topics include tax law, electronic research and methodologies, and the use of technology for preparation of individual tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various individual tax forms.

<table>
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<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

### ACC 130 Business Income Taxes

**Prerequisites:** ACC 129 with a grade of C or better.
Corequisites: None

This course introduces business tax law relating to business organizations, electronic research and methodologies, and the use of technology for preparation of business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various business tax forms.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tr>
<td>2</td>
<td>2</td>
<td>3</td>
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</table>

### ACC 140 Payroll Accounting

**Prerequisites:** ACC 115 or ACC 120 with a grade of C or better.
Corequisites: None

This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages, calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.
ACC 149 Introduction to Accounting Spreadsheets 1 2 2
Prerequisites: CIS 110 and ACC 115 or ACC 120 with grades of C or better.
Corequisites: None
This course provides a working knowledge of computer spreadsheets and their use in accounting. Topics include pre-programmed problems, model-building problems, beginning-level macros, graphics, and what-if analysis enhancements of template problems. Upon completion, students should be able to use a computer spreadsheet to complete many of the tasks required in accounting.

ACC 150 Accounting Software Applications 1 2 2
Prerequisites: ACC 115 or ACC 120 with a grade of C or better.
Corequisites: None
This course introduces computer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting software package to solve accounting problems.

ACC 151 Accounting Spreadsheet Application 1 2 2
Prerequisites: ACC 149 with a grade of C or better.
Corequisites: None
This course is designed to facilitate the use of spreadsheet technology as applied to accounting principles. Emphasis is placed on using spreadsheet software as a problem-solving and decision-making tool. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered. Software used includes, but is not limited to, Microsoft Excel and Microsoft Access.

ACC 220 Intermediate Accounting I 3 2 4
Prerequisites: ACC 120 with a grade of C or better.
Corequisites: None
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analyses of financial statements. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.

ACC 221 Intermediate Accounting II 3 2 4
Prerequisites: ACC 220 with a grade of C or better.
Corequisites: None
This course is a continuation of ACC 220. Emphasis is placed on special problems which may include leases, bonds, investments, ratio analyses, present value applications, accounting changes, and corrections. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

ACC 225 Cost Accounting 3 0 3
Prerequisites: ACC 121 with a grade of C or better.
Corequisites: None
This course introduces the nature and purposes of cost accounting as an information system for planning and control. Topics include direct materials, direct labor, factory overhead, process, job order, and standard cost systems. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered. Emphasis will be placed on how accounting data can be interpreted and used by management in planning and controlling business activities.

ACC 240 Government and Not-for-Profit Accounting 3 0 3
Prerequisites: ACC 121 with a grade of C or better.
Corequisites: None
This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

ACC 250 Advanced Accounting 3 0 3
Prerequisites: ACC 220 with a grade of C or better.
Corequisites: None
This course is designed to analyze special accounting issues, which may include business combinations, partnerships, international accounting, estates, and trusts. Emphasis is placed on analyzing transactions and preparing working papers and financial statements. Upon completion, students should be able to solve a wide variety of problems by advanced application of accounting principles and procedures.

ACC 269 Auditing and Assurance Services 3 0 3
Prerequisites: ACC 220 with a grade of C or better.
Corequisites: None
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Coverage will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.

ACC 270 International Accounting 3 0 3
Prerequisites: ACC 120 with grade of C or better.
Corequisites: None
This course includes identifying, recording, and interpreting financial information for accounting systems used in different countries. Topics include currency exchange rates, methods of setting and selecting transfer prices, practices used to account for rates of inflation, and major types of taxes. Upon completion, students should be able to describe accounting systems and their impacts on different currencies and demonstrate a basic knowledge of international accounting. This course is a unique concentration requirement in the International Business concentration in the Business Administration program.

Advertising
(See GRD Graphic Design)
**AHR - Air Conditioning, Heating and Refrigeration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
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<td>AHR 110</td>
<td>Introduction to Refrigeration</td>
<td>2</td>
<td>6</td>
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<tr>
<td></td>
<td>Prerequisites:</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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<tr>
<td></td>
<td>This course introduces the basic refrigeration</td>
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<td></td>
<td>process used in mechanical refrigeration and</td>
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<td></td>
<td>air conditioning systems. Topics include</td>
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<tr>
<td></td>
<td>terminology, safety, and identification and</td>
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<td></td>
<td>function of components; refrigeration cycle; and</td>
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<td></td>
<td>tools and instrumentation used in</td>
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<td></td>
<td>mechanical refrigeration systems. Upon completion,</td>
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<td></td>
<td>students should be able to identify</td>
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<td></td>
<td>refrigeration systems and components, explain</td>
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<td></td>
<td>the refrigeration process, and use the tools and</td>
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<td></td>
<td>instrumentation of the trade.</td>
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<td>AHR 111</td>
<td>HVACR Electricity</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course introduces electricity as it applies</td>
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<td></td>
<td>to HVACR equipment. Emphasis is placed on</td>
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<td></td>
<td>power sources, interaction of electrical</td>
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<td></td>
<td>components, wiring of simple circuits, and the</td>
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<td>use of electrical test equipment. Upon</td>
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<td>completion, students should be able to</td>
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<td>demonstrate good wiring practices and the ability</td>
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<td>to read simple wiring diagrams.</td>
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<tr>
<td>AHR 112</td>
<td>Heating Technology</td>
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<td></td>
<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course covers the fundamentals of heating</td>
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<td></td>
<td>including oil, gas, and electric heating</td>
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<td></td>
<td>systems. Topics include safety, tools</td>
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<td></td>
<td>and instrumentation, system operating</td>
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<td></td>
<td>characteristics, installation techniques,</td>
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<td>efficiency testing, electrical power, and control</td>
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<td>systems. Upon completion, students should</td>
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<td></td>
<td>be able to explain the basic oil, gas, and</td>
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<td></td>
<td>electrical heating systems and describe the</td>
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<td></td>
<td>major components of a heating system.</td>
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<tr>
<td>AHR 113</td>
<td>Comfort Cooling</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course covers the installation procedures,</td>
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<td></td>
<td>system operations, and maintenance of</td>
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<td></td>
<td>residential and light commercial comfort</td>
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<td></td>
<td>cooling systems. Topics include</td>
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<td></td>
<td>terminology, component operation, and testing</td>
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<td>and repair of equipment used to control</td>
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<td></td>
<td>and produce assured comfort levels. Upon</td>
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<td>completion, students should be able to use</td>
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<td></td>
<td>psychometrics, manufacturer specifications, and</td>
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<td>test instruments to determine proper system</td>
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<td></td>
<td>operation.</td>
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<tr>
<td>AHR 114</td>
<td>Heat Pump Technology</td>
<td>2</td>
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<td></td>
<td>Prerequisites: AHR 110 or AHR 113</td>
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<td></td>
<td>Corequisites: None</td>
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<td></td>
<td>This course covers the principles of air source</td>
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<td>and water source heat pumps. Emphasis is placed</td>
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<td></td>
<td>on safety, modes of operation, defrost systems,</td>
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<td>refrigerant charging, and system</td>
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<td>performance. Upon completion, students should</td>
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<td>be able to understand and analyze system</td>
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<td>performance and perform routine service</td>
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<tr>
<td></td>
<td>procedures.</td>
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<tr>
<td>AHR 115</td>
<td>Refrigeration Systems</td>
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<td>Prerequisites: AHR 110</td>
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<td></td>
<td>Corequisites: None</td>
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<td></td>
<td>This course introduces refrigeration systems and</td>
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<td>applications. Topics include defrost</td>
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<td></td>
<td>methods, safety and operational control,</td>
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<td>refrigerant piping, refrigerant</td>
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<td></td>
<td>recovery and charging.</td>
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<td>and leak testing. Upon completion, students</td>
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<td>should be able to assist in installing and</td>
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<td>testing refrigeration systems and perform</td>
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<td></td>
<td>simple repairs.</td>
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</table>

**AHR 130 HVAC Controls**

| Prerequisites: AHR 111 or ELC 111 |
| Corequisites: None |
| This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort system controls. |

**AHR 133 HVAC Servicing**

| Prerequisites: None |
| Corequisites: None |
| This course covers the maintenance and servicing of HVAC equipment. Topics include testing, adjusting, maintaining, and troubleshooting HVAC equipment and record keeping. Upon completion, students should be able to adjust, maintain, and service HVAC equipment. |

**AHR 140 All-Weather Systems**

| Prerequisites: AHR 112 or AHR 113 |
| Corequisites: None |
| This course covers the principles of combination heating and cooling systems including gas-electric, all-electric, and oil-electric systems. Topics include PTAC’s and package and split-system units. Upon completion, students should be able to understand systems performance and perform routine maintenance procedures. |

**AHR 160 Refrigerant Certification**

| Prerequisites: |
| Corequisites: None |
| This course covers the requirements for the EPA certification examinations. Topics include small appliances, high pressure systems, and low pressure systems. Upon completion, students should be able to demonstrate knowledge of refrigerants and be prepared for the EPA certification examinations. |

**AHR 180 HVACR Customer Relations**

| Prerequisites: |
| Corequisites: None |
| This course covers common business and customer relation practices that may be encountered in HVACR. Topics include business practices, appearance of self and vehicle, ways of handling customer complaints, invoices, telephone communications, and warranties. Upon completion, students should be able to present themselves to customers in a professional manner, understand how the business operates, complete invoices, and handle complaints. |

**AHR 211 Residential System Design**

<p>| Prerequisites: |
| Corequisites: None |
| This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system. |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>AHR 212</td>
<td>Advanced Comfort Systems</td>
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<td>Prerequisites: AHR 114</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps.</td>
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<td>AHR 215</td>
<td>Commercial HVAC Controls</td>
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<td>Prerequisites: AHR 111 or ELC 111</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course introduces HVAC control systems used in commercial applications. Topics include electric/electronic control systems, pneumatic control systems, DDC temperature sensors, humidity sensors, pressure sensors, wiring, controllers, actuators, and controlled devices. Upon completion, students should be able to verify or correct the performance of common control systems with regard to sequence of operation and safety.</td>
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<td>AHR 220</td>
<td>Commercial Building Codes</td>
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<td>2 0 2</td>
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<td></td>
<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course covers the appropriate sections of the North Carolina State Building Code that govern the installation of commercial comfort, refrigeration, and mechanical systems. Emphasis is placed on using and understanding applications sections of the North Carolina State Building Code. Upon completion, students should be able to use the North Carolina State Building Code to locate information regarding the installation of commercial systems.</td>
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<td>AHR 225</td>
<td>Commercial System Design</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course covers the principles of designing heating and cooling systems for commercial buildings. Emphasis is placed on commercial heat loss/gain calculations, applied psychometrics, air-flow calculations, air distribution system design, and equipment selection. Upon completion, students should be able to calculate heat loss/gain, design and size air and water distribution systems, and select equipment.</td>
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<td>AHR 235</td>
<td>Refrigeration Design</td>
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<td>Prerequisites: AHR 110</td>
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<td>Corequisites: None</td>
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<td>This course covers the principles of commercial refrigeration system operation and design. Topics include walk-in coolers, walk-in freezers, system components, load calculations, equipment selection, defrost systems, refrigerant line sizing, and electrical controls. Upon completion, students should be able to design, adjust, and perform routine service procedures on a commercial refrigeration system.</td>
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<td>AHR 240</td>
<td>Hydronic Heating</td>
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<td>Prerequisites: AHR 112</td>
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<td>Corequisites: None</td>
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<td>This course covers the accepted procedures for proper design, installation, and balance of hydronic heating systems for residential or commercial buildings. Topics include heating equipment; pump, terminal unit, and accessory selection; piping system selection and design; and pipe sizing and troubleshoot-</td>
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<td>ing. Upon completion, students should be able to assist with the proper design, installation, and balance of typical hydronic systems.</td>
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<td>AHR 293</td>
<td>Selected Topics in HVACR</td>
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<td></td>
<td>Prerequisites: None</td>
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<td></td>
<td>Corequisites: None</td>
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<td>This course covers selected topics in HVACR not covered in the regular courses. Subject matter covered will provide the student with up-to-date information on various heating, ventilating, air conditioning and refrigeration applications.</td>
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**ANT - Anthropology**

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<tr>
<td>ANT 220</td>
<td>General Anthropology</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.</td>
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<tr>
<td>ANT 221</td>
<td>Comparative Cultures</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course provides an ethnographic survey of societies around the world covering their distinctive cultural characteristics and how these relate to cultural change. Emphasis is placed on the similarities and differences in social institutions such as family, economics, politics, education, and religion. Upon completion, students should be able to demonstrate knowledge of a variety of cultural adaptive strategies. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.</td>
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**ARC - Architectural Technology**

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<tr>
<td>ARC 111</td>
<td>Introduction to Arch Technology</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and</td>
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oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum architectural standards.

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<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Notes</th>
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<tbody>
<tr>
<td>ARC 112</td>
<td>Construction Materials &amp; Methods</td>
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<tr>
<td>ARC 113</td>
<td>Residential Arch Tech</td>
<td>Prequisites: ARC 111 Corequisites: None</td>
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<td>ARC 114</td>
<td>Architectural CAD</td>
<td>Prequisites: ARC 111 Corequisites: None</td>
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<td>ARC 120</td>
<td>Interior Design-Residential</td>
<td>Prequisites: ARC 111 Corequisites: None</td>
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<tr>
<td>ARC 131</td>
<td>Building Codes</td>
<td>Prequisites: ARC 112, ARC 133 Corequisites: None</td>
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<tr>
<td>ARC 132</td>
<td>Specifications and Contracts</td>
<td>Prequisites: ARC 112, ARC 133 Corequisites: None</td>
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<td>ARC 133</td>
<td>Construction Document Analysis</td>
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<td>ARC 160</td>
<td>Residential Design</td>
<td>Prequisites: ARC 111 Corequisites: ARC 112</td>
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<td>ARC 192</td>
<td>Selected Topics in Architectural Technology</td>
<td>Prequisites: Enrollment in the program Corequisites: None</td>
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<tr>
<td>ARC 197</td>
<td>Seminar in Architectural Technology</td>
<td>Prequisites: Enrollment in the program Corequisites: None</td>
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<td>ARC 212</td>
<td>Commercial Construction Tech</td>
<td>Prequisites: ARC 113, ARC 114 and ARC 133 Corequisites: None</td>
<td></td>
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</tr>
<tr>
<td>ARC 213</td>
<td>Design Project</td>
<td>Prequisites: ARC 131, ARC 212, ARC 230, and CIV 220 Corequisites: None</td>
<td></td>
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<tr>
<td>ARC 220</td>
<td>Advanced Architect CAD</td>
<td>Prequisites: ARC 114 Corequisites: None</td>
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<tr>
<td>ARC 221</td>
<td>Architectural 3-D CAD</td>
<td>Prequisites: ARC 114 Corequisites: None</td>
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</tr>
</tbody>
</table>

ARC 112 Construction Materials & Methods
Prerequisites: None
This course introduces construction materials and their methodologies. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.

ARC 113 Residential Arch Tech
Prerequisites: ARC 111
Corequisites: None
This course covers intermediate residential working drawings. Topics include residential plans, elevations, sections, details, schedules, and other related topics. Upon completion, students should be able to prepare a set of residential working drawings that are within accepted architectural standards.

ARC 114 Architectural CAD
Prerequisites: ARC 111
Corequisites: None
This course introduces basic architectural CAD techniques. Topics include basic commands and system hardware and software. Upon completion, students should be able to prepare and plot architectural drawings to scale within accepted architectural standards.

ARC 120 Interior Design-Residential
Prerequisites: ARC 111
Corequisites: None
This course covers principles of light construction and materials. Topics include terminology, components, and light construction codes. Upon completion, students should be able to understand light construction principles.

ARC 131 Building Codes
Prerequisites: ARC 112, ARC 133
Corequisites: None
This course covers the methods of researching building codes for specific projects. Topics include residential and commercial building codes. Upon completion, students should be able to determine the code constraints governing residential and commercial projects.

ARC 132 Specifications and Contracts
Prerequisites: ARC 112, ARC 133
Corequisites: None
This course covers the development of written specifications and the implications of different contractual arrangements. Topics include specification development, contracts, bidding material research, and agency responsibilities. Upon completion, students should be able to write a specification section and demonstrate the ability to interpret contractual responsibilities.

ARC 133 Construction Document Analysis
Prerequisites: Corequisites: None
This course covers the analysis of building construction drawings. Emphasis is placed on material identification, understanding construction details, and the relationships of building structural, mechanical, plumbing, and electrical systems. Upon completion, students should be able to analyze a set of construction drawings by identifying building construction materials and understanding construction details and engineering systems.

ARC 160 Residential Design
Prequisites: ARC 111 Corequisites: ARC 112
This course introduces the methodology of basic residential design. Topics include residential site design, space organization and layout, residential styles, and the development of schematic design. Upon completion, students should be able to design a residence.

ARC 192 Selected Topics in Architectural Technology
Prequisites: Enrollment in the program Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ARC 197 Seminar in Architectural Technology
Prequisites: Enrollment in the program Corequisites: None
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

ARC 212 Commercial Construction Tech
Prequisites: ARC 113, ARC 114 and ARC 133 Corequisites: None
This course introduces regional construction techniques for commercial plans, Elevations, sections, and details. Topics include production of a set of commercial contract documents and other related topics. Upon completion, students should be able to prepare a set of working drawings in accordance with building codes.

ARC 213 Design Project
Prequisites: ARC 131, ARC 212, ARC 230, and CIV 220 Corequisites: None
This course provides the opportunity to design and prepare a set of contract documents within an architectural setting. Topics include schematic design, design development, construction documents, and other related topics. Upon completion, students should be able to prepare a set of commercial contract documents.

ARC 220 Advanced Architect CAD
Prequisites: ARC 114 Corequisites: None
This course provides file management, productivity, and CAD customization skills. Emphasis is placed on developing advanced proficiency techniques. Upon completion, students should be able to create symbol libraries, compose sheets with multiple details, and use advanced drawing and editing commands.

ARC 221 Architectural 3-D CAD
Prequisites: ARC 114 Corequisites: None
This course introduces architectural three-dimensional CAD applications. Topics include three-dimensional drawing, coordinate systems, viewing, rendering, modeling, and output options.
Upon completion, students should be able to prepare architectural three-dimensional drawings and renderings.

**ARC 230 Environmental Systems**  
3 3 4  
Prerequisites: ARC 114, ARC 133 and MAT 121  
Corequisites: None  
This course introduces plumbing, mechanical (HVAC), and electrical systems for the architectural environment. Topics include basic plumbing, mechanical, and electrical systems for residential and/or commercial buildings with an introduction to selected code requirements. Upon completion, students should be able to develop schematic drawings for plumbing, mechanical, and electrical systems and perform related calculations.

**ARC 231 Arch Presentations**  
Prerequisites: ARC 111  
Corequisites: None  
This course introduces architectural presentation techniques. Topics include perspective drawing, shadow projection, texturization, rendered plans, elevations, and other related topics. Upon completion, students should be able to present ideas graphically and do rendered presentation drawings.

**ARC 235 Architectural Portfolio**  
Prerequisites: None  
Corequisites: None  
This course covers the methodology for the creation of an architectural portfolio. Topics include preparation of marketing materials and a presentation strategy using conventional and/or digital media. Upon completion, students should be able to produce an architectural portfolio of selected projects.

**ARC 240 Site Planning**  
Prerequisites: ARC 111 and ARC 114  
Corequisites: None  
This course introduces the principles of site planning, grading plans, and earthwork calculations. Topics include site analysis, site work, site utilities, cut and fill, soil erosion control, and other related topics. Upon completion, students should be able to prepare site development plans and details and perform cut and fill calculations.

**ARC 250 Survey of Architecture**  
Prerequisites:  
Corequisites: None  
This course introduces the historical trends in architectural form. Topics include historical and current trends in architecture. Upon completion, students should be able to demonstrate an understanding of significant historical and current architectural styles.

**ARC 262 Arch Animation & Video**  
Prerequisites: ARC 221  
Corequisites: None  
This course covers three-dimensional architectural animation. Topics include storyboarding, rendered animation creation, audio and video input/output, and techniques for camera and object movement in and around buildings. Upon completion, students should be able to produce rendered architectural animations with sound and archive data to selected media.

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**ART - Art**

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<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ART 111 Art Appreciation</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
| Prerequisites:  
Corequisites: None  
This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media. Concepts related to media and technique will be introduced. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.** |

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<th>Lab</th>
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</thead>
<tbody>
<tr>
<td>ART 114 Art History Survey I</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
| Prerequisites:  
Corequisites: None  
This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.** |

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<tr>
<th>Course Code</th>
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<th>Lab</th>
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</thead>
<tbody>
<tr>
<td>ART 115 Art History Survey II</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
| Prerequisites:  
Corequisites: None  
This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.** |

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<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>ART 116 Survey of American Art</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
| Prerequisites:  
Corequisites: None  
This course covers the development of American art forms from colonial times to the present. Emphasis is placed on architecture, painting, sculpture, graphics, and the decorative arts. Upon completion, students should be able to demonstrate understanding of the history of the American creative experience. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.** |

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<tr>
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<th>Lecture</th>
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<tbody>
<tr>
<td>ART 117 Non-Western Art History</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
| Prerequisites:  
Corequisites: None  
This course introduces non-Western cultural perspectives. Emphasis is placed on, but not limited to, African, Oriental, and Oceanic art forms throughout history. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of non-Western social and cultural development. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.** |
This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art.

**ART 121 Design I**  
**Prerequisites:** None  
**Corequisites:** None

This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. Students will apply theories of perspective and composition using media that includes graphite, ink, charcoal and conte crayon.

**ART 131 Drawing I**  
**Prerequisites:** None  
**Corequisites:** None

This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts. Students will demonstrate an understanding of these concepts in assigned projects.

**ART 132 Drawing II**  
**Prerequisites:** ART 131  
**Corequisites:** None

This course continues instruction in the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques. Approaches to drawing the human form and color problems will be introduced.

**ART 135 Figure Drawing I**  
**Prerequisites:** ART 131  
**Corequisites:** None

This course introduces rendering the human figure with various drawing materials. Emphasis is placed on the use of the visual elements, anatomy, and proportion in the representation of the draped and undraped figure. Upon completion, students should be able to demonstrate competence in drawing the human figure.

**ART 171 Computer Art I**  
**Prerequisites:** None  
**Corequisites:** None

This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images.

**ART 231 Printmaking I**  
**Prerequisites:** None  
**Corequisites:** None

This course introduces printmaking: its history, development techniques, and processes. Emphasis is placed on basic applica-

**ART 232 Printmaking II**  
**Prerequisites:** ART 231  
**Corequisites:** None

This course includes additional methods and printmaking processes. Emphasis is placed on the printed image as related to method, source, and concept. Upon completion, students should be able to produce expressive images utilizing both traditional and innovative methods.

**ART 235 Figure Drawing II**  
**Prerequisites:** ART 135  
**Corequisites:** None

This course extends the study and rendering of the draped and undraped human figure. Emphasis is placed on the exploration of materials and approaches to drawing. Upon completion, students should be able to demonstrate creativity in the representation of the figure.

**ART 240 Painting I**  
**Prerequisites:** None  
**Corequisites:** None

This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. Students will principally work on easels using oil or acrylic.

**ART 241 Painting II**  
**Prerequisites:** ART 240  
**Corequisites:** None

This course extends the study and rendering of the draped and undraped human figure. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. As in Painting I, students will principally work on easels using oil or acrylic.

**ART 242 Landscape Painting**  
**Prerequisites:** ART 240  
**Corequisites:** None

This course introduces the elements and principles of design with investigation into image source and development. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course introduces relief, intaglio, serigraphy and planographic processes.

**ART 243 Portrait Painting**  
**Prerequisites:** ART 240  
**Corequisites:** None

This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course introduces relief, intaglio, serigraphy and planographic processes.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ART 244</td>
<td>Watercolor</td>
<td>0 6 3</td>
<td>This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media.</td>
</tr>
<tr>
<td>ART 245</td>
<td>Metals I</td>
<td>0 6 3</td>
<td>This course introduces basic metal design in traditional and contemporary art forms using brass, copper, and silver. Emphasis is placed on designing and fabricating jewelry, small sculptures, and utilitarian objects. Upon completion, students should be able to design and produce small art objects.</td>
</tr>
<tr>
<td>ART 246</td>
<td>Metals II</td>
<td>0 6 3</td>
<td>This course provides a continuation of metal design utilizing basic methods of casting and other processes. Emphasis is placed on individualized design. Upon completion, students should be able to design and produce expressive forms.</td>
</tr>
<tr>
<td>ART 247</td>
<td>Jewelry I</td>
<td>0 6 3</td>
<td>This course introduces a basic understanding of the design and production of jewelry. Emphasis is placed on concepts and techniques using metals and other materials. Upon completion, students should be able to demonstrate an ability to use appropriate methods to create unique jewelry. Processes such as piercing, filing, forming and forging will be introduced.</td>
</tr>
<tr>
<td>ART 248</td>
<td>Jewelry II</td>
<td>0 6 3</td>
<td>This course is a continuation of the skills learned in ART 247. Emphasis is placed on the creation of individual designs that utilize a variety of techniques such as casting, cloisonné, and plique-a-jour. Upon completion, students should be able to create jewelry which demonstrates originality.</td>
</tr>
<tr>
<td>ART 260</td>
<td>Photography Appreciation</td>
<td>3 0 3</td>
<td>This course introduces the origins and historical development of photography. Emphasis is placed on the study of composition and history of photography as an art form. Upon completion, students should be able to recognize and produce, using color transparencies, properly exposed, well-composed photographs. Using their own 35mm cameras, students will receive instruction and practice in camera handling, films, filters, lenses, and composition.</td>
</tr>
<tr>
<td>ART 261</td>
<td>Photography I</td>
<td>0 6 3</td>
<td>This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition. Using their own 35mm camera to take photographs, students will develop printing techniques such as burning, dodging, controlling density and contrast, and basic photo finishing.</td>
</tr>
<tr>
<td>ART 262</td>
<td>Photography II</td>
<td>0 6 3</td>
<td>This course introduces the creative manipulation of alternative photographic materials and processes such as toning, hand coloring, infrared, and multiple exposure. Emphasis is placed on personal vision and modes of seeing. Upon completion, students should be able to create properly exposed images using a variety of photographic materials and processes.</td>
</tr>
<tr>
<td>ART 263</td>
<td>Color Photography</td>
<td>0 6 3</td>
<td>This course provides an introduction to the procedures and processes involved in color photography. Emphasis is placed on the study of light, filtration, exposure, and films along with the processing and printing of color negative materials. Upon completion, students should be able to demonstrate an understanding of color principles, theories, and processes by using them creatively in the production of color prints.</td>
</tr>
<tr>
<td>ART 264</td>
<td>Digital Photography I</td>
<td>1 4 3</td>
<td>This course introduces digital photography, equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
</tr>
<tr>
<td>ART 265</td>
<td>Digital Photography II</td>
<td>1 4 3</td>
<td>This course introduces digital photography, equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
</tr>
<tr>
<td>ART 266</td>
<td>Videography I</td>
<td>0 6 3</td>
<td>This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, storyboarding, and editing. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
</tr>
<tr>
<td>ART 267</td>
<td>Videography II</td>
<td>0 6 3</td>
<td>This course is designed to provide a framework for the production of a long-term video project. Emphasis is placed on realization of the unique creative vision. Upon completion, students should be able to produce a thematically coherent, edited video with sound and titling. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
</tr>
</tbody>
</table>
ART 275 Intro to Commercial Art 0 6 3
Prerequisites: None
Corequisites: None
This course introduces research methods in the museum setting. Emphasis is placed on the chronology, styles, periods, context, and meaning in art. Upon completion, students should be able to demonstrate the advantage of first-hand and on-site research.

ART 284 Ceramics II 0 6 3
Prerequisites: ART 283
Corequisites: None
This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to demonstrate a high level of technical competence in forming and glazing with a development of three-dimensional awareness. The aesthetics of pottery form are explored.

ART 285 Ceramics III 0 6 3
Prerequisites: ART 284
Corequisites: None
This course provides the opportunity for advanced self-determined work in sculptural and functional ceramics. Emphasis is placed on developing the technical awareness of clay bodies, slips, engobes, and firing procedures necessary to fulfill the student’s artistic goals. Upon completion, students should be able to demonstrate knowledge of materials and techniques necessary to successfully create original projects in the clay medium. Through contractual agreement with the instructor, students continue to explore personal expression using the medium of clay.

ART 286 Ceramics IV 0 6 3
Prerequisites: ART 285
Corequisites: None
This course provides the opportunity for advanced self-determined work in sculptural and functional ceramics. Emphasis is placed on developing the technical awareness of glaze materials, glaze formulation, and firing techniques necessary to fulfill the student’s artistic goals. Upon completion, students should be able to demonstrate knowledge of materials and techniques necessary to successfully create original projects in the clay medium. Through contractual agreement with the instructor, students continue to explore personal expression using the medium of clay.

ART 289 Museum Study 2 2 3
Prerequisites: None
Corequisites: None
This course introduces research methods in the museum setting. Emphasis is placed on the chronology, styles, periods, context, and meaning in art. Upon completion, students should be able to demonstrate the advantage of first-hand and on-site research.
**ASL - American Sign Language**
*(See also IPP Interpreter Education)*

**ASL 111 Elementary ASL I**
- **Lecture Lab Credit**: 3 0 3
- **Prerequisites**: None
- **Corequisites**: None
- This course introduces the fundamental elements of American Sign Language within a cultural context. Emphasis is placed on the development of basic expressive and receptive skills. Upon completion, students will be able to comprehend and respond with grammatical accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in humanities/fine arts.

**ASL 112 Elementary ASL II**
- **Lecture Lab Credit**: 3 0 3
- **Prerequisites**: ASL 111
- **Corequisites**: None
- This course is a continuation of ASL 111 focusing on the fundamental elements of American Sign Language in a cultural context. Emphasis is placed on the progressive development of expressive and receptive skills. Upon completion, the students should be able to comprehend and respond with increasing accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in humanities/fine arts.

**ASL 181 ASL Lab 1**
- **Lecture Lab Credit**: 0 2 1
- **Prerequisites**: None
- **Corequisites**: None
- This course provides an opportunity to enhance acquisition of the fundamental elements of American Sign Language. Emphasis is placed on the progressive development of basic expressive and receptive skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ASL 182 ASL Lab 2**
- **Lecture Lab Credit**: 0 2 1
- **Prerequisites**: ASL 181
- **Corequisites**: None
- This course provides an opportunity to enhance acquisition of the fundamental elements of American Sign Language. Emphasis is placed on the progressive development of basic expressive and receptive skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ASL 211 Intermediate ASL I**
- **Lecture Lab Credit**: 3 0 3
- **Prerequisites**: ASL 112
- **Corequisites**: None
- This course provides a review and expansion of the essential skills of American Sign Language. Emphasis is placed on the progressive development of expressive and receptive skills, study of authentic and representative literacy and cultural texts.

Upon completion, students should be able to communicate effectively, accurately, and creatively using American Sign Language about the past, present, and future. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in humanities/fine arts.

**ASL 212 Intermediate ASL II**
- **Lecture Lab Credit**: 3 0 3
- **Prerequisites**: ASL 211
- **Corequisites**: None
- This course provides a continuation of ASL 211. Emphasis is placed on the continuing development of expressive and receptive skills study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in humanities/fine arts.

**ASL 281 ASL Lab 3**
- **Lecture Lab Credit**: 0 2 1
- **Prerequisites**: ASL 182
- **Corequisites**: None
- This course provides an opportunity to enhance the review and the expansion of the essential skills of American Sign Language. Emphasis is placed on the progressive development of expressive and receptive skills study of and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in humanities/fine arts.

**AST - Astronomy**

**AST 111 Descriptive Astronomy**
- **Lecture Lab Credit**: 3 0 3
- **Prerequisites**: None
- **Corequisites**: None
- This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. To receive science credit toward the AA or AS degree you must register for and complete AST 111A. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.
AST 111A Descriptive Astronomy Lab 0 2 1
Prerequisites: None
Corequisites: AST 111

This course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course may be taken concurrently or subsequent to the completion of AST 111. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

AST 151 General Astronomy I 3 0 3
Prerequisites: None
Corequisites: None

The course introduces the science of modern astronomy with a concentration on the solar system. Emphasis is placed on the history and physics of astronomy and an introduction to the solar system, including the planets, comets, and meteors. Upon completion, students should be able to demonstrate a general understanding of the solar system. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

AST 151A General Astronomy I Lab 0 2 1
Prerequisites: None
Corequisites: AST *151

The course is a laboratory to accompany AST 151. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 151 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of the solar system. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

AST 152 General Astronomy II 3 0 3
Prerequisites: AST *151
Corequisites: None

The course is a continuation of AST 151 with primary emphasis beyond the solar system. Topics include the sun, stars, galaxies, and the larger universe, including cosmology. Upon completion, students should be able to demonstrate a working knowledge of astronomy. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

AST 152A General Astronomy II Lab 0 2 1
Prerequisites: AST*151
Corequisites: AST*152

The course is a laboratory to accompany AST 152. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 152 and which provide practical experience. Upon completion, students should be able to demonstrate a working knowledge of astronomy. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

AST 251 Observational Astronomy 1 3 2
Prerequisites: AST 111 or AST 152
Corequisites: None

This course covers the operation of the telescope and related observatory equipment. Emphasis is placed on the use of the telescope and related observatory equipment, including techniques of data collection, measurements, and data analysis. Upon completion, students should be able to set up a telescope and use the coordinate system to locate objects, collect data, and make measurements with the telescope.

**ATR - Automation Training**

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<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ATR 112 Intro to Automation</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.</td>
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**AUB - Automotive Body Repair**

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<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUB 111 Painting &amp; Refinishing I</td>
<td>2</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Prerequisites: AUB 111</td>
<td></td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces the proper procedures for using automotive refinishing equipment and materials in surface preparation and application. Topics include federal, state, and local regulations, personal safety, refinishing equipment and materials, surface preparation, masking, application techniques, and other related topics. Upon completion, students should be able to identify and use proper equipment and materials in refinishing following accepted industry standards.</td>
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<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>AUB 112 Painting &amp; Refinishing II</td>
<td>2</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Prerequisites: AUB 111</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers advanced painting techniques and technologies with an emphasis on identifying problems encountered by the refinishing technician. Topics include materials application, color matching, correction of refinishing problems, and other related topics. Upon completion, students should be able to perform spot, panel, and overall refinishing repairs and identify and correct refinishing problems.</td>
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<tr>
<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>AUB 114 Special Finishes</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Prerequisites: AUB 111</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces multistage finishes, custom painting, and protective coatings. Topics include base coats, advanced intermediate coats, clear coats, and other related topics. Upon completion, students should be able to identify and apply specialized finishes based on accepted industry standards.</td>
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<td>Course Code</td>
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<td>Prerequisites</td>
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<td>AUB 121 Non-Structural Damage I</td>
<td>1 4 3</td>
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<tr>
<td>AUB 122 Non-Structural Damage II</td>
<td>2 6 4</td>
<td>AUB 131</td>
<td>None</td>
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<tr>
<td>AUB 131 Structural Damage I</td>
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<tr>
<td>AUB 132 Structural Damage II</td>
<td>2 6 4</td>
<td>AUB 131</td>
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<td>AUB 134 Autobody MIG Welding</td>
<td>1 4 3</td>
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<tr>
<td>AUB 136 Plastics &amp; Adhesives</td>
<td>1 4 3</td>
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<tr>
<td>AUB 141 Mechanical &amp; Electrical Components I</td>
<td>2 2 3</td>
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<tr>
<td>AUB 162 Autobody Estimating</td>
<td>1 2 2</td>
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**AUT - Automotive Technology**

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<tr>
<th>Course Code</th>
<th>Grade Points</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
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<tbody>
<tr>
<td>AUT 110 Introduction to Auto Technology</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course covers the basic concepts and terms of automotive technology, workplace safety, North Carolina state inspection, safety and environmental regulations, and use of service information resources. Topics include familiarization with components along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and conduct North Carolina safety/ emissions inspections.</td>
</tr>
<tr>
<td>AUT 111 Basic Auto Technology</td>
<td>1 2 2</td>
<td>None</td>
<td>None</td>
<td>This course introduces basic concepts, terms, workplace safety, regulations, and service information relating to automotive components along with basic identification and proper use of various hand and power tools and shop equipment. Upon completion, students should be able to define and use terms associated with automobiles and identify and use basic tools and shop equipment.</td>
</tr>
<tr>
<td>AUT 113 Automotive Servicing</td>
<td>2 6 4</td>
<td>AUT 115, AUT 141, AUT 151, AUT 161, AUT 171</td>
<td>None</td>
<td>This course covers diagnostic procedures necessary to determine the nature and cause of auto service problems and the procedures used to repair/replace components. Emphasis is placed on troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and operate appropriate equipment.</td>
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<tr>
<td>Course Code</td>
<td>Credits</td>
<td>Contact Hours</td>
<td>Course Title</td>
<td>Prerequisites</td>
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<td>AUT 115 Engine Fundamentals</td>
<td>2 3 3</td>
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<td>This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis/repair of automotive engines using appropriate tools, equipment, procedures, and service information.</td>
<td>None</td>
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<tr>
<td>AUT 116 Engine Repair</td>
<td>1 3 2</td>
<td></td>
<td>This course covers service/repair/rebuilding of block, head, and internal engine components. Topics include engine repair/reconditioning using service specifications. Upon completion, students should be able to rebuild recondition an automobile engine to service specifications.</td>
<td>None</td>
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<tr>
<td>AUT 141 Suspension &amp; Steering Systems</td>
<td>2 4 4</td>
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<td>This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair various steering and suspension components, check and adjust various alignment angles, and balance wheels.</td>
<td>None</td>
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<tr>
<td>AUT 151 Brake Systems</td>
<td>2 2 3</td>
<td></td>
<td>This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.</td>
<td>AUT 152</td>
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<tr>
<td>AUT 152 Brake Systems Lab</td>
<td>0 2 1</td>
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<td>This course provides a laboratory setting to enhance brake system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 151. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 151.</td>
<td>None</td>
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<tr>
<td>AUT 161 Electrical Systems</td>
<td>2 6 4</td>
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<td>This course covers basic electrical theory and wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, alternators, and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting, and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of an automobile.</td>
<td>MAT 070</td>
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<tr>
<td>AUT 162 Chassis Elect &amp; Electronics</td>
<td>2 2 3</td>
<td></td>
<td>This course covers electrical/electronic diagnosis/repair, including wiring diagrams, instrumentation, and electronic/computer-controlled devices and accessories. Topics include interpreting wiring diagrams and diagnosis and repair of chassis electrical and electronic systems. Upon completion, students should be able to read and interpret wiring diagrams and determine/perform needed repairs on chassis electrical and electronic systems.</td>
<td>AUT 164</td>
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<tr>
<td>AUT 164 Automotive Electronics</td>
<td>2 2 3</td>
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<td>This course covers fundamentals of electrical/electronic circuitry, semi-conductors, and microprocessors. Topics include Ohm’s law, circuits, AC/DC current, solid state components, digital applications, and the use of digital multimeters. Upon completion, students should be able to apply Ohm’s law to diagnose and repair electrical/electronic circuits using digital multimeters and appropriate service information.</td>
<td>AUT 161, COM 110, MAT 115</td>
</tr>
<tr>
<td>AUT 171 Heating &amp; Air Conditioning</td>
<td>2 3 3</td>
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<td>This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/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 describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.</td>
<td>None</td>
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<tr>
<td>AUT 181 Engine Performance-Electrical</td>
<td>2 3 3</td>
<td></td>
<td>This course covers the principles, systems, and procedures required for diagnosing and restoring engine performance using electrical/electronics test equipment. Topics include procedures for diagnosis and repair of ignition, emission control, and related electronic systems. Upon completion, students should be able to describe operation of and diagnose/repair ignition/emission control systems using appropriate test equipment and service information.</td>
<td>None</td>
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<tr>
<td>AUT 182 Engine Performance-Elec. Lab</td>
<td>0 3 1</td>
<td></td>
<td>This course provides a laboratory setting to enhance the skills for diagnosing and restoring engine performance using electrical/electronics test equipment. Emphasis is placed on practical experiences that enhance the topics presented in AUT 181. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 181.</td>
<td>AUT 181</td>
</tr>
<tr>
<td>AUT 183 Engine Performance-Fuels</td>
<td>2 3 3</td>
<td></td>
<td>This course covers the principles of fuel delivery/management, exhaust/emission systems, and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis/repair of fuel delivery/management and exhaust/emission systems using appropriate service information. Upon completion, students</td>
<td>None</td>
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</tbody>
</table>
should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment.

**AUT 184 Engine Performance-Fuels Lab** 2 3 3

**Prerequisites:**
Corequisites: None

This course covers the principles and techniques of sorbets and ice creams, soufflés, cobblers, crisps and strudel dough products. Topics include bombe, parfait, baked Alaska, sherbet, sherbets and granites; hand stretched strudel products.

**BPA – Baking and Pastry Arts**

**BPA 120 Petit Fours & Pastries** 1 4 3

**Prerequisites:** CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64

Corequisites: Signature permission required

This course covers the principles and techniques of sorbets and ice creams, soufflés, cobblers, crisps and strudel dough products. Topics include bombe, parfait, baked Alaska, sorbets, sherbets and granites; hand stretched strudel products.
crepes, and hot and cold soufflés. Upon completion, students should be able to prepare and plate hot and cold desserts with suitable sauces and garnishes.

**BPA 210 Cake Design & Decorating** 1 4 3  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course covers advanced concepts in the design and decoration of wedding cakes and other specialty cakes. Topics include baking, filling and assembling cakes; cake design; and finishing techniques utilizing gum paste, fondant, and royal icing; and advanced piping skills. Upon completion, students should be able to design, create and finish wedding and specialty cakes.

**BPA 220 Confection Artistry** 1 6 4  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course introduces the principles and techniques of decorative sugar work and confectionary candy. Topics include nougat, marzipan modeling, pastillage and cocoa painting, confection candy and a variety of sugar techniques including blown, spun, poured and pulled. Upon completion, students should be able to prepare edible centerpieces and confections to enhance dessert buffets and plate presentations.

**BPA 230 Chocolate Artistry** 1 4 3  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course provides a study in the art and craft of chocolate. Topics include chocolate tempering, piping, molding; decorative work associated with cakes and centerpieces; and the candy production techniques of filling, enrobing and dipping. Upon completion, students should be able to properly temper chocolate, produce a variety of chocolate candies and decorative elements for garnishing desserts.

**BPA 240 Plated Desserts** 1 4 3  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course provides a study in the elements and principles of design as it relates to plated desserts. Topics include plate composition, portioning, flavor combinations, textures, eye appeal, balance, color harmony and plate decorating techniques such as stencilling, chocolate striping, and plate painting. Upon completion, students should be able to demonstrate competence in combining a variety of dessert components enhanced with plate decorating techniques.

**BPA 250 Dessert & Bread Production** 1 8 5  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course is designed to merge artistry and innovation with the practical baking and pastry techniques utilized in a production setting. Topics include quantity bread and roll-in dough production, plated and platter presentations, and seasonal/themed product utilization with an emphasis on cost effectiveness. Upon completion, students should be able to plan and prepare breads and desserts within a restaurant environment and determine production costs and selling prices.

**BPA 260 Pastry & Baking Marketing** 2 2 3  
Prerequisites: CUL 110, CUL 160/160A. CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: Signature permission required  
This course examines the marketing concepts and merchandising trends utilized in bakery and pastry operations. Emphasis is placed on menu planning, pricing products and strategies, resale and wholesale distribution methods, legal implications, and advertising techniques. Upon completion, students should be able to create a marketing plan that will serve as a basis for a capstone experience.

### BIO - Biology

#### BIO 110 Principles of Biology  
Prerequisites:  
Corequisites: None  
This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

#### BIO 111 General Biology I 3 3 4  
Prerequisites:  
Corequisites: None  
This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

#### BIO 112 General Biology II 3 3 4  
Prerequisites: BIO 111 or equivalent  
Corequisites: None  
This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

#### BIO 120 Introductory Botany 3 3 4  
Prerequisites: BIO 110, BIO 111 BIO 1500, BIO 1502 or equivalent  
Corequisites: None  
This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a sur-
vey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**BIO 130 Introductory Zoology** 3 3 4  
Prerequisites: BIO 110, BIO 111, BIO 1500, BIO 1501 or equivalent  
Corequisites: None  
This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**BIO 143 Field Biology Minicourse** 1 2 2  
Prerequisites:  
Corequisites: None  
This course introduces the biological and physical components of a field environment. Emphasis is placed on a local field environment with extended field trips to other areas. Upon completion, students should be able to demonstrate an understanding of the biological and physical components of the specific biological environment.

**BIO 145 Ecology** 3 3 4  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course provides an introduction to ecological concepts using an ecosystems approach. Topics include energy flow, nutrient cycling, succession, population dynamics, community structure, and other related topics. Upon completion, students should be able to demonstrate comprehension of basic ecosystem structure and dynamics.

**BIO 155 Nutrition** 3 0 3  
Prerequisites:  
Corequisites: None  
This course covers the biochemistry of foods and nutrients with consideration of the physiological effects of specialized diets for specific biological needs. Topics include cultural, religious, and economic factors that influence a person's acceptance of food as well as nutrient requirements of the various life stages. Upon completion, students should be able to identify the functions and sources of nutrients, the mechanisms of digestion, and the nutritional requirements of all age groups.

**BIO 161 Intro to Human Biology** 3 0 3  
Prerequisites:  
Corequisites: None  
This course provides a basic survey of human biology. Emphasis is placed on the basic structure and function of body systems and the medical terminology used to describe normal and pathological states. Upon completion, students should be able to demonstrate an understanding of normal anatomy and physiology and the appropriate use of medical terminology.

**BIO 163 Basic Anatomy & Physiology** 4 2 5  
Prerequisites:  
Corequisites: None  
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships.

**BIO 168 Anatomy and Physiology I** 3 3 4  
Prerequisites: None  
Corequisites: None  
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytolgy, histology, and the integumentary, skeletal, muscular, nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 169 Anatomy and Physiology II** 3 3 4  
Prerequisites: BIO *168  
Corequisites: None  
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 175 General Microbiology** 2 2 3  
Prerequisites: BIO 110, BIO 163, BIO 166, BIO 169, BIO 1500, BIO 1505 or equivalent  
Corequisites: None  
This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques.

**BIO 191 Selected Topics in Biology** 0-1 0-3 1  
Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Students wishing to take any biology topics course must have an instructor's permission.

**BIO 193 Selected Topics in Biology** 1-3 0-6 3  
Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Students wishing to take any biology topics course must have an instructor's permission.
BIO 235 Ornithology  
Prerequisites: BIO 110, BIO 111 BIO 1500 or equivalent  
Corequisites: None  
This course introduces the biology of birds. Emphasis is placed on the systematic, recognition, distribution, anatomy, physiology, behavior, and ecology of birds. Upon completion, students should be able to identify various avian species and demonstrate a knowledge of their biology and ecology.

BIO 243 Marine Biology  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course covers the physical and biological components of the marine environment. Topics include major habitats, the diversity of organisms, their biology and ecology, marine productivity, and the use of marine resources by humans. Upon completion, students should be able to identify various marine habitats and organisms and to demonstrate a knowledge of their biology and ecology.

BIO 275 Microbiology  
Prerequisites: BIO 110, BIO 112, BIO 163, BIO 165, or BIO 168, BIO 1500, BIO 1504 or equivalent  
Corequisites: None  
This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms.

**BPR - Blueprint Reading**

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<tr>
<td>Corequisites: None</td>
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<td>This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.</td>
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<th>BPR 130 Blueprint Reading</th>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>The course covers the Interpretation of Blueprints and Specifications that are associated with the construction trades. Emphasis is placed on the understanding of details of foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret set of construction blueprints.</td>
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**BUS - Business**

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<tr>
<th>BUS 110 Introduction to Business</th>
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<tr>
<td>Corequisites: None</td>
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<td>This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects.</td>
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**BUS 112 SIFE Business Seminar**  
Prerequisites: BUS 110  
Corequisites: None  
This course provides students with opportunities for the practical application of concepts taught in business, marketing and economics courses. Emphasis is placed on free markets in a global economy, how entrepreneurs succeed, personal financial success skills, and business ethics. Upon completion, students should be able to demonstrate knowledge in business, marketing, and economics and display creative problem-solving, public speaking, leadership, and public relations skills.

**BUS 115 Business Law I**  
Prerequisites:  
Corequisites: None  
This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

**BUS 116 Business Law II**  
Prerequisites: BUS 115  
Corequisites: None  
This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

**BUS 121 Business Math**  
Prerequisites: RED 090 and MAT 070 with grades of C or better or appropriate placement test scores.  
Corequisites: None  
This course covers fundamental mathematical operations and their application to business problems. Topics include payroll, pricing, interest and discount, commission, taxes, and other pertinent uses of mathematics in the field of business. Upon completion, students should be able to apply mathematical concepts to business.

**BUS 125 Personal Finance**  
Prerequisites: None  
Corequisites: None  
This course provides a study of individual and family financial decisions. Emphasis is placed on building useful skills in buying, managing finances, increasing resources, and coping with current economic conditions. Upon completion, students should be able to develop a personal financial plan.

**BUS 135 Principles of Supervision**  
Prerequisites:  
Corequisites: None  
This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the work place.
BUS 137 Principles of Management 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management.

BUS 139 Entrepreneurship I 3 0 3
Prerequisites: BUS 110
Corequisites: None
This course provides an introduction to the principles of entrepreneurship. Topics include self-analysis of entrepreneurial readiness, the role of the entrepreneur in economic development, legal problems, organizational structure, sources of financing, budgeting, and cash flow. Upon completion, students should have an understanding of the entrepreneurial process and issues faced by entrepreneurs.

BUS 153 Human Resource Management 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

BUS 210 Investment Analysis 3 0 3
Prerequisites: ACC 120 with a grade of C or better.
Corequisites: None
This course examines the concepts related to financial investment and the fundamentals of managing investments. Emphasis is placed on the securities markets, stocks, bond, and mutual funds, as well as tax implications of investment alternatives. Upon completion, students should be able to analyze and interpret investment alternatives and report findings to users of financial information.

BUS 217 Employment Law and Regulations 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organization policy for compliance and assure that decisions are not contrary to law.

BUS 225 Business Finance 2 2 3
Prerequisites: ACC 120 with a grade of C or better.
Corequisites: None
This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

BUS 230 Small Business Management 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the challenges of entrepreneurship including the startup and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

BUS 234 Training and Development 3 0 3
Prerequisites: None
Corequisites: None
This course covers developing, conducting, and evaluating employee training with attention to adult learning principles. Emphasis is placed on conducting a needs assessment, using various instructional approaches, designing the learning environment, and locating learning resources. Upon completion, students should be able to design, conduct, and evaluate a training program.

BUS 250 Org Behavior in Business 3 0 3
Prerequisites: None
Corequisites: None
This course covers the impact of different management practices and leadership styles on worker satisfaction and morale, organizational effectiveness, productivity, and profitability. Topics include a discussion of formal and informal organizations, group dynamics, motivation, and managing conflict and change. Upon completion, students should be able to analyze different types of interpersonal situations and determine an appropriate course of action.

BUS 256 Recruit Selection and Personnel Planning 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining employee records; and voluntary and involuntary separations. Upon completion, students should be able to acquire and retain employees who match position requirements and fulfill organizational objectives. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

BUS 258 Compensation and Benefits 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

BUS 259 HRM Applications 3 0 3
Prerequisites: BUS 217, BUS 234, BUS 256, and BUS 258
Corequisites: None
This course provides students in the Human Resource Management concentration the opportunity to reinforce their learning experiences from preceding HRM courses. Emphasis is
placed on application of day-to-day HRM functions by completing in-basket exercises and through simulations. Upon completion, students should be able to determine the appropriate actions called for by typical events that affect the status of people at work. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

**BUS 260 Business Communication**  
*3 0 3*  
Prerequisites: ENG 111  
Corequisites: None  
This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the work place.

**Career Assessment**  
*(See ACA Academic / Life Skills)*

### CAR - Carpentry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR 110 Introduction to Carpentry</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
| Prerequisites: None  
Corequisites: None  
This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods. |

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR 111 Carpentry I</td>
<td>3</td>
<td>15</td>
<td>8</td>
</tr>
</tbody>
</table>
| Prerequisites: None  
Corequisites: None  
This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. |

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR 112 Carpentry II</td>
<td>3</td>
<td>15</td>
<td>8</td>
</tr>
</tbody>
</table>
| Prerequisites: CAR 111  
Corequisites: None  
This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. |

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>CAR 113 Carpentry III</td>
<td>3</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>
| Prerequisites: CAR 111  
Corequisites: None  
This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinet, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. |
CHM - Developmental Studies
(CHM 090)
See Pre-College section of this catalog.

CHM - Chemistry

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 115 Concepts in Chemistry</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: CHM 115A or equivalent</td>
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<tr>
<td>This course introduces basic chemical concepts and their applications to daily life for non-science majors. Topics include air pollution, global warming, energy, world of polymers, water and its importance to a technological society, food, drugs, and nuclear chemistry. Upon completion, students should be able to discuss, apply, and appreciate the impact of chemistry on modern society. You must register for both CHM 115 and CHM 115A unless you have received prior credit for one of these classes.</td>
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<tr>
<td>CHM 115A Concepts in Chemistry Laboratory</td>
<td>0</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Prerequisites: CHM 115 or equivalent</td>
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<tr>
<td>This course is a laboratory for CHM 115. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 115. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical concepts presented in CHM 115. You must register for both CHM 115 and CHM 115A unless you have received prior credit for one of these classes.</td>
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<tr>
<td>CHM 121 Foundations of Chemistry</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: MAT 080, MAT 9510 or equivalent</td>
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<tr>
<td>Corequisites: CHM 121A or equivalent</td>
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<tr>
<td>This course is designed for those who have no previous high school chemistry or a grade of C or less in high school chemistry. Topics include matter, structure of the atom, nomenclature, chemical equations, bonding and reactions; mathematical topics include measurements, scientific notation, and stoichiometry. Upon completion, students should be able to demonstrate an understanding of chemical concepts and an ability to solve related problems in subsequent chemistry courses. You must register for both CHM 121 and CHM 121A unless you have received prior credit for one of these classes.</td>
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<tr>
<td>CHM 121A Foundations of Chemistry Laboratory</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Prerequisites: CHM 121 or equivalent</td>
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<tr>
<td>Corequisites: CHM 121A or equivalent</td>
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<tr>
<td>This course is a laboratory for CHM 121. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 121. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 121. You must register for both CHM 121 and CHM 121A unless you have received prior credit for one of these classes.</td>
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<tr>
<td>CHM 130 General, Organic and Biochemistry</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: MAT 080, MAT 9510 or equivalent</td>
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<tr>
<td>Corequisites: CHM 130A or equivalent</td>
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<tr>
<td>This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts. This class is recommended for Allied Health programs and you must register for both CHM 130 and CHM 130A unless you have received prior credit for one of these classes.</td>
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<tr>
<td>CHM 130A General, Organic and Biochemistry Lab</td>
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<td>2</td>
<td>1</td>
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<tr>
<td>Prerequisites: CHM 130 or equivalent</td>
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<tr>
<td>This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130. You must register for both CHM 130 and CHM 130A unless you have received prior credit for one of these classes. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.</td>
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<tr>
<td>CHM 131 Introduction to Chemistry</td>
<td>3</td>
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<td>3</td>
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<tr>
<td>Prerequisites: MAT 080, MAT 9510 along with CHM 121 and CHM 121A CHM 1500 or equivalent (High School Algebra and Chemistry)</td>
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<tr>
<td>Corequisites: CHM 131A or equivalent</td>
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<tr>
<td>This course introduces the fundamental concepts of inorganic chemistry. Topics include measurement, matter and energy, atomic and molecular structure, nuclear chemistry, stoichiometry, chemical formulas and reactions, chemical bonding, gas laws, solutions, and acids and bases. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. You must register for both CHM 131 and CHM 131A unless you have received prior credit for one of these classes. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.</td>
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<tr>
<td>CHM 131A Introduction to Chemistry Lab</td>
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<td>3</td>
<td>1</td>
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<tr>
<td>Prerequisites: CHM 131 or equivalent</td>
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<tr>
<td>This course is a laboratory to accompany CHM 131. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 131. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 131. You must register for both CHM 131 and CHM 131A unless you have received prior credit for one of these classes. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.</td>
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<tr>
<td>CHM 132 Organic and Biochemistry</td>
<td>3</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Prerequisites: CHM 131, CHM 1501 or equivalent</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
| This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an under-
standing of fundamental chemical concepts needed to pursue studies in related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

CHM 151 General Chemistry I  3  3  4
Prerequisites: MAT 080, MAT 9510 along with CHM 121 and CHM 121A or CHM 1500 or equivalent (High School Algebra and Chemistry)
Corequisites: None
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

CHM 152 General Chemistry II  3  3  4
Prerequisites: CHM 151, CHM 1505 or equivalent
Corequisites: None
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

CHM 191 Selected Topics in Chemistry  0-1  0-3  1
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Students wishing to take any chemistry topics courses must have completed two semesters of chemistry and have instructor permission.

CHM 193 Selected Topics in Chemistry  1-3  0-6  3
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Student wishing to take any chemistry topics courses must have completed two semesters of chemistry and have instructor permission.

CHM 251 Organic Chemistry I  3  3  4
Prerequisites: CHM 152, CHM 1506 or equivalent
Corequisites: None
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252.

CHM 252 Organic Chemistry II  3  3  4
Prerequisites: CHM 251 CHM 2614 or equivalent
Corequisites: None
This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields.

CHM 293 Selected Topics in Chemistry  1-3  0-6  3
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Students wishing to take CHM 293 must have completed three semesters of chemistry and have instructor permission.

CIS / CSC - Computer Information Systems

See DBA, NET, NOS, SEC, and WEB sections of this catalog.
CIS 111 Basic PC Literacy 1 2 2
Prerequisites: None
Corequisites: None
This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills. This course is also available through the Virtual Learning Community (VLC). Emphasis is placed on MS Word, Excel, and PowerPoint.

CIS 112 Windows 1 2 2
Prerequisites: Corequisites: None
This course includes the fundamentals of the Windows' software. Topics include graphical user interface, icons, directories, file management, accessories, and other applications. Upon completion, students should be able to use Windows' software in an office environment.

CIS 115 Introduction to Programming and Logic 2 3 3
Prerequisites: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option). This course is also available through the Virtual Learning Community (VLC).

CIS 116 Introduction to PC Application Development 2 3 3
Prerequisites: CIS 110 or (CIS 111 and CIS 154)
Corequisites: None
This course provides an introductory study of the principles of application development and end-user interface design principles. Emphasis is placed on tables, file management, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design and program a PC application at the introductory level. This course uses Microsoft Office Professional applications (WORD, EXCEL, ACCESS, & PowerPoint) making use of MACROS to program functions and requires hands-on lab sessions with a PC system.

CIS 120 Spreadsheet I 2 2 3
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. This course assumes some familiarity with a PC and spreadsheets, and will utilize EXCEL software.

CIS 121 User Support and Software Evaluation 1 4 3
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course provides an opportunity to evaluate software and hardware and make recommendations to meet end-user needs. Emphasis is placed on software and hardware evaluation, installation, training, and support. Upon completion, students should be able to present proposals and make hardware and software recommendations based on their evaluations.

CIS 130 Survey of Operating Systems 2 3 3
Prerequisites: Corequisites: None
This course covers operating system concepts which are necessary for maintaining and using computer systems. Topics include disk, file, and directory structures; installation and setup; resource allocation, optimization, and configuration; system security; and other related topics. Upon completion, students should be able to install and configure operating systems and optimize performance. Selected operating systems will be studied.

CIS 131 Introduction to Operating Systems 2 2 3
Prerequisites: Corequisites: None
This course introduces operating systems concepts for DOS operating systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a DOS environment.

CIS 132 Introduction to Operating Systems 2 2 3
Prerequisites: Corequisites: CIS 130
This course introduces operating systems concepts for a Windows operating system. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a Windows environment.

CIS 133 Introduction to Operating Systems 2 2 3
Prerequisites: Corequisites: CIS 130
This course provides an introductory study of the principles of application development and end-user interface design principles. Emphasis is placed on tables, file management, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design and program a PC application at the introductory level. This course uses Microsoft Office Professional applications (WORD, EXCEL, ACCESS, & PowerPoint) making use of MACROS to program functions and requires hands-on lab sessions with a PC system.

CIS 134 Operating System - DOS 2 2 3
Prerequisites: Corequisites: CIS 130
This course introduces operating systems concepts for DOS operating systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a DOS environment.

CIS 135 Operating System - Windows 2 2 3
Prerequisites: Corequisites: CIS 130
This course introduces operating systems concepts for a Windows operating system. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a Windows environment.

CIS 136 Operating System - Windows NT 2 2 3
Prerequisites: Corequisites: CIS 130
This course introduces operating systems concepts for the Windows NT operating system. Topics include hardware management, file and memory management, system configuration/optimization, networking options, and utilities. Upon completion, students should be able to perform operating system functions at the single/multi-user support level in a Windows NT environment.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CIS 172 Introduction to the Internet</strong></td>
<td>2 3 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the various navigational tools and services of the Internet. Topics include using Internet protocols, search engines, file compression/decompression, FTP, e-mail, list servers, and other related topics. Upon completion, students should be able to use Internet resources, retrieve/decompress files, and use e-mail, FTP, and other Internet tools. Also, topics include Java, the World Wide Web, news groups, and homepages.</td>
</tr>
<tr>
<td><strong>CIS 173 Network Theory</strong></td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course examines Token Ring, Ethernet, and Arcnet networks. Topics include LAN topologies and design; cable characteristics; cable, interface cards, server, and client installation; basic management techniques; linking networks; and troubleshooting LAN problems. Upon completion, students should be able to install both hardware and software for a small client/server LAN and troubleshoot common network problems.</td>
</tr>
<tr>
<td><strong>CIS 174 Network System Manager I</strong></td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course covers effective network management. Topics include network file system design and security, login scripts and user menus, printing services, e-mail, and backup. Upon completion, students should be able to administer an office network system.</td>
</tr>
<tr>
<td><strong>CIS 175 Network Management I</strong></td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course covers fundamental network administration and system management. Topics include accessing and configuring basic network services, managing directory services, and using network management software. Upon completion, students should be able to articulate an understanding of the current</td>
</tr>
</tbody>
</table>
trends and issues in emerging technologies for information systems. Reading and discussion intensive course.

**CIS 244 Operating System - AS/400**  
Prerequisites: None  
Corequisites: None  
This course includes operating systems concepts for AS/400 systems. Topics include hardware management, file and memory management, system configuration/optimization, utilities, Job Control Language, and support functions. Upon completion, students should be able to perform operating system functions in an AS/400 environment. The students will develop CL programs on CPCC’s AS/400 using SEU and PDM, CALL interactive jobs, submit batch jobs, handle messages, monitor for errors, create and use Database Physical and Logical files, and work with spool files.

**CIS 245 Operating System - Multi-User**  
Prerequisites: None  
Corequisites: None  
This course includes operating systems concepts for multi-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions in a multi-user environment.

**CIS 246 Operating System - UNIX**  
Prerequisites: None  
Corequisites: None  
This course includes operating systems concepts for UNIX operating systems. Topics include hardware management, file and memory management, system configuration/optimization, utilities, and other related topics. Upon completion, students should be able to effectively use the UNIX operating system and its utilities. This is a Cisco sponsored curriculum course using Sun Solaris UNIX, and Red Hat Linux.

**CIS 274 Network System Manager II**  
Prerequisites: CIS 174  
Corequisites: None  
This course is a continuation of CIS 174 focusing on advanced network management, configuration, and installation. Emphasis is placed on server configuration files, startup procedures, server protocol support, memory and performance concepts, and management and maintenance. Upon completion, students should be able to install and upgrade networks and servers for optimal performance. This covers the Microsoft Official Curriculum for Course 2152, Implementing Microsoft Windows 2000 Professional and Server.

**CIS 275 Network Management II**  
Prerequisites: CIS 175  
Corequisites: None  
This course is a continuation of CIS 175, focusing on advanced enterprise networks. Topics include directory service tree planning, management distribution and protection, improving network security, auditing the network, printing, network management, and system administration of an Internet node. Upon completion, students should be able to manage client services and network features and optimize network performance. This covers the Microsoft Official Curriculum for Course 2152, Implementing Microsoft Windows 2000 Professional and Server.

**CIS 277 Network Design & Implementation**  
Prerequisites: CIS 175  
Corequisites: None  
This course focuses on the design, analysis, and integration of a network operating system. Topics include determination of a directory tree structure and object placement, creation of time synchronization strategy, security, and routing services. Upon completion, students should be able to implement a network design strategy, develop a migration strategy, and create a network implementation schedule. This covers the Microsoft Official Curriculum for Course 2154, Implementing and Administering Microsoft Windows 2000 Directory Services.

**CIS 279 UNIX System Admin.**  
Prerequisites: CIS 246  
Corequisites: None  
This course provides an advanced study of the UNIX operating system for maintaining UNIX systems. Topics include administering user accounts, using back-up utilities, installing and maintaining UNIX file systems, configuring devices, controlling processes, using advanced scripts, and other related topics. Upon completion, students should be able to set up, configure, maintain, and administer a UNIX system.

**CIS 282 Network Technology**  
Prerequisites: None  
Corequisites: None  
This course examines concepts of network architecture. Topics include various network types, topologies, transmission methods, media and access control, the OSI model, and the protocols which operate at each level of the model. Upon completion, students should be able to design a network based on the requirements of a company.

**CIS 286 Systems Analysis and Design**  
Prerequisites: CIS 115  
Corequisites: None  
This course examines established and evolving methodologies for the analysis, design, and development of a business information system. Emphasis is placed on business systems characteristics, managing information systems projects, prototyping, CASE tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques. Other introductory programming language courses can be used as a prerequisite in lieu of CIS 115.

**CIS 287 Network Support**  
Prerequisites: CIS 274 or CIS 275  
Corequisites: None  
This course provides experience using CD ROM and on-line research tools and hands-on experience for advanced hardware support and troubleshooting. Emphasis is placed on troubleshooting network adapter cards and cabling, network storage devices, the DOS workstation, and network printing. Upon completion, students should be able to analyze, diagnose, research, and fix network hardware problems. This covers the Microsoft Official Curriculum for Course 2126, Managing a Microsoft Windows 2000 Network Environment.

**CIS 288 Systems Project**  
Prerequisites: CSC 244 and CIS 286  
Corequisites: None  
This course provides an opportunity to complete a significant systems project from the design phase through implementation with minimal instructor support. Emphasis is placed on...
CSC 119 Intro to Programming Program 1 2 2
Prerequisites: None
Corequisites: None
This introductory course provides an opportunity for students to develop the knowledge and skills required to succeed in the Programming program. Emphasis is placed on introducing students to the tools and resources available to them in the Programming program. Students will develop a program of study. Upon successful completion of the course, students should have an advisor, have an approved program of study, be familiar with all tools, resources and services available and should have developed the disposition to utilize these resources.

CSC 120 Computing Fundamentals I 3 2 4
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course provides the essential foundation for the discipline of computing and a program of study in computer science, including the role of the professional. Topics include algorithm design, data abstraction, searching and sorting algorithms, and procedural programming techniques. Upon completion, students should be able to solve problems, develop algorithms, specify data types, perform sorts and searches, and use an operating system. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. Students are encouraged to take CIS 115 prior to taking this course.

CSC 130 Computing Fundamentals II 3 2 4
Prerequisites: CSC 120
Corequisites: None
This course provides in-depth coverage of the discipline of computing and the role of the professional. Topics include software design methodologies, analysis of algorithm and data structures, searching and sorting algorithms, and file organization methods. Upon completion, students should be able to use software design methodologies and choice of data structures and understand social/ethical responsibilities of the computing professional. This course has been approved to satisfy the comprehensive articulation agreement pre-major and/or elective course requirement.

CSC 133 C Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the C programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays/tables, pointers, and other related topics. Upon completion, students should be able to design, code, test, and debug C language programs.

CSC 134 C++ Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces object-oriented computer programming using the C++ programming language. Topics include input/output operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test, and debug C++ language programs. This course has been approved to satisfy the comprehensive articulation agreement pre-major and/or elective course requirement. Students are encouraged to take CIS 115 prior to taking this course.

CSC 135 COBOL Programming 2 3 3
Prerequisites: None
Corequisites: CIS 115
This course introduces computer programming using the COBOL programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays/tables, and other related topics. Upon completion, students should be able to design, code, test, and debug COBOL language programs.

CSC 136 Fortran Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the Fortran programming language with structured programming principles. Topics include input/output operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test and debug at a beginning level. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

CSC 138 RPG Programming 2 3 3
Prerequisites: CIS 115 or programming knowledge
Corequisites: None
This course introduces computer programming using the RPG programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays/tables, and other related topics. Upon completion, students should be able to design, code, test, and debug RPG language programs. Emphasis will be placed on writing structured programs which generate reports, including control levels, using an AS/400 midrange computer.

CSC 139 Visual BASIC Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces event-driven computer programming using the Visual BASIC programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, forms, sequential files, and other related topics. Upon completion, students should be able to design, code, test, and debug Visual BASIC language programs. Students are encouraged to take CIS 115 prior to taking this course.

CSC 143 Object-Oriented Programming 2 3 3
Prerequisites: None
Corequisites: None
This course introduces the concepts of object-oriented programming. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, test, debug, and implement objects at the application level using the appropriate environment.

CSC 144 AS/400 CL Programming 2 3 3
Prerequisites: CIS 211 and CIS 115
Corequisites: None
This course introduces computer programming using the CL programming language. Topics include CL command structure,
command parameters, creating CL programs, manipulating variables, writing commands to control jobs and workflow, and other related topics. Upon completion, students should be able to design, code, test, and debug CL programs.

**CSC 148 JAVA Programming** 2 3 3

**Prerequisites:** None

**Corequisites:** None

This course introduces computer programming using the JAVA language. Topics include selection, iteration, arithmetic and logical operators, classes, inheritance, methods, arrays, user interfaces, basic applet creations and other related topics. Upon completion, students should be able to design, code, test, and debug JAVA language programs. Students are encouraged to take CIS 115 prior to taking this course.

**CSC 151 JAVA Programming** 2 3 3

**Prerequisites:** None

**Corequisites:** None

This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**CSC 153 C# Programming** 2 3 3

**Prerequisites:** None

**Corequisites:** None

This course introduces computer programming using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes and using object-oriented tools such as the class debugger. Upon completion, students should able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level.

**CSC 160 Intro to Internet Programming** 2 2 3

**Prerequisites:** CIS*172

**Corequisites:** None

This course introduces client-side Internet programming using HTML and Javascript. Topics include use of frames and tables, use of meta tags, Javascript techniques for site navigation. Upon completion, students should be able to write HTML documents that incorporate programming to provide web page organization and navigation functions.

**CSC 175 PHP Programming** 2 3 3

**Prerequisites:** None

**Corequisites:** None

This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic web pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic web site using the PHP scripting language.

**CSC 185 Perl Programming** 2 3 3

**Prerequisites:** None

**Corequisites:** None

This course introduces students to the perl Programming language. Topics include programming techniques using CGI script, input/output operations, sequence, iteration, selection, arithmetic operations, subroutines, modules, integrating database, pattern matching and other related topics. Upon completion, students should be able to design, code, test, and debug Perl language programs.

**CSC 193 Selected Topics in Information Systems** 0-3 0-6 3

**Prerequisites:** Enrollment in the program

**Corequisites:** None

This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**CSC 196 Seminar in Information Systems** 0-1 0-3 1

**Prerequisites:** Enrollment in the program

**Corequisites:** None

This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**CSC 219 Programming Capstone** 1 2 2

**Prerequisites:** None

**Corequisites:** None

This exit course provides an opportunity for students to reflect on the knowledge and skills they have acquired in the Programming program and to establish reasonable educational and professional goals. Emphasis is placed on the students’ evaluation of the knowledge and skills acquired in the Programming program. Students will develop portfolios for use in the workforce or in their continuing education. Upon successful completion of the course, students should have a resume, have developed internship skills, have a portfolio, understand how to locate and apply for professional positions in the field, understand how to pursue further educational opportunities in the discipline.

**CSC 220 Machine Implementation of Algorithm** 3 2 4

**Prerequisites:** CSC 120 and CSC 130

**Corequisites:** MAT 271

This course covers the organization and operation of real computer systems at the assembly language level. Topics include mapping of statements and constructs onto machine instruction sequences, internal data types and structures representation, numerical computation, and iterative approximation methods. Upon completion, students should be able to analyze computer system organization, implement procedural language elements, and describe the programming language translation process.

**CSC 234 Advanced C++** 2 3 3

**Prerequisites:** CSC 134

**Corequisites:** None

This course is a continuation of CSC 134 using C++ with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions. Also, this course introduces event-driven computer programming using a Visual C++ programming language.
CSC 235 Advanced COBOL 2 3 3
Prerequisites: CSC 135
Corequisites: None
This course is a continuation of CSC 135 using COBOL with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.

CSC 238 Advanced RPG 2 3 3
Prerequisites: CSC 138
Corequisites: None
This course is a continuation of CSC 138 using RPG with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.

CSC 239 Advanced Visual BASIC 2 3 3
Prerequisites: CSC 139
Corequisites: None
This course is a continuation of CSC 139 using Visual BASIC with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.

CSC 244 CICS 4 2 5
Prerequisites: CSC 235
Corequisites: None
This course provides an in-depth study of interactive transaction processing using command level CICS. Topics include pseudoconversational programming, basic mapping support, control tables, storage areas, file maintenance, screen design, and EDF debugging. Upon completion, students should be able to design, code, test, debug, and document command level COBOL programs for menuing, record processing, browsing, and temporary storage. Additional topics include multiple screen control (paging), multiple map control, user-defined symbolic maps, extended attributes, and VSAM variable-length records.

CSC 248 Adv Internet Prog 2 3 3
Prerequisites: CSC 148
Corequisites: None
This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support network applications. Upon completion, students should be able to design, code, debug, and document network-based programming solutions to various real-world problems using an appropriate programming language. This class focuses on JSP/servlets.

CSC 251 Adv JAVA Programming 2 3 3
Prerequisites: CSC 151
Corequisites: None
This course is a continuation of CSC 151 using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment.

CSC 253 Advanced C# Programming 2 3 3
Prerequisites: CSC 153
Corequisites: None
This course is a continuation of CSC 153 using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment.

CSC 258 Java Enterprise Programs 2 2 3
Prerequisites: CSC 148
Corequisites: None
This course provides a continuation to CSC 148 using the Java Enterprise Edition (JEE) programming architecture. Topics include distributed network applications, database connectivity, Enterprise Java Beans, servlets, collection frameworks, JNDI, RMI, JSP, multithreading XML and multimedia development. Upon completion, students should be able to program a client/server enterprise application using the JEE framework. This course is the Advanced Java class.

CSC 260 Programming in Another Language 2 2 3
Prerequisites: CSC 120 or instructor permission
Corequisites: None
This course provides in-depth coverage, with applications, of a programming language which was not covered in CSC 120, 130, 220, or 230. Emphasis is placed on using the covered language to develop well-structured programs to solve appropriate problems. Upon completion, students should be able to understand the uses, syntax, and limitations of the language while comparing similarities and differences with other languages.

CSC 284 Emerging Comp Prog Tech 2 3 3
Prerequisites: CIS 286
Corequisites: None
This course provides students with the latest technologies and strategies in the field of computer programming. Emphasis is placed on the evaluation of developing computer programming technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging computer programming technologies and establish informed opinions.

CSC 285 Programming Project 2 2 3
Prerequisites: CIS 115
Corequisites: None
This course provides an opportunity to complete a significant Programming project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete a project from the definition phase through implementation.

CSC 289 Programming Capstone Proj. 1 4 3
Prerequisites: CTS 285
Corequisites: None
This course provides an opportunity to complete a significant programming project from the design phase through implementation with minimal instructor support. Emphasis is placed
on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete a project from the definition phase through implementation.

### CIV - Civil Engineering Technology

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<thead>
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<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CIV 110 Statics/Strength of Materials</td>
<td>2</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Prerequisites: MAT 121</td>
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<tr>
<td>Corequisites: None</td>
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This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. The topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

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<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>CIV 111 Soils and Foundations</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Prerequisites: CIV 110 or MEC 250</td>
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<tr>
<td>Corequisites: None</td>
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This course presents an overview of soil as a construction material by analyzing soil properties and testing procedures. The topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.

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<tbody>
<tr>
<td>CIV 125 Civil/Surveying CAD</td>
<td>1</td>
<td>6</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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This course introduces civil/surveying computer-aided drafting (CAD) software. The topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.

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<tbody>
<tr>
<td>CIV 210 Engineering Materials</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<td>Prerequisites: CIV 110</td>
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<td>Corequisites: None</td>
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</table>

This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. The topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.

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<tbody>
<tr>
<td>CIV 211 Hydraulics and Hydrology</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: CIV 110 or MEC 250</td>
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<tr>
<td>Corequisites: None</td>
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This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. The topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.

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<tbody>
<tr>
<td>CIV 212 Environmental Planning</td>
<td>2</td>
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<td>Prerequisites: CIV 211</td>
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<td>Corequisites: None</td>
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This course covers water and waste water technology, erosion and sedimentation control, and other related topics. The topics include collection, treatment, and distribution of water and waste water and erosion and sedimentation control law. Upon completion, students should be able to demonstrate knowledge of water and waste water systems and prepare erosion and sedimentation control plans.

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<tbody>
<tr>
<td>CIV 215 Highway Technology</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Prerequisites: SRV 111</td>
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<tr>
<td>Corequisites: CIV 211</td>
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</table>

This course introduces the essential elements of roadway components and design. The topics include subgrade and pavement construction, roadway drawings and details, drainage, superelevation, and North Carolina Department of Transportation Standards. Upon completion, students should be able to use roadway drawings and specifications to develop superelevation, drainage, and general highway construction details.

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<tbody>
<tr>
<td>CIV 220 Basic Structural Concepts</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Prerequisites: CIV 110 or MEC 250</td>
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<tr>
<td>Corequisites: None</td>
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</table>

This course covers the historical perspective of structures as well as types, materials, common elements, and mechanical principles of structures. The topics include analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures.

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<tbody>
<tr>
<td>CIV 221 Steel and Timber Design</td>
<td>2</td>
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<tr>
<td>Prerequisites: CIV 110 or MEC 250</td>
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<td>Corequisites: None</td>
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</table>

This course introduces the basic elements of steel and timber structures. The topics include the analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures.

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<tbody>
<tr>
<td>CIV 222 Reinforced Concrete</td>
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<tr>
<td>Prerequisites: CIV 110 and MEC 250</td>
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<td>Corequisites: None</td>
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This course introduces the basic elements of reinforced concrete and masonry structures. The topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls; load-bearing masonry walls; and ACI manuals and codes. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and masonry elements and utilize appropriate ACI publications.

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<tbody>
<tr>
<td>CIV 230 Construction Estimating</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: CIS 111 and EGR 115</td>
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<td>Corequisites: None</td>
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This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. The topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.

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<tbody>
<tr>
<td>CIV 240 Project Management</td>
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<td>Prerequisites: ARC 111 or EGR 115</td>
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<td>Corequisites: None</td>
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</table>

This course introduces construction planning and scheduling techniques and project management software. The topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to plan, schedule, and manage construction projects.
should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.

**CIV 250 Civil Engineering Tech Project**  
1 3 2  
Prerequisites: None, department signature required  
Corequisites: None  
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.

**CMT/CST - Construction and Construction Management**

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CMT 210 Prof Construction Superv</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces the student to the fundamentals of effective supervision emphasizing professionalism through knowledge and applied skills. Topics include safety, planning and scheduling, contract, problem-solving, communications, conflict resolution, recruitment, employment laws and regulations, leadership, motivation, teamwork, discipline, setting objectives, and training. Upon completion, the student should be able to demonstrate the basic skills necessary to be successful as a supervisor in the construction industry.</td>
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<tr>
<td>CMT 212 Total Safety Performance</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: CMT 210</td>
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<tr>
<td>This course covers the importance of managing safety and productivity equally by encouraging people to take individual responsibility for safety and health in the workplace. Topics include safety management, controlling construction hazards, communicating and enforcing policies, OSHA compliance, personal responsibility and accountability, safety planning, training, and personal protective equipment. Upon completion, students should be able to supervise safety at a construction job site and qualify for the OSHA Training Certification.</td>
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<tr>
<td>CMT 214 Planning and Scheduling</td>
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<tr>
<td>Prerequisites: CMT 210 and BPR 130</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers the need for the process of planning construction projects, as well as the mechanics and vocabulary of project scheduling. Topics include project preplanning, scheduling format, planning for production, short interval planning, schedule updating and revising, and computer-based planning and scheduling. Upon completion, the student should be able to understand the need for planning and scheduling, the language and logic of scheduling, and use of planning skills.</td>
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<tr>
<td>CMT 216 Costs and Productivity</td>
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<td>Prerequisites: CMT 210</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers the relationships between time, work completed, work-hours spent, schedule duration, equipment hours, and materials used. Topics include production rates, productivity unit rates, work method improvements, and overall total project cost control. Upon completion, the student should be able to demonstrate an understanding of how costs may be controlled and productivity improved on a construction project.</td>
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**CMT 218 Human Relations Issues**  
3 0 3  
Prerequisites: CMT 210  
Corequisites: None  
This course provides instruction on human relations issues as they relate to construction project supervision. Topics include relationships, human behavior, project staffing issues, teamwork, effective communication networks, laws and regulations, and identifying and responding to conflict, crisis, and discipline. Upon completion, the student will demonstrate an understanding of the importance of human relations in the success of a construction project.

**CST 241 Planning/Estimating I**  
2 2 3  
Prerequisites: BPR 130 or MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175  
Corequisites: None  
This course covers the procedures involved in planning and estimating a residential structure. Topics include labor and equipment with emphasis placed on quantity take-offs of materials necessary to construct a residential structure. Upon completion, students should be able to accurately complete take-offs of materials and equipment needs and plan the labor to construct a residential structure.

**CST 242 Planning/Estimating II**  
3 2 4  
Prerequisites: CST 241  
Corequisites: None  
This course covers planning and estimating practices, which are applicable to commercial construction. Emphasis is placed on planning and developing take-offs of materials, labor, and equipment in accordance with industry formats. Upon completion, students should be able to accurately complete take-offs and planning time lines necessary to complete a commercial structure.

**CJC - Criminal Justice**

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<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CJC 100 Basic Law Enforcement Trn</td>
<td>8</td>
<td>30</td>
<td>18</td>
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<tr>
<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers the basic skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Topics are divided into general units of study: legal, patrol duties, law enforcement communications, investigations, practical application and sheriff-specific. Upon successful completion, the student will be able to demonstrate competence in the topics and areas required for the state comprehensive certification examination. This is a certificate-level course.</td>
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<tr>
<td>CJC 111 Intro to Criminal Justice</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<td>Course Code</td>
<td>Title</td>
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<tr>
<td>CJC 112</td>
<td>Criminology</td>
<td>3 0 3</td>
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<tr>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.</td>
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</table>

| CJC 113 | Juvenile Justice | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition. |

| CJC 114 | Investigative Photography | 1 2 2 |
| Prerequisites: None | Corequisites: None |
| This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques. |

| CJC 120 | Interviews/Interrogations | 1 2 2 |
| Prerequisites: None | Corequisites: None |
| This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims. |

| CJC 121 | Law Enforcement Operations | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. |

| CJC 122 | Community Policing | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing. |

| CJC 131 | Criminal Law | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements. |

| CJC 132 | Court Procedure & Evidence | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course covers judicial structure/process/procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence. |

| CJC 141 | Corrections | 3 0 3 |
| Prerequisites: None | Corequisites: None |
| This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. |

| CJC 142 | Criminal Court Procedure | 2 3 3 |
| Prerequisites: None | Corequisites: None |
| This course covers the theories and practices of crime scene processing and investigating. Topics include legal considerations at the crime scene, processing indoor and outdoor scenes, recording, note taking, collection and preservation of evidence and submission to the crime laboratory. Upon completion, the student should be able to evaluate and search various crime scenes and demonstrate the appropriate techniques. |

| CJC 143 | Criminal Scene CAD | 2 3 3 |
| Prerequisites: None | Corequisites: None |
| This course introduces the student to CAD software for crime scenes. Topics include drawing, editing, file management and drafting theory and practices. Upon completion, students should be able to produce and plot a crime scene drawing. |

| CJC 144 | Crime Scene Processing | 2 3 3 |
| Prerequisites: None | Corequisites: None |
| This course provides a study of trace evidence as it relates to forensic science. Topics include collection, packaging, and preservation of trace evidence from crime scenes such as bombings, fires and other scenes. Upon completion, students should be able to demonstrate the fundamental concepts of trace evidence collection, preservation and submission to the crime laboratory. |

<p>| CJC 145 | Trace Evidence | 2 3 3 |
| Prerequisites: None | Corequisites: None |
| This course provides a study of trace evidence as it relates to forensic science. Topics include collection, packaging, and preservation of trace evidence from crime scenes such as bombings, fires and other scenes. Upon completion, students should be able to demonstrate the fundamental concepts of trace evidence collection, preservation and submission to the crime laboratory. |</p>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Units</th>
<th>Units</th>
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<tbody>
<tr>
<td>CJC 151</td>
<td>Intro to Loss Prevention</td>
<td>3</td>
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<td></td>
<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the concepts and methods related to commercial and private security systems. Topics include the historical, philosophical, and legal basis of security, with emphasis on security surveys, risk analysis, and associated functions. Upon completion, students should be able to demonstrate and understand security systems, risk management, and the laws relative to loss prevention.</td>
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<tr>
<td>CJC 160</td>
<td>Terrorism: Underlying Issues</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course identifies the fundamental reasons why America is a target for terrorists, covering various domestic/international terrorist group ideologies andologies from a historical aspect. Emphasis is placed upon recognition of terrorist crime scene; weapons of mass destruction; chemical, biological, and nuclear terrorism; and planning consideration involving threat assessments. Upon completion, the student should be able to identify and discuss the methods used in terrorists’ activities and complete a threat assessment for terrorists’ incidents.</td>
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<td>CJC 170</td>
<td>Critical Incident Management for Public Safety</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/workplace violence. Upon completion, the student should be able to identify and discuss managerial techniques, legal issues, and response procedures to critical incidents.</td>
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<tr>
<td>CJC 211</td>
<td>Counseling</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the basic elements of counseling and specific techniques applicable to the criminal justice setting. Topics include observation, listening, recording, interviewing, and problem exploration necessary to form effective helping relationships. Upon completion, students should be able to discuss and demonstrate the basic techniques of counseling.</td>
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<td>CJC 212</td>
<td>Ethics &amp; Comm Relations</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to apply ethical considerations to the decision-making process in identifiable criminal justice situations.</td>
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<tr>
<td>CJC 213</td>
<td>Substance Abuse</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities.</td>
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<td>CJC 214</td>
<td>Victimology</td>
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<td>Corequisites: None</td>
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<td>This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims’ roles, and current victim assistance programs.</td>
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<td>CJC 215</td>
<td>Organization &amp; Administration</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.</td>
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<td>CJC 221</td>
<td>Investigative Principles</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.</td>
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<td>CJC 222</td>
<td>Criminalistics</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence.</td>
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<td>CJC 223</td>
<td>Organized Crime</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the evolution of traditional and nontraditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.</td>
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<td>CJC 225</td>
<td>Crisis Intervention</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces critical incident intervention and management techniques as they apply to operational criminal justice practitioners. Emphasis is placed on the victim/offender interaction as well as job-related high stress, dangerous or problem-solving citizen contacts. Upon completion, students should be able to provide insightful analysis of emotional, violent,</td>
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</table>
CJC 231 Constitutional Law  
Prerequisites: None  
Corequisites: None  
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.

CJC 232 Civil Liability  
Prerequisites: None  
Corequisites: None  
This course covers liability issues for the criminal justice professional. Topics include civil rights violations, tort liability, employment issues, and other related topics. Upon completion, students should be able to explain civil trial procedures and discuss contemporary liability issues.

CJC 233 Correctional Law  
Prerequisites: None  
Corequisites: None  
This course introduces statutory/case law pertinent to correctional concepts, facilities, and related practices. Topics include examination of major legal issues encompassing incarceration, probation, parole, restitution, pardon, restoration of rights, and other related topics. Upon completion, students should be able to identify/discuss legal issues which directly affect correctional systems and personnel.

CJC 241 Community-Based Corrections  
Prerequisites: None  
Corequisites: None  
This course covers programs for convicted offenders that are used both as alternatives to incarceration and in post-incarceration situations. Topics include offenders, diversion, house arrest, restitution, community service, probation and parole, including both public and private participation, and other related topics. Upon completion, students should be able to identify and discuss the various programs from the perspective of the criminal justice professional, the offender, and the community.

CJC 244 Footwear and Tire Imprints  
Prerequisites: None  
Corequisites: None  
This course provides a study of the fundamental concepts of footwear and tire imprint evidence as related to forensic science. Topics include proper photographic recording, casting, and recognition of wear patterns and imprint identification. Upon completion, the student should be able to recognize, record, photograph, and identify footwear and tire imprints.

CJC 245 Friction Ridge Analysis  
Prerequisites: None  
Corequisites: None  
This course introduces the basic elements of fingerprint technology and techniques applicable to the criminal justice field. Topics include the history and meaning of fingerprints, pattern types and classification, filing sequence, searching and referencing. Upon completion, students should be able to discuss and demonstrate the fundamental techniques of basic fingerprint technology.

CJC 246 Adv Friction Ridge Analysis  
Prerequisites: CJC 245  
Corequisites: None  
This course introduces the theories and processes of advanced friction ridge analysis. Topics include evaluation of friction ridges, chart preparation, comparative analysis for valued determination rendering proper identification, chemical enhancement and AFIS preparation and usage. Upon completion, students must show an understanding of proper procedures for friction ridge analysis through written testing and practical exercises.

CJC 250 Forensic Biology I  
Prerequisites: None  
Corequisites: BIO 110 or BIO 111  
This course covers important biological principles that are applied in the crime laboratory. Topics include forensic toxicology, forensic serology, microscopy, and DNA typing analysis, with an overview of organic and inorganic analysis. Upon completion, students should be able to articulate how a crime laboratory processes physical evidence submitted by law enforcement agencies.

CJC 251 Forensic Chemistry I  
Prerequisites: None  
Corequisites: None  
This course provides a study of the fundamental concepts of chemistry as it relates to forensic science. Topics include physical and chemical properties of substances, metric measurements, chemical changes, elements, compounds, gases, and atomic structure. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of forensic chemistry.

CJC 252 Forensic Chemistry II  
Prerequisites: CJC 251  
Corequisites: None  
This course provides a study of specialized areas of chemistry specifically related to forensic science. Topics include properties of light, emission and absorption spectra, spectrophotometry, gas and liquid chromatography, and related topics in organic and biochemistry. Upon completion, students should be able to demonstrate an understanding of specialized concepts in forensic chemistry.

CJC 255 Issue in Crim Justice App  
Prerequisites: CJC 111, CJC 221, and CJC 231  
Corequisites: None  
This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer.

**COE - Cooperative Education**

<table>
<thead>
<tr>
<th>COE 110 World of Work</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Prerequisites:</td>
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<td>Corequisites:</td>
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<tr>
<td>This course covers basic knowledge necessary for gaining and maintaining employment. Topics include job search skills, work ethic, meeting employer expectations, workplace safety,</td>
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</tbody>
</table>
and human relations. Upon completion, students should be able to successfully make the transition from school to work.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>0 0 10 1</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>0 0 20 2</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>0 0 30 3</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 114</td>
<td>Co-op Work Experience I</td>
<td>0 0 40 4</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 115</td>
<td>Work Experience Seminar I</td>
<td>1 0 0 1</td>
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<td>Prerequisites: Corequisites: COE 111, COE 112, COE 113, or COE 114 Course description related to individual program.</td>
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<tr>
<td>COE 121</td>
<td>Co-op Work Experience II</td>
<td>0 0 10 1</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 122</td>
<td>Co-op Work Experience II</td>
<td>0 0 20 2</td>
<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
</tr>
<tr>
<td>COE 123</td>
<td>Co-op Work Experience II</td>
<td>0 0 30 3</td>
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<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 124</td>
<td>Co-op Work Experience II</td>
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<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<tr>
<td>COE 125</td>
<td>Work Experience Seminar II</td>
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<td>Prerequisites: Corequisites: COE 121, COE 122, COE 123, or COE 124 Course description related to individual program.</td>
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<tr>
<td>COE 131</td>
<td>Co-op Work Experience III</td>
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<td></td>
<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<td>COE 132</td>
<td>Co-op Work Experience III</td>
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<td>Prerequisites: Corequisites: This course provides work experience with a college approved employer in an area related to the Student’s program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work related competencies.</td>
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<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Co-Reqs</td>
<td>Prereqs</td>
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<td>COE 133</td>
<td>Co-op Work Experience III</td>
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<td>None</td>
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<tr>
<td>COE 134</td>
<td>Co-op Work Experience III</td>
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<tr>
<td>COE 211</td>
<td>Co-op Work Experience IV</td>
<td>0 0 10</td>
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<tr>
<td>COE 212</td>
<td>Co-op Work Experience IV</td>
<td>0 0 20</td>
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<tr>
<td>COE 213</td>
<td>Co-op Work Experience IV</td>
<td>0 0 30</td>
<td>3</td>
<td>None</td>
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<tr>
<td>COE 214</td>
<td>Co-op Work Experience IV</td>
<td>0 0 40</td>
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</table>

**COM - Communication (Speech)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Co-Reqs</th>
<th>Prereqs</th>
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<tbody>
<tr>
<td>COM 110</td>
<td>Introduction to Communication</td>
<td>3 0 3</td>
<td>Corequisites: None</td>
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<tr>
<td>COM 111</td>
<td>Voice and Diction I</td>
<td>3 0 3</td>
<td>Corequisites: None</td>
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</tr>
<tr>
<td>COM 112</td>
<td>Voice and Diction II</td>
<td>3 2 4</td>
<td>Corequisites: COM 111</td>
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<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
<td>3 0 3</td>
<td>Corequisites: None</td>
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<tr>
<td>COM 140</td>
<td>Intercultural Communication</td>
<td>3 0 3</td>
<td>Corequisites: None</td>
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</tbody>
</table>
COM 150 Intro. to Mass Comm.  3  0  3  
Prerequisites: ENG 111  
Corequisites: ENG 112, ENG 113 or ENG 114  
This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Emphasis is on the nature, history, functions, and responsibilities of mass communication industries in a global environment and their role and impact in American society. Upon completion, students should have an awareness of the pervasive nature of the mass media and how the media operate in an advanced post-industrial society. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

COM 231 Public Speaking  3  0  3  
Prerequisites:  
Corequisites: None  
This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. Special emphasis may be placed on business, health and education contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in speech/communication.

COM 232 Election Rhetoric  3  0  3  
Prerequisites:  
Corequisites: None  
This course provides an overview of communication styles and topics characteristic of election campaigns. Topics include election speeches, techniques used in election campaigns, and election speech topics. Upon completion, students should be able to identify and analyze techniques and styles typically used in election campaigns.

COM 233 Persuasive Speaking  3  0  3  
Prerequisites: ENG 112 or ENG 113 or permission of Program Chair  
Corequisites: None  
This course introduces theory and history of persuasive peaking, covering critical thinking skills in analyzing problems, assessing solutions, and communicating the information to an audience. Emphasis is placed on analysis, evidence, reasoning, and library and field research used to enhance persuasive public speaking skills. Upon completion, students should be able to apply the principles of persuasive speaking in a public setting. Students will demonstrate an understanding of the complexities of social persuasion inherent in mass media, ethics, propaganda, political and public information campaigns.

COM 251 Debate I  3  0  3  
Prerequisites:  
Corequisites: None  
This course introduces the principles of debate. Emphasis is placed on argument, refutation, research, and logic. Upon completion, students should be able to use research skills and logic in the presentation of ideas within the context of formal debate.

CTS – Computer Information Technology

CTS 112 Windows™  
Prerequisites: None  
Corequisites: None  
This course includes the fundamentals of the Windows™ software. Topics include graphical user interface, icons, directories, file management, accessories, and other applications. Upon completion, students should be able to use Windows™ software in an office environment.

CTS 115 Info Sys. Business Concept  3  0  3  
Prerequisites: None  
Corequisites: None  
The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the ‘hybrid business manager’ and the potential offered by new technology and systems.

CTS 120 Hardware/Software Support  2  3  3  
Prerequisites: CIS 110 or CIS 111  
Corequisites: None  
This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

CTS 125 Presentation Graphics  2  2  3  
Prerequisites CIS 110 or CIS 111  
Corequisites: None  
This course provides hands-on experience with a graphics presentation package. Topics include terminology, effective chart usage, design and layout, integrating hardware components, and enhancing presentations with text, graphics, audio and video. Upon completion, students should be able to design and demonstrate an effective presentation.

CTS 210 Computer Ethics  3  0  3  
Prerequisites: CIS 110 or CIS 111 or NET 110 or NET 111  
Corequisites: None  
This course introduces the student to current legal and ethical issues in the computer/engineering field. Topics include moral reasoning, ethical standards, intellectual property, social issues, encryption, software piracy, constitutional issues, and public policy in related matters. Upon completion, students should be able to demonstrate an understanding of the moral and social responsibilities and public policy issues facing an industry.

CTS 240 Project Management  2  2  3  
Prerequisites: CIS 110 or CIS 111  
Corequisites: None  
This course introduces computerized project management
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tr>
<td>CUL 110</td>
<td>Sanitation and Safety</td>
<td>2</td>
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<td></td>
<td>Prerequisites: CPT sentence skills 68-85; CPT reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td>This course introduces the basic principles of sanitation and safety and their relationship to the hospitality industry. Topics include personal hygiene, sanitation and safety regulations, use and care of equipment, the principles of food-borne illness, and other related topics. Upon completion, students should be able to demonstrate an understanding of sanitation and safety procedures in the hospitality industry.</td>
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<tr>
<td>CUL 112</td>
<td>Nutrition for Foodservice</td>
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<td>Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td>This course covers the principles of nutrition and its relationship to the foodservice industry. Topics include fundamentals of personal nutrition over the life cycle, weight management and exercise, health aspects of nutrition, developing healthy recipes and menus, healthy cooking techniques and marketing nutrition in a foodservice operation. Upon completion, students should be able to apply basic nutritional concepts to food preparation and selection.</td>
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<tr>
<td>CUL 120</td>
<td>Purchasing</td>
<td>2</td>
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<td></td>
<td>Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td>This course covers purchasing for hotels and restaurants. Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product.</td>
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<tr>
<td>CUL 130</td>
<td>Menu Design</td>
<td>2</td>
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<td></td>
<td>Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td>This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utility, demographics, and customer needs. Upon completion, students should be able to write, lay out, and produce effective menus for a variety of hospitality settings.</td>
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<tr>
<td>CUL 135</td>
<td>Food and Beverage Service</td>
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<td></td>
<td>Prerequisite: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td>This course covers the practical skills and knowledge for effective food and beverage service in a variety of settings. Topics include reservations, greeting and service of guests, styles of service, handling complaints, and sales and merchandising. Upon completion, students should be able to demonstrate competence in human relations and technical skills required in the service of foods and beverages.</td>
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<tr>
<td>CUL 135A</td>
<td>Food and Beverage Service Lab</td>
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<td>Corequisites: CUL 135, Signature permission required</td>
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<td>This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.</td>
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<tr>
<td>CUL 140</td>
<td>Basic Culinary Skills</td>
<td>2</td>
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<td>Corequisites: CUL 110, Signature permission required</td>
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<td>This course introduces the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on recipe conversion, measurements, terminology, knife skills, safe food handling, cooking methods, flavorings, seasonings, stocks/sauces/soups, and other related topics. Upon completion, students should be able to exhibit the basic cooking skills used in the food service industry. Guest service may be a course component.</td>
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<tr>
<td>CUL 150</td>
<td>Food Science</td>
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<td>Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64</td>
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<td>Corequisites: Signature permission required</td>
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<td></td>
<td>This course covers the chemical and physical changes in foods that occur with cooking, handling, and processing. Topics</td>
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</table>
include heat transfer and its effect on color, flavor, and texture; and emulsification, protein coagulation, leavening agents, viscosity, and gel formation. Upon completion, students should be able to demonstrate an understanding of the principles covered as they apply to food preparation in an experimental setting.

**CUL 160 Baking I**  
1 4 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64  
Corequisites: CUL 110, Signature permission required  
This course covers basic ingredients, weights and measures, baking terminology, and formula calculations. Topics include yeast-raised products, quick breads, pastry dough, various cakes and cookies, and appropriate filling and finishing techniques. Upon completion, students should be able to prepare and evaluate baked products.

**CUL 160A Baking I Lab**  
0 3 1  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: CUL 160, Signature permission required  
This is a laboratory course to accompany CUL 160. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 160. Upon completion, students should be able to demonstrate a basic proficiency in bakeshop applications.

**CUL 170 Garde Manger I**  
1 4 3  
Prerequisites: CUL 140, CUL 110  
Corequisites: Signature permission required  
This course introduces basic cold food preparation techniques and pantry production. Topics include salads, sandwiches, appetizers, dressings, basic garnishes, cheeses, cold sauces, and related food items. Upon completion, students should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.

**CUL 170A Garde Manger I Lab**  
0 3 1  
Prerequisites: CUL 140, CUL 110  
Corequisites: CUL 170, Signature permission required  
This is a laboratory course to accompany CUL 170. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 170. Upon completion, students should be able to demonstrate proficiency in the design of a basic cold food display.

**CUL 180 International and American Regional Cuisine**  
1 8 5  
Prerequisites: CUL 240  
Corequisites: Signature permission required  
This course provides practical experience in the planning, preparation, and service of representative foods from different countries and regions of America. Emphasis is placed on eating habits, indigenous foods and customs, nutritional concerns, and traditional equipment. Upon completion, students should be able to research and execute international and domestic menus. Guest service may be a course component.

**CUL 240 Advanced Culinary Skills**  
1 8 5  
Prerequisites: CUL 140, CUL 110  
Corequisites: Signature permission required  
This course is a continuation of CUL 140. Emphasis is placed on meat fabrication and butchery; vegetable, starch, and protein cookery; compound sauces; plate presentation; breakfast cookery; and quantity food preparation. Upon completion, students should be able to plan, execute, and successfully serve entrees with complementary side items. Guest service may be a course component.

**CUL 260 Baking II**  
1 4 3  
Prerequisites: CUL 160, CUL 110  
Corequisites: Signature permission required  
This course is a continuation of CUL 160. Topics include specialty breads, pastillage, marzipan, chocolate, pulled-sugar, confections, classic desserts, pastries, and cake decorating. Upon completion, students should be able to demonstrate pastry preparation and plating, cake decorating, and show-piece production skills.

**CUL 260A Baking II Lab**  
0 3 1  
Prerequisites: CUL 160, CUL 110  
Corequisites: CUL 260, Signature permission required  
This is a laboratory course to accompany CUL 260. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 260. Upon completion, students should be able to perform cake decorating techniques, produce pastry showpieces, and prepare and plate assorted pastries.

**CUL 270 Garde Manger II**  
1 4 3  
Prerequisites: CUL 170  
Corequisites: Signature permission required  
This course is a continuation of CUL 170. Topics include pâtés, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapés, hors d’oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate showpieces.

**CUL 270A Garde Manger II Lab**  
0 3 1  
Prerequisites: CUL 170  
Corequisites: CUL 270, Signature permission required  
This is a laboratory course to accompany CUL 270. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 270. Upon completion, students should be able to demonstrate proficiency in the design and technical applications of advanced garde manger work including classical cold buffets with appropriate showpieces.

**CUL 275 Catering Cuisine**  
1 8 5  
Prerequisites: CUL 240  
Corequisites: Signature permission required  
This course explores sequential steps to successful catering that includes sales, client needs, planning menus, purchasing, costing, pricing events, staffing and sanitation concerns. Emphasis is placed on new culinary competencies and skills specific to catering preparation, presentation, and service. Upon completion, students should be able to demonstrate proficiency in the successful design and execution of various catering events.

**CVT - Cardiovascular Technology**

**ICT 114 Intro Cardiovascular Tech**  
3 0 0 3  
Prerequisites: None  
Corequisites: NCT 113 and ICT 134  
This course provides information related to the profession of cardiovascular technology. Emphasis is placed on professional ethics, communication and patient care techniques and an overview of cardiac catheterization. Upon completion, students should be able to describe the field of cardiovascular technology, discuss patient care issues and basic information about cardiac catheterization.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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</thead>
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<td>ICT 134 CV Anatomy and Physiology</td>
<td>2 0 0 2</td>
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<tr>
<td></td>
<td>Prerequisites: None</td>
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</tr>
<tr>
<td></td>
<td>Corequisites: ICT 114 and NCT 113</td>
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<td>This course provides information related to cardiac anatomy and physiology. Emphasis is placed on embryology and pathophysiology, diagnosis and treatment of cardiovascular diseases. Upon completion, students should be able to identify normal and abnormal cardiac states, course of treatment and describe fetal cardiac development.</td>
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<tr>
<td>ICT 136 Cardiac Cath I</td>
<td>3 2 3 5</td>
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<td></td>
<td>Prerequisites: ICT 114, ICT 134, and NCT 113</td>
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<td>Corequisites: NCT 133 and NCT 143</td>
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<td>This course provides an introduction to diagnostic techniques utilized in the cardiac catheterization lab. Emphasis is placed on cardiovascular angiographic procedures and assessment, x-ray theory and safety, pharmacology and development of cath lab skills. Upon completion, students should be able to identify cardiovascular anatomy through angiographic assessment, identify basic cardiovascular drugs and demonstrate basic cath lab skills.</td>
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<tr>
<td>ICT 214 Cardiac Cath II</td>
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<td></td>
<td>Prerequisites: ICT 136, NCT 133 and NCT 143</td>
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<td>Corequisites: None</td>
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<td>This course provides advanced study of diagnostic and interventional techniques utilized in the cardiac catheterization lab. Emphasis is placed on analysis of hemodynamics, calculations and protocols/instrumentation utilized in interventional procedures. Upon completion, students should be able to demonstrate competency in analyzing hemodynamic data, apply concepts of interventional procedures and increased competence in clinical skills.</td>
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<tr>
<td>ICT 234 Cardiac Cath III</td>
<td>2 0 30 12</td>
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<td>Prerequisites: ICT 214</td>
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<td></td>
<td>Corequisites: None</td>
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<td>This course will provide continued opportunity for clinical experience for the student by utilizing a full-time clinical internship. Emphasis is placed on supervised participation in the cardiac catheterization lab. Upon completion, students should be able to describe cardiac catheterization techniques and demonstrate entry level skills.</td>
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<td>NCT 113 Electrocardiography</td>
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<td></td>
<td>Prerequisites: None</td>
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<td>Corequisites: ICT 114 and ICT 134</td>
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<td>This course introduces the principles of electrocardiography, cardiac exercise testing, ambulatory monitoring and cardiac pacemakers. Emphasis is placed on understanding the concepts of electrophysiology of the heart, arrhythmia detection and management. Upon completion, students should be able to perform and interpret the electrocardiogram and describe noninvasive cardiac testing modalities in the evaluation of cardiovascular diseases.</td>
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<td>NCT 133 Noninvasive Cardiovascular Fundamentals</td>
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<td>Prerequisites: ICT 114, ICT 134 and NCT 113</td>
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<td></td>
<td>Corequisites: ICT 136 and NCT 143</td>
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<td>This course introduces the basic principles and applications of echocardiography. Emphasis is placed on the physical assessment and physical principles of diagnostic ultrasound. Upon completion, students should be able to apply echocardiographic principles for diagnostic examinations.</td>
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<tr>
<td>NCT 143 Echocardiography I</td>
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<td></td>
<td>Prerequisites: ICT 114, ICT 134 and NCT 113</td>
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<td></td>
<td>Corequisites: ICT 136 and NCT 133</td>
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<td>This course introduces echocardiographic procedures, imaging modalities and their applications in the diagnosis of cardiovascular diseases. Emphasis is placed on the diagnostic capabilities of noninvasive procedures in relation to clinical presentations of cardiovascular diseases and development of basic imaging skills. Upon completion, students should be able to perform basic echocardiographic examinations and describe the diagnostic information obtained by noninvasive procedures.</td>
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<td>NCT 251 Echocardiography II</td>
<td>2 2 12 7</td>
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<td>Prerequisites: ICT 136, NCT 133 and NCT 143</td>
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<td>Corequisites: NCT 253</td>
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<td>This course provides an advanced study of echocardiographic applications and techniques utilized in the diagnosis of acquired cardiovascular diseases. Emphasis is placed on the correlation of echocardiographic findings with the disease state and the ability to relate these findings with clinical presentation. Upon completion, students should be able to perform an echocardiogram, with recognition of normal and abnormal pathology.</td>
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<td>NCT 253 Hemodynamic Echo Prin.</td>
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<td>Prerequisites: ICT 136, NCT 133 and NCT 143</td>
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<td>Corequisites: NCT 251</td>
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<td>This course provides an introduction to the hemodynamic approach in performing an echocardiogram to detect cardiovascular heart disease. Emphasis is placed on the applications of hemodynamic calculations in valvular heart disease and development of quality standard practices for quality patient care outcomes. Upon completion, students should be able to perform hemodynamic calculations on an echocardiogram.</td>
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<tr>
<td>NCT 273 Echocardiography III</td>
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<td></td>
<td>Prerequisites: NCT 251 and NCT 253</td>
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<td></td>
<td>Corequisites: None</td>
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<td>This course provides expanded techniques and concepts required for a comprehensive echocardiographic examination. Emphasis is placed on advanced qualitative and quantitative calculations, and congenital heart disease. Upon completion, students should be able to perform diagnostic echocardiographic examinations.</td>
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<td>CYT 210 Introduction to Clinical Cytology</td>
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<td>Prerequisites: Enrollment in the Cytotechnology program Corequisites: CYT 212, CYT 214, CYT 216, and CYT 222</td>
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<td>This course provides an overview of the fundamentals of cell biology, basic histology, and pathology of tumors as they relate to clinical cytology. Topics include basic sciences, as well as inflammatory processes, morphology and classification of microorganisms, and basic clinical cytology terminology. Upon completion, students should be able to discuss the basic histologic and pathologic concepts common to the diagnostic cytology of all body systems.</td>
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</table>
CPCC 201 Introduction to Cytologic Techniques
Prerequisites: Enrollment in the Cytotechnology program Corequisites: CYT 210, CYT 214, CYT 216, and CYT 222
The course covers care and use of the light microscope and histologic and cytologic specimen preparation techniques and equipment. Topics include laboratory safety, chemical hygiene, universal precautions, and fundamentals of staining and fixation. Upon completion, students should be able to discuss and demonstrate the care and use of the microscope and discuss basic concepts of staining and fixation.

CPY 214 Gynecologic Cytology
Prerequisites: Enrollment in the Cytotechnology program Corequisites: CYT 210, CYT 212, CYT 214, and CYT 222
This course covers gynecologic cytology, including normal anatomy, physiology, histology, cytology, malignancies, and treatment modalities. Topics include hormonal cytology, microorganisms and their manifestations, precursor lesions, and carcinomas. Upon completion, students should be able to demonstrate competence in cytologic criteria and gynecologic cytology.

CPY 216 Clinical and Diagnostic Interpretation I
Prerequisites: Enrollment in the Cytotechnology program Corequisites: CYT 210, CYT 212, CYT 214, and CYT 222
This course covers cytologic criteria for representative cytologic and histologic specimens. Emphasis is placed on the cytology and histology of the female reproductive system. Upon completion, students should be able to demonstrate competence in the application of cytologic criteria for gynecologic cytology.

CPY 220 Non-Gynecologic Cytology
Prerequisites: CYT 210, CYT 212, CYT 214, CYT 216, and CYT 222
Corequisites: CYT 224, CYT 226, CYT 236, and CYT 238
This course covers non-gynecologic cytology and fine needle aspiration biopsy of all body sites. Topics include the anatomy, histology, pathology, and cytopathology of the respiratory system, alimentary canal, body cavities, urinary tract, and breast and aspiration cytology. Upon completion, students should be able to demonstrate competence in the use of cytologic criteria as applied to non-gynecologic cytology.

CPY 222 Cytopreparation Techniques
Prerequisites: Enrollment in the Cytotechnology program Corequisites: CYT 210, CYT 212, CYT 214, and CYT 216
This course covers the fundamental principles of cytopreparation for histologic and cytologic specimens. Emphasis is placed on techniques related to cytopreparation. Upon completion, students should be able to demonstrate competence in the various cytopreparation methods.

CPY 224 Gynecologic Cytology Clinical Practicum I
Prerequisites: CYT 210, CYT 212, CYT 214, CYT 216, and CYT 222
Corequisites: CYT 220, CYT 224, CYT 226, CYT 236, and CYT 238
This course provides supervised clinical experience in gynecologic cytology procedures. Emphasis is placed on cytopathologic diagnosis by routine screening methods. Upon completion, students should be able to demonstrate mastery of all diagnostic skills with a minimum competence of 80%.

CPY 226 Clinical and Diagnostic Interpretation II
Prerequisites: CYT 210, CYT 212, CYT 214, CYT 216, and CYT 222
Corequisites: CYT 220, CYT 224, CYT 226, and CYT 238
This course covers cytologic criteria for representative cytologic and histologic specimens. Emphasis is placed on the cytology and histology of all areas of non-gynecologic cytology and fine needle aspiration biopsy. Upon completion, students should be able to demonstrate competence in the use of cytologic criteria for non-gynecologic cytology and fine needle aspiration biopsy.

CPY 230 Non-Gynecologic Cytology Clinical Practicum
Prerequisites: CYT 220, CYT 224, CYT 226, CYT 236, and CYT 238
Corequisites: CYT 232, and CYT 234
This course provides supervised clinical experience in non-gynecologic cytologic procedures. Emphasis is placed on differential diagnosis in non-gynecologic cytology. Upon completion, students should be able to demonstrate mastery of all diagnostic skills with a minimum competence of 80%.

CPY 232 Clinical Cytotechnology Practicum
Prerequisites: CYT 220, CYT 224, CYT 226, CYT 236, and CYT 238
Corequisites: CYT 230, and CYT 234
This course provides supervised clinical experience in a variety of clinical settings. Emphasis is placed on teamwork in the clinical setting with utilization of cytdiagnostic and cytopreparation skills. Upon completion, students should be able to function effectively as an entry-level cytotechnologist.

CPY 234 Gynecologic Cytology
Prerequisites: CYT 220, CYT 224, CYT 226, CYT 236, and CYT 238
Corequisites: CYT 230, and CYT 232
This course provides supervised clinical experience in gynecologic cytologic procedures. Emphasis is placed on the development of solid working criteria in routine cytology screening. Upon completion, students should be able to demonstrate mastery of all diagnostic skills with a minimum competence of 80%.

CPY 236 Cytology Literature Review
Prerequisites: Prerequisites: CYT 210, CYT 212, CYT 214, CYT 216, and CYT 222
Corequisites: CYT 220, CYT 224, CYT 226, and CYT 238
This course covers the development of a scientific, cytology-oriented research paper. Emphasis is placed on the development and presentation of a research proposal utilizing scientific methods, literature reviews, and interpretation of data. Upon completion, students should be able to prepare a scientific research paper based on the scientific method.

CPY 238 Cytotechnology Professional Issues
Prerequisites: CYT 210, CYT 212, CYT 214, CYT 216, and CYT 222
Corequisites: CYT 220, CYT 224, CYT 226, and CYT 236
This course covers the essentials of laboratory organization and management, the fundamentals of laboratory accreditation, and basic principles and applications of immunocytochemistry. Emphasis is placed on discussions of articles from current cytology journals with applications to the practice of cytopathology.
**DAN - Dance**

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td><strong>DAN 110 Dance Appreciation</strong></td>
<td>3</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course for non-dance majors surveys diverse dance forms and the religious and cultural values that shape them. Topics include dances from Europe, Africa, Asia, and America. Upon completion, students should be able to demonstrate an understanding of the diverse forms and values that dance embraces. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</em></td>
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| **DAN 121 Tap Dance I** | 0       | 3   | 1      |
| Prerequisites:         |         |     |        |
| Corequisites: None     |         |     |        |
| This course provides the fundamentals of elementary tap dance technique. Emphasis is placed on sounds, rhythms, terminology, and body placement. Upon completion, students should be able to demonstrate significant progress in elementary tap skills. |

| **DAN 122 Tap Dance II** | 0       | 3   | 1      |
| Prerequisites: DAN 121 |         |     |        |
| Corequisites: None     |         |     |        |
| This course is the second in a series and provides an expansion of elementary tap dance techniques. Emphasis is placed on weight shifts, turns, and more complex rhythm patterns. Upon completion, students should be able to demonstrate a moderate mastery of elementary/intermediate tap dance skills. |

| **DAN 124 Jazz Dance I** | 0       | 3   | 1      |
| Prerequisites:         |         |     |        |
| Corequisites: None     |         |     |        |
| This course provides the fundamentals of elementary jazz technique. Emphasis is placed on sounds, rhythms, terminology, and body placement. Upon completion, students should be able to demonstrate significant progress in elementary jazz dance technique and simple center combinations. |

| **DAN 125 Jazz Dance II** | 0       | 3   | 1      |
| Prerequisites: DAN 124 |         |     |        |
| Corequisites: None     |         |     |        |
| This course is the second in a series and provides an expansion of elementary/intermediate jazz dance. Emphasis is placed on “Cool Jazz,” theatrical jazz styles, and extended sequences of movement (routines). Upon completion, students should be able to demonstrate moderate mastery of elementary/intermediate-level jazz dance and be able to perform routines. |

| **DAN 130 Ballet I** | 0       | 4   | 2      |
| Prerequisites:       |         |     |        |
| Corequisites: None   |         |     |        |
| This course introduces the elementary elements of ballet technique. Emphasis is placed on simple positions, body placement, classroom discipline, and the Dalcroze method of counting music. Upon completion, students should be able to recognize the names and rhythms of basic steps and be able to perform those movements at barre and in center. |

| **DAN 131 Ballet II** | 0       | 4   | 2      |
| Prerequisites: DAN 130 |         |     |        |
| Corequisites: None     |         |     |        |
| This course is the second in a series of elementary ballet techniques. Emphasis is placed on motor skill development, elementary allegro steps, and body positions. Upon completion, students should be able to exhibit moderate technical skill in elementary ballet. |

| **DAN 132 Intermediate Ballet I** | 0       | 4   | 2      |
| Prerequisites: DAN 131 |         |     |        |
| Corequisites: None     |         |     |        |
| This course introduces the intermediate elements of ballet technique. Emphasis is placed on intermediate steps, memory of set patterns, and progress in skills, especially turns and allegros. Upon completion, students should be able to exhibit significant progress in intermediate ballet technique and the ability to memorize extended combinations of steps. |

| **DAN 133 Intermediate Ballet II** | 0       | 4   | 2      |
| Prerequisites: DAN 132 |         |     |        |
| Corequisites: DAN 134 |         |     |        |
| This course is the second in a series of intermediate ballet technique. Emphasis is placed on progress in intermediate skills, memory and execution of steps, especially Grande Allegro. Upon completion, students should be able to exhibit significant achievement in intermediate ballet technique and the ability to quickly learn and retain combinations. |

| **DAN 134 Ballet Pointe Work** | 0       | 2   | 1      |
| Prerequisites: DAN 132 or DAN 133 |         |     |        |
| Corequisites: None |         |     |        |
| This course provides the fundamentals of pointe work. Emphasis is placed on releve, piques (pose), body placement, and foot strengthening. Upon completion, students should be able to execute simple ballet steps on pointe at the barre and in center. |

| **DAN 140 Modern Dance I** | 0       | 4   | 2      |
| Prerequisites:         |         |     |        |
| Corequisites: None     |         |     |        |
| This course introduces the elementary elements of modern dance technique. Emphasis is placed on floor, barre, and center floor exercises. Upon completion, students should be able to exhibit a basic understanding and skill in performing elementary modern dance technique. |

| **DAN 141 Modern Dance II** | 0       | 4   | 2      |
| Prerequisites: DAN 140 |         |     |        |
| Corequisites: None     |         |     |        |
| This course is the second in a series of elementary modern dance technique. Emphasis is placed on motor skill development and simple combinations in center floor. Upon completion, students should be able to exhibit moderate technical skill in elementary modern dance technique. |

| **DAN 142 Intermediate Modern Dance I** | 0       | 4   | 2      |
| Prerequisites: DAN 141 |         |     |        |
| Corequisites: None     |         |     |        |
| This course introduces intermediate modern dance technique. Emphasis is placed on kinesthesia (body energy) and intermediate movements including turns, spirals, and jumps. Upon completion, students should be able to demonstrate significant progress in intermediate technique and extended movement sequences. |

| **DAN 143 Intermediate Modern Dance II** | 0       | 4   | 2      |
| Prerequisites: DAN 142 |         |     |        |
| Corequisites: None     |         |     |        |
| This course is the second in a series of intermediate modern dance technique. Emphasis is placed on progress in intermediate skills, musical phrasing, and introduction to selections of modern dance repertoire. Upon completion, students should be able
to demonstrate significant achievement in intermediate
technique and to begin to practice selections of its repertoire.

DAN 191 Selected Topics in Dance 0-1 0-3 1
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of cur-
rent interest in specific program or discipline areas. Emphasis is
placed on subject matter appropriate to the program or disci-
pline. Upon completion, students should be able to demonstrate
an understanding of the specific area of study.

DAN 192 Selected Topics in Dance 0-2 0-6 2
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of cur-
rent interest in specific program or discipline areas. Emphasis is
placed on subject matter appropriate to the program or disci-
pline. Upon completion, students should be able to demonstrate
an understanding of the specific area of study.

DAN 193 Selected Topics in Dance 1-3 0-6 3
Prerequisites:
Corequisites: None
This course provides an opportunity to explore areas of cur-
rent interest in specific program or discipline areas. Emphasis is
placed on subject matter appropriate to the program or disci-
pline. Upon completion, students should be able to demonstrate
an understanding of the specific area of study.

DAN 196 Seminar in Dance 0-1 0-3 1
Prerequisites:
Corequisites: None
This course provides an opportunity to explore topics of cur-
rent interest. Emphasis is placed on the development of critical
listening skills and the presentation of seminar issues. Upon comple-
tion, students should be able to critically analyze issues and estab-
lish informed opinions.

DAN 197 Seminar in Dance 0-2 0-6 2
Prerequisites:
Corequisites: None
This course provides an opportunity to explore topics of cur-
rent interest. Emphasis is placed on the development of critical
listening skills and the presentation of seminar issues. Upon comple-
tion, students should be able to critically analyze issues and estab-
lish informed opinions.

DAN 198 Seminar in Dance 1-3 0-6 3
Prerequisites:
Corequisites: None
This course provides an opportunity to explore topics of cur-
rent interest. Emphasis is placed on the development of critical
listening skills and the presentation of seminar issues. Upon comple-
tion, students should be able to critically analyze issues and estab-
lish informed opinions.

DAN 211 Dance History I 3 0 3
Prerequisites:
Corequisites: None
This course provides an in-depth study of world dance from pre-
history to 1800. Emphasis is placed on examining the dance
and dancers of diverse cultures including Africa, Asia, and
Europe. Upon completion, students should be able to analyze
the common need to dance and the forms, religions, and cultural
values it embodies. This course has been approved to satisfy the
Comprehensive Articulation Agreement general education core
requirement in humanities/fine arts.

DAN 212 Dance History II 3 0 3
Prerequisites:
Corequisites: None
This course provides an in-depth study of world dance from
1800 to the present. Emphasis is placed on Western theatrical
dance (ballet, modern dance, tap, and jazz) and the personalities
that shaped it. Upon completion, students should be able to ana-
yze culturally diverse dance forms and their cross-pollenation
which have produced the “pan world dance of today.” This
course has been approved to satisfy the Comprehensive Articu-
lation Agreement general education core requirement in
humanities/fine arts.

DAN 221 Advanced Modern
Dance I 0 4 2
Prerequisites: DAN 143
Corequisites: None
This course introduces the advanced elements of modern
dance technique. Emphasis is placed on advanced movements,
mastery of technical skills, and spatial divisions. Upon comple-
tion, students should be able to demonstrate significant progress
in the execution of all movements and to demonstrate a sense of
quality in them.

DAN 222 Advanced Modern Dance II 0 4 2
Prerequisites: DAN 221
Corequisites: None
This course is the second in a series of advanced modern
dance technique. Emphasis is placed on mastery and quality of
technical skills and execution of complicated movement vari-
ations in extended sequence. Upon completion, students should
be able to demonstrate significant achievement in modern dance
skills and the ability to perform modern dance repertoire.

DAN 225 Choreography I 1 4 3
Prerequisites: DAN 140
Corequisites: Enrollment in DAN 142 or
higher-level dance class
This course introduces the fundamental techniques of mod-
er dance choreography. Emphasis is placed on improvisation
and development of movement phrases. Upon completion, stu-
dents should be able to create simple movements, improvise
upon them, and develop longer movement phrases to create
short dances.

DAN 226 Choreography II 1 4 3
Prerequisites: DAN 140
Corequisites: Enrollment in DAN 142 or
higher-level dance class
This course introduces the elements of dance (time, space,
form) and structural forms as used to choreograph. Emphasis is
placed on the use of design, dynamics, rhythm, motivation, and
musical forms to create dances. Upon completion, students should
be able to utilize the elements of time, space, and form and form
manipulation to choreograph and rehearse a group dance.

DAN 236 Advanced Ballet I 0 4 2
Prerequisites: DAN 133
Corequisites: None
This course introduces the advanced elements of ballet tech-
nique. Emphasis is placed on refinement of all technical skills,
learning advanced movements, pointe (female) and big jumps
(male). Upon completion, students should be able to exhibit sig-
ificant progress in the execution of all movements and to
demonstrate a sense of quality in them.
DAN 237 Advanced Ballet II  0  4  2
Prerequisites: DAN 236
Corequisites: None
This course is the second in a series of advanced ballet technique. Emphasis is placed on mastery and quality of all skills, refinement of movements, pointe (female) and big jumps (male). Upon completion, students should be able to demonstrate significant achievement in all ballet skills and the ability to perform ballet repertoire.

DAN 262B Dance Performance  2  2  3
Prerequisites:
Corequisites: Enrollment in a dance technique class
This course includes audition, casting, rehearsal, and video performance of a new ballet. Emphasis is placed on universal rehearsal techniques, improvement of dance techniques, teamwork, and performance of new choreography. Upon completion, students should be able to demonstrate through video performance a basic knowledge of the creation of a new ballet. DAN 262B is ballet performance.

DAN 262M Dance Performance  2  2  3
Prerequisites:
Corequisites: Enrollment in a dance technique class
This course includes audition, casting, rehearsal, and video performance of a new ballet. Emphasis is placed on universal rehearsal techniques, improvement of dance techniques, teamwork, and performance of new choreography. Upon completion, students should be able to demonstrate through video performance a basic knowledge of the creation of a new ballet. DAN 262M is modern dance performance.

DAN 264B Dance Production  0  9  3
Prerequisites:
Corequisites: Enrollment in a dance technique class
This course covers creation, rehearsal, and performance, before a live audience, of a new or reconstructed work by faculty, guest artist, or repertory. Emphasis is placed on movement, memory skills, role development, accepted professional behavior, and ability to project the choreographer’s intent. Upon completion, students should be able to demonstrate through performance a basic knowledge of the artistic and technical aspects of performing before a live audience. DAN 264B is ballet production.

DAN 264M Dance Production  0  9  3
Prerequisites:
Corequisites: Enrollment in a dance technique class
This course covers creation, rehearsal, and performance, before a live audience, of a new or reconstructed work by faculty, guest artist, or repertory. Emphasis is placed on movement, memory skills, role development, accepted professional behavior, and ability to project the choreographer’s intent. Upon completion, students should be able to demonstrate through performance a basic knowledge of the artistic and technical aspects of performing before a live audience. DAN 264M is modern dance production.

DBA - Database Management

DBA 110 Database Concepts  2  3  3
Prerequisites: CIS 110 or CIS 111 or CIS 115
Corequisites: None
This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal edition, MS Access, and SQL Server are required for online sections.

DBA 112 Database Utilization  2  2  3
Prerequisites: CIS 110 or CIS 111 or OST 137
Corequisites: None
This course introduces basic database functions and uses. Emphasis is placed on database manipulation with queries, reports, forms, and some table creation. Upon completion, students should be able to enter and manipulate data from the end user mode. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of MS Access is required for online sections.

DBA 115 Database Applications  2  2  3
Prerequisites: DBA 110
Corequisites: None
This course applies concepts learned in DBA 110 to a specific DBMS. Topics include manipulating multiple tables, advanced queries, screens and reports, linking, and command files. Upon completion, students should be able to create multiple table systems that demonstrate updates, screens, and reports representative of industry requirements. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of MS Access is required for online sections.

DBA 120 Database Programming I  2  2  3
Prerequisites: DBA 110 and DBA 115
Corequisites: None
This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update, and produce reports. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal edition is required for online sections.

DBA 210 Database Administration  2  3  3
Prerequisites: DBA 110 or DBA 115 or DBA 120
Corequisites: None
This course covers database administration issues and distributed database concepts. Topics include: database administrator (DBA) goals and functions, backup and recovery, standards and procedures, training, and database security and performance evaluations. Upon completion, students should be able to functions DBA documentation and administer a database. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal edition is required for online sections.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA 220</td>
<td>Oracle Database Programming II</td>
<td>2 2 3</td>
<td>This course is designed to enhance programming skills developed in DBA120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop an Oracle DBMS application which includes a GUI front-end and report generation. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal edition is required for online sections.</td>
</tr>
<tr>
<td>DBA 221</td>
<td>SQL Server Database Programming II</td>
<td>2 2 3</td>
<td>This course is designed to enhance programming skills developed in DBA120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a SQL Server DBMS application which includes a GUI front-end and report generation. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
</tr>
<tr>
<td>DBA 222</td>
<td>DB2 Database Programming II</td>
<td>2 2 3</td>
<td>This course is designed to enhance programming skills developed in DBA120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a DB2 DBMS application which includes a GUI front-end and report generation. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of DB2 is required for online sections.</td>
</tr>
<tr>
<td>DBA 223</td>
<td>MySQL Database Programming II</td>
<td>2 2 3</td>
<td>This course is designed to enhance programming skills developed in DBA120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a MySQL DBMS application which includes a GUI front-end and report generation. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of MySQL is required for online sections.</td>
</tr>
<tr>
<td>DBA 224</td>
<td>SAS Database Programming II</td>
<td>2 2 3</td>
<td>This course is designed to enhance programming skills developed in DBA120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a SAS DBMS application which includes a GUI front-end and report generation. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SAS is required for online sections.</td>
</tr>
<tr>
<td>DBA 230</td>
<td>Database in Corporate Environments</td>
<td>3 0 3</td>
<td>This course covers database systems as they relate to the corporate environment. Topics include knowledge-based, decision-support, expert systems, database choices, data warehousing, and corporate structure. Upon completion, students should be able to analyze and recommend database systems needed by a corporation.</td>
</tr>
<tr>
<td>DBA 240</td>
<td>Database Analysis &amp; Design</td>
<td>3 0 3</td>
<td>This course is an exploration of the established and evolving methodologies for analysis, design, and development of a database system. Emphasis is placed on business data characteristics and usage, managing database projects, prototyping and modeling, and CASE tools. Upon completion, students should be able to analyze, develop, and validate a database implementation plan.</td>
</tr>
<tr>
<td>DBA 260</td>
<td>Oracle Database Administration</td>
<td>2 2 3</td>
<td>This course examines advanced Oracle database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Server is required for online sections.</td>
</tr>
<tr>
<td>DBA 261</td>
<td>SQL Server Database Administration</td>
<td>2 2 3</td>
<td>This course examines advanced SQL Server database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
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<tr>
<td>DBA 262</td>
<td>DB2 Database Administration</td>
<td>2 2 3</td>
<td>This course examines advanced DB2 database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of DB2 is required for online sections.</td>
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<td>Course</td>
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<tr>
<td><strong>DBA 263 MySQL Database Administration</strong></td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course examines advanced MySQL database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of MySQL is required for online sections.</td>
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<tr>
<td><strong>DBA 264 SAS Database Administration</strong></td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course examines advanced SAS database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SAS is required for online sections.</td>
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<td><strong>DBA 270 Oracle Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and (DBA 210 or DBA 260)</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers Oracle performance tuning concepts and techniques. Topics include database tuning and Oracle performance tools. Upon completion, students should be able to configure and diagnose an Oracle database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal Edition is required for online sections.</td>
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<tr>
<td><strong>DBA 271 SQL Server Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and DBA 261</td>
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<td>Corequisites: None</td>
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<td>This course covers SQL Server performance tuning concepts and techniques. Topics include database tuning and SQL Server performance tools. Upon completion, students should be able to configure and diagnose a SQL Server database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
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<td><strong>DBA 272 DB2 Performance Tuning</strong></td>
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<td>Corequisites: None</td>
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<td>This course covers DB2 performance tuning concepts and techniques. Topics include database tuning and DB2 performance tools. Upon completion, students should be able to configure and diagnose a DB2 database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of DB2 is required for online sections.</td>
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<tr>
<td><strong>DBA 273 MySQL Performance Tuning</strong></td>
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<tr>
<td>This course covers MySQL performance tuning concepts and techniques. Topics include database tuning and MySQL performance tools. Upon completion, students should be able to configure and diagnose a MySQL database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of MySQL is required for online sections.</td>
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<tr>
<td><strong>DBA 274 SAS Performance Tuning</strong></td>
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<td>Corequisites: None</td>
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<td>This course covers SAS performance tuning concepts and techniques. Topics include database tuning and SAS performance tools. Upon completion, students should be able to configure and diagnose a SAS database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SAS is required for online sections.</td>
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<td><strong>DBA 275 Oracle Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and (DBA 210 or DBA 260)</td>
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<td>Corequisites: None</td>
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<td>This course covers Oracle performance tuning concepts and techniques. Topics include database tuning and Oracle performance tools. Upon completion, students should be able to configure and diagnose an Oracle database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal Edition is required for online sections.</td>
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<td><strong>DBA 276 SQL Server Performance Tuning</strong></td>
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<td>Corequisites: None</td>
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<td><strong>DBA 277 DB2 Performance Tuning</strong></td>
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<td><strong>DBA 278 Oracle Performance Tuning</strong></td>
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<td><strong>DBA 279 SQL Server Performance Tuning</strong></td>
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<td>This course covers SQL Server performance tuning concepts and techniques. Topics include database tuning and SQL Server performance tools. Upon completion, students should be able to configure and diagnose a SQL Server database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
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<td><strong>DBA 280 DB2 Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and DBA 262</td>
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<tr>
<td>This course covers DB2 performance tuning concepts and techniques. Topics include database tuning and DB2 performance tools. Upon completion, students should be able to configure and diagnose a DB2 database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of DB2 is required for online sections.</td>
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<tr>
<td><strong>DBA 281 Oracle Performance Tuning</strong></td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers Oracle performance tuning concepts and techniques. Topics include database tuning and Oracle performance tools. Upon completion, students should be able to configure and diagnose an Oracle database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal Edition is required for online sections.</td>
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<tr>
<td><strong>DBA 282 SQL Server Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and DBA 261</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers SQL Server performance tuning concepts and techniques. Topics include database tuning and SQL Server performance tools. Upon completion, students should be able to configure and diagnose a SQL Server database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
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<tr>
<td><strong>DBA 283 DB2 Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and DBA 262</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers DB2 performance tuning concepts and techniques. Topics include database tuning and DB2 performance tools. Upon completion, students should be able to configure and diagnose a DB2 database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of DB2 is required for online sections.</td>
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<tr>
<td><strong>DBA 284 Oracle Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and (DBA 210 or DBA 260)</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers Oracle performance tuning concepts and techniques. Topics include database tuning and Oracle performance tools. Upon completion, students should be able to configure and diagnose an Oracle database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of Oracle Personal Edition is required for online sections.</td>
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<tr>
<td><strong>DBA 285 SQL Server Performance Tuning</strong></td>
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<td>Prerequisites: NOS 130 and DBA 261</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course covers SQL Server performance tuning concepts and techniques. Topics include database tuning and SQL Server performance tools. Upon completion, students should be able to configure and diagnose a SQL Server database for optimal performance. This course is taught online and web enhanced; online testing and Internet access will be utilized; installation of SQL Server is required for online sections.</td>
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**DDF - Design Drafting**

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<th>Course</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td><strong>DDF 221 Design Drafting Project</strong></td>
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<tr>
<td>Prerequisites: DFT 112</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course incorporates ideas from concept to final design. Topics include reverse engineering, design for manufacturability, and mock-up construction. Upon completion, students should be able to generate working drawings and models based on physical design parameters.</td>
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<tr>
<td><strong>DDF 252 Advanced Solid Modeling</strong></td>
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<td>Prerequisites: DFT 154</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course introduces advanced solid modeling and design software. Topics include design principles, design constraints, work planes, view generation, and model shading and rendering. Upon completion, students should be able to create advanced solid models.</td>
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### DDT - Developmental Disabilities

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DDT 110 Developmental Disabilities</td>
<td></td>
<td>This course identifies the characteristics and causes of various disabilities. Topics include history of service provision, human rights, legislation and litigation, advocacy, and accessing support services. Upon completion, students should be able to demonstrate an understanding of current and historical developmental disability definitions and support systems used throughout the life span.</td>
<td>3 0 0 3</td>
</tr>
<tr>
<td>DDT 120 Teaching Developmentally Disabled</td>
<td></td>
<td>This course covers teaching modalities which enhance learning among people with developmental disabilities. Topics include assessment, support strategies, writing behavioral strategies, teaching methods, and documentation. Upon completion, students should be able to demonstrate competence in individual program plan development and implementation. This course is a unique concentration requirement of the Developmental Disabilities concentration in the Human Services Technology program.</td>
<td>3 0 0 3</td>
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<tr>
<td>DDT 210 Developmental Disabilities / Health Issues</td>
<td></td>
<td>This course introduces the health and medical aspects of assisting people with developmental disabilities. Topics include universal precautions, medication, wellness, nutrition, human sexuality, and accessing medical services. Upon completion, students should be able to identify and implement strategies to promote wellness and manage chronic health conditions. Upon completion, students should be able to identify and implement strategies for the maintenance, prevention, and treatment of predominant health conditions affecting the developmentally disabled. This course is a unique concentration requirement of the Developmental Disabilities concentration in the Human Services Technology program.</td>
<td>3 0 0 3</td>
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</table>

### DDT 220 Program Planning Process |  | This course covers the individual program planning process used in services for people with developmental disabilities. Topics include basic components and benefits of the process, the effect of values on outcomes, and group problem-solving methods. Upon completion, students should be able to demonstrate an understanding of effective group process in program planning and the individual roles of team members. This course is a unique concentration requirement of the Developmental Disabilities concentration in the Human Services Technology program. | 3 0 0 3 |

### DDT 230 Supported Employment Methods |  | This course introduces the concept of supported employment and the action steps needed to assist individuals with disabilities to participate in the world of work. Topics include a history of vocational services, supported employment values, organizational marketing, consumer assessment, job development, employment selection, job site training and long-term supports. Upon completion, students will be able to develop a customer profile, marketing plan, and assist individuals with disabilities to obtain and maintain employment. This course is a unique concentration requirement of the Developmental Disabilities concentration in the Human Services Technology Program. | 3 0 0 3 |

###DEN - Dental Programs (Dental Assisting and Dental Hygiene)

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DEN 100 Basic Orofacial Anatomy</td>
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<td>This course provides a basic introduction to the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to demonstrate knowledge of normal structures and development and how they relate to the practice of dental assisting. This is a diploma-level course.</td>
<td>2 0 0 2</td>
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<tr>
<td>DEN 101 Preclinical Procedures</td>
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<td>This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to the profession of dental assisting, student performance of the functions and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures. This is a diploma-level course.</td>
<td>4 6 0 7</td>
</tr>
<tr>
<td>DEN 102 Dental Materials</td>
<td></td>
<td>This course provides instruction in identification, properties, evaluation of quality, principles, and procedures related to the manipulation and storage of operative and specialty dental materials. Emphasis is placed on the understanding and safe application of materials used in the dental office and laboratory. Upon completion, students should be able to identify formal and informal supports and strategies for community inclusion for adults aging with lifelong disabilities.</td>
<td>3 4 0 5</td>
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</table>
completion, students should be able to demonstrate proficiency in the laboratory and clinical application of routinely used dental materials. This is a diploma-level course.

DEN 103 Dental Sciences 2 0 0 2
Prerequisites: DEN 100
Corequisites: None
This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. This is a diploma-level course.

DEN 104 Dental Health Education 2 2 0 3
Prerequisites: DEN 101, DEN 111, DEN 100
Corequisites: None
This course covers the study of preventive dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventive procedures, and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings. This is a diploma-level course.

DEN 105 Practice Management 2 0 0 2
Prerequisites: DEN 101
Corequisites: None
This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. This is a diploma-level course.

DEN 106 Dental Clinical Practice I 1 0 12 5
Prerequisites: All required DEN courses
Corequisites: None
This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory and laboratory and clinical skills in a dental setting. This is a diploma-level course.

DEN 107 Dental Clinical Practice II 1 0 12 5
Prerequisites: DEN 106
Corequisites: None
This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. This is a diploma-level course.

DEN 110 Orofacial Anatomy 2 2 0 3
Prerequisites: Acceptance into Dental Hygiene Program
Corequisites: None
This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

DEN 111 Infection and Hazard Control 2 0 0 2
Prerequisites: Acceptance into Dental Hygiene or Dental Assisting program
Corequisites: None
This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws.

DEN 112 Dental Radiography 2 3 0 3
Prerequisites: Acceptance into Dental Hygiene or Dental Assisting program
Corequisites: DEN 100 or DEN 110 and DEN 111
This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.

DEN 120 Dental Hygiene Preclinical Lecture 2 0 0 2
Prerequisites: Acceptance into Dental Hygiene program
Corequisites: DEN 121
This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.

DEN 121 Dental Hygiene Preclinical Lab 0 6 0 2
Prerequisites: Acceptance into Dental Hygiene program
Corequisites: DEN 120
This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures.

DEN 123 Nutrition/Dental Health 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.
DEN 124 Periodontology  2 0 0 2
Prerequisites: DEN 110, BIO 175 or BIO 275
Corequisites: None
This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.

DEN 125 Dental Office Emergencies  0 2 0 1
Prerequisites: Acceptance in Dental Hygiene Program
Corequisites: None
This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, the student should be able to recognize, assess and manage various dental office emergencies and activate advanced medical support when indicated.

DEN 130 Dental Hygiene Theory I  2 0 0 2
Prerequisites: DEN 120
Corequisites: DEN 131
This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.

DEN 131 Dental Hygiene Clinic I  0 0 9 3
Prerequisites: DEN 110, DEN 111, DEN 112, DEN 120, DEN 121
Corequisites: DEN 130
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients’ needs and complete the necessary dental hygiene treatment.

DEN 140 Dental Hygiene Theory II  1 0 0 1
Prerequisites: DEN 130
Corequisites: DEN 141
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.

DEN 141 Dental Hygiene Clinic II  0 0 6 2
Prerequisites: DEN 131
Corequisites: DEN 140
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients’ needs and complete the necessary dental hygiene treatment.

DEN 220 Dental Hygiene Theory III  2 0 0 2
Prerequisites: DEN 140
Corequisites: DEN 221
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.

DEN 221 Dental Hygiene Clinic III  0 0 12 4
Prerequisites: DEN 141
Corequisites: DEN 220
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients’ needs and complete the necessary dental hygiene treatment.

DEN 222 General and Oral Pathology  2 0 0 2
Prerequisites: BIO 163 or BIO 165 or BIO 168, DEN 110, DEN 112
Corequisites: None
This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

DEN 223 Dental Pharmacology  2 0 0 2
Prerequisites: BIO 163 or BIO 165 or BIO 168, and DEN 125
Corequisites: None
This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient’s general health or drug usage may require modification of the treatment procedures.

DEN 224 Materials and Procedures  1 3 0 2
Prerequisites: DEN 111 and DEN 121
Corequisites: None
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventive materials, fabrication of casts and appliances, and chairside functions of the dental hygienist. Upon completion, students should be able to demonstrate proficiency in the laboratory and/or clinical application of routinely used dental materials and chairside functions.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Lecture</th>
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<td>Prerequisites:</td>
<td>DEN 231</td>
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<tr>
<td>This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.</td>
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<td>DEN 231</td>
<td>Dental Hygiene Clinic IV</td>
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<td>Prerequisites:</td>
<td>DEN 230</td>
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<tr>
<td>This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these Patient’s’ needs and complete the necessary dental hygiene treatment.</td>
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<td>DEN 232</td>
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<td>Prerequisites:</td>
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<td>Prerequisites:</td>
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<tr>
<td>This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, preventive dental care, dental health education, program planning, and financing and utilization of dental services. Upon completion, students should be able to assess, plan, implement, and evaluate a community dental health program.</td>
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<td>DEN 233</td>
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<td>Prerequisites:</td>
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<td>Prerequisites:</td>
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<tr>
<td>This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, résumé, interviews, and legal liabilities as health care professionals. Upon completion, students should be able to demonstrate the ability to practice dental hygiene within established ethical standards and state laws.</td>
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**DES - Interior Design**

See also ARC Architectural Technology for other descriptions.

**DES 115 Color Theory**

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<td>Corequisites:</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>This course introduces the element of color as a major design factor. Emphasis is placed on the physical, psychological, and other implications of color in design. Upon completion, students should be able to demonstrate knowledge of color and its effects on the human environment.</td>
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**DES 125 Graphic Presentation I**

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<td>Corequisites:</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>This course introduces graphic presentation techniques for communicating ideas. Topics include drawing, perspective drawing, and wet and dry media. Upon completion, students should be able to produce a pictorial presentation.</td>
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</table>

**DES 126 Graphic Presentation II**

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<th>Credits</th>
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<th>Credit</th>
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<tr>
<td>Corequisites:</td>
<td>DES 125</td>
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<tr>
<td>Prerequisites:</td>
<td>None</td>
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<tr>
<td>This course provides a more in-depth study of graphic techniques. Topics include extensive wet and dry media experience and advanced measured perspective techniques. Upon completion, students should be able to illustrate interiors and other elements.</td>
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**DES 135 Principles and Elements of Design I**

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<tr>
<td>Prerequisites:</td>
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<tr>
<td>This course introduces the basic concepts and terminology of design as they relate to the design profession. Topics include line, pattern, space, mass, shape, texture, color, unity, variety, rhythm, emphasis, balance, proportion, scale, and function. Upon completion, students should be able to demonstrate an understanding of the principles covered through hands-on application.</td>
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**DES 210 Business Practice / Interior Design**

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<tr>
<td>Corequisites:</td>
<td>DES 220</td>
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<tr>
<td>Prerequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces contemporary business practices for interior design. Topics include employment skills, business formations, professional associations, preparation of professional contracts and correspondence, and means of compensation. Upon completion, students should be able to describe the basic business formations and professional associations and compose effective letters and contracts.</td>
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**DES 220 Introduction to Interior Design**

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<th>Credits</th>
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<tr>
<td>Corequisites:</td>
<td>DES 125, DES 135, and ARC 111</td>
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<tr>
<td>Prerequisites:</td>
<td>None</td>
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<tr>
<td>This course covers the basic principles of design as they relate specifically to interior design, furniture arrangement, wall composition, color, furnishings, collages, and illustration. Emphasis is placed on spatial relationships, craftsmanship, and visual presentation techniques. Upon completion, students should be able to arrange furnishings in rooms for various purposes, select furnishings and colors, and illustrate ideas graphically.</td>
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**DES 225 Textiles / Fabrics**

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<tr>
<td>Corequisites:</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>This course includes the study of woven and non-woven fabrics for interiors. Topics include characteristics of fibers, yarns, weaving, felting, and knitting; processing of leather; and adornment and finishing of interior fabrics. Upon completion, students should be able to recognize and use correct terminology for upholstery, window treatments, and rugs/carpets with regard to flammability, performance, and durability.</td>
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**DES 230 Residential Design I**

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<tr>
<td>Corequisites:</td>
<td>ARC 111, DES 125, DES 220, DES 135, ARC 120</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>This course includes principles of interior design for various residential design solutions. Emphasis is placed on visual presentation and selection of appropriate styles to meet specifications. Upon completion, students should be able to complete scaled floor plans, elevations, specifications, color schemes and fabrics, and finishes and furniture selection.</td>
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<tr>
<td>DES 231</td>
<td>Residential Design II</td>
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<tr>
<td>Prerequisites:</td>
<td>DES 230, ARC 111, ARC 125, DES 135, ARC 120, DES 220, DES 230</td>
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<tr>
<td>Corequisites:</td>
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<tr>
<td>This course provides advanced projects with a client profile that utilizes the skills developed in DES 230. Emphasis is placed on a total concept and the presentation of appropriate and creative design solutions. Upon completion, students should be able to complete a detailed floor plan, space planning, furniture plan, specifications, program schedules, finishes, and detailed window treatments.</td>
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| DES 235 | Products | 2 | 2 | 3 |
| Prerequisites: | DES 135 or Department Permission |
| Corequisites: | None |
| This course provides an overview of interior finishing materials and the selection of quality upholstery and case goods. Topics include hard and resilient floor coverings; wall coverings and finishes; ceilings, moldings, and furniture construction techniques; and other interior components. Upon completion, students should be able to recognize and use correct terminology, select appropriate materials for interior surfaces, and choose furniture based on sound construction. |

| DES 240 | Non-Residential Design I | 1 | 6 | 3 |
| Prerequisites: | ARC 111, ARC 120, DES 125, DES 135, DES 220 |
| Corequisites: | None |
| This course introduces commercial/contract design including retail, office, institutional, restaurant, and hospitality design. Emphasis is placed on ADA requirements, building codes and standards, space planning, and selection of appropriate materials for non-residential interiors. Upon completion, students should be able to analyze and design introductory non-residential projects using graphic presentation concepts. |

| DES 241 | Non-Residential Design II | 1 | 6 | 3 |
| Prerequisites: | DES 240, ARC 111, ARC 120, DES 125, DES 135, DES 220, DES 240 |
| Corequisites: | None |
| This course provides an in-depth study of non-residential design exploring more comprehensive design solutions such as health care facilities, furniture gallery design, and large office complexes. Emphasis is placed on design of commercial interiors and suitability of materials to meet ADA requirements, codes, and standards. Upon completion, students should be able to design non-residential spaces meeting ADA requirements and select furniture, materials, fabrics, and accessories meeting codes and flammability standards. |

| DES 255 | History / Interior and Furnishings I | 3 | 0 | 3 |
| Prerequisites: | None |
| Corequisites: | None |
| This course covers interiors, exteriors, and furnishings from ancient Egypt through French Neo-Classicism. Emphasis is placed on vocabulary, chronology, and style recognition. Upon completion, students should be able to classify and date interior and exterior architecture and furnishings and be conversant with pertinent vocabulary. |

| DES 257 | History of American Homes | 3 | 0 | 3 |
| Prerequisites: | None |
| Corequisites: | None |
| This course provides an overview of American architectural styles from Medieval frame dwellings through the International style. Emphasis is placed on vocabulary, characteristics of architectural styles, and chronology as well as research of a historic home. Upon completion, students should be able to identify and use correct terminology regarding the history of American homes. |

| DES 265 | Lighting/Interior Design | 2 | 0 | 2 |
| Prerequisites: | None |
| Corequisites: | None |
| This course introduces theory and contemporary concepts in lighting. Topics include light levels, light quality, lamps and fixtures, and their use in interior design. Upon completion, students should be able to determine light levels and requirements based on national standards and select luminaries for specific light qualities. |

| DES 275 | Furniture Design and Construction | 2 | 2 | 3 |
| Prerequisites: | ARC 111, ARC 120, DES 125, DES 220, and DES 135 |
| Corequisites: | None |
| This course introduces contemporary furniture design and construction techniques used in custom and handmade furniture building. Topics include design and manufacturing processes and materials selection for handmade and production, case goods, and upholstery manufacturing. Upon completion, students should be able to design and describe manufacturing processes used in both case goods and upholstered furniture manufacturing. |

| DES 280 | Codes and Standards / Interior Description | 3 | 0 | 3 |
| Prerequisites: | ARC 120 |
| Corequisites: | None |
| This course introduces institutional and residential building codes as they relate to interior design. Topics include state and federal codes and standards related to physically disadvantaged access, fire codes, space allocation codes, and bathroom facility codes. Upon completion, students should be able to research and interpret state and federal building codes. |

| DFT - Drafting |

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<th>Course Code</th>
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<td>DFT 112</td>
<td>Technical Drafting II</td>
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<td>Prerequisites:</td>
<td>DFT 111</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corequisites:</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This course provides for advanced drafting practices and procedures. Topics include detailed working drawings, hardware, fits and tolerances, assembly and sub-assembly, geometric dimensioning and tolerancing, intersections, and developments. Upon completion, students should be able to produce detailed working drawings.</td>
<td></td>
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</tr>
</tbody>
</table>

| DFT 121 | Introduction to Geometric Dimensioning and Tolerancing | 1 | 2 | 2 |
| Prerequisites: | EGR 120 |
| Corequisites: | None |
| This course introduces basic geometric dimensioning and tolerancing principles. Topics include symbols, annotation, theory, and applications. Upon completion, students should be able to interpret and apply basic geometric dimensioning and tolerancing principles to drawings. |
### DRA - Drama/Theatre

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRA 111</td>
<td>Theatre Appreciation</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>DRA 120</td>
<td>Voice for Performance</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>DRA 130</td>
<td>Acting I</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>DRA 132</td>
<td>Stage Movement</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>DRA 131</td>
<td>Acting II</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>DRA 135</td>
<td>Acting for the Camera I</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>DRA 136</td>
<td>Acting for the Camera II</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>DRA 140</td>
<td>Stagecraft I</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>DRA 141</td>
<td>Stagecraft II</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>DRA 142</td>
<td>Costuming</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Corequisites and Prerequisites:**

- **DRA 111 Theatre Appreciation:** Corequisites: None
- **DRA 120 Voice for Performance:** Corequisites: None
- **DRA 130 Acting I:** Corequisites: None
- **DRA 132 Stage Movement:** Corequisites: DRA 111
- **DRA 131 Acting II:** Corequisites: DRA 130 or Division Consent
- **DRA 135 Acting for the Camera I:** Prerequisites: None
- **DRA 136 Acting for the Camera II:** Prerequisites: DRA 135 or Division Consent
- **DRA 140 Stagecraft I:** Corequisites: None
- **DRA 141 Stagecraft II:** Corequisites: None
- **DRA 142 Costuming:** Corequisites: None

This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Corequisites</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRA 145</td>
<td>Stage Make-up</td>
<td>1 2 2</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 170</td>
<td>Play Production I</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 171</td>
<td>Play Production II</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 175</td>
<td>Teleplay Production I</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 176</td>
<td>Teleplay Production II</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 241</td>
<td>Lighting Design</td>
<td>2 2 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 270</td>
<td>Play Production III</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 271</td>
<td>Play Production IV</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>DRA 275</td>
<td>Teleplay Production III</td>
<td>0 9 3</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

This course covers the research, design, selection of materials, and application of stage make-up prosthetics, wigs, and hairpieces. Emphasis placed on development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up, prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

This course provides an applied laboratory study of the processes involved in the production of a sit-com television program. Emphasis is placed on the fundamental practices, principles, and techniques associated with producing sit-com television programming. Upon completion, students should be able to participate in an assigned position with a college sit-com television production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

This course includes an analysis of drafting techniques, scenery design problems, design practice, model and rendering preparation, and working drawings. Topics include discussion of building materials, construction techniques, painting and finishing techniques, and the creation of working drawings and construction documentation. Upon completion, students should be able to demonstrate competence in design, drafting, construction, and problem solving. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college drama television production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Emphasis is placed on equipment, technology, and the development of a light plot. Upon completion, students should be able to understand the process of creating a light plot and solving the production problems relative to lighting. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

This course covers the analysis, research, design, and problem solving related to scene design. Emphasis is placed on director/designer communication, concepting, researching, rendering, and modeling of designs. Upon completion, students should be able to demonstrate skills in communication, design process, rendering, and modeling. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

This course includes an analysis of drafting techniques, scenery design problems, design practice, model and rendering preparation, and working drawings. Topics include discussion of building materials, construction techniques, painting and finishing techniques, and the creation of working drawings and construction documentation. Upon completion, students should be able to demonstrate competence in design, drafting, construction, and problem solving. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
participate in an assigned position with a college action television production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 276 Teleplay Production IV  0  9  3
Prerequisites: DRA 275
Corequisites: None
This course provides an applied laboratory study of the processes involved in production of a variety television program. Emphasis is placed on the fundamental practices, principles, and techniques associated with producing variety television programming. Upon completion, students should be able to participate in an assigned position with a college variety television production. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ECM - Electronic Commerce

Lecture Lab Credit

ECM 210 Intro to Electronic Commerce  2  2  3
Prerequisites: None
Corequisites: None
This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, securing transactions, use and verification of credit cards, publishing of catalogs, and site administration. Upon completion, students should be able to setup a working Electronic Commerce Internet web site. This course is a unique concentration requirement of the E-Commerce concentration in the Business Administration program.

ECO - Economics

Lecture Lab Credit

ECO 151 Survey of Economics  3  0  3
Prerequisites: MAT 070 or higher level math with a grade of “C” or better or appropriate placement test score
Corequisites: None
This course introduces basic microeconomic and macroeconomic concepts. Topics include supply and demand, optimizing economic behavior, prices and wages, money, interest rates, banking system, unemployment, inflation, taxes, government spending, and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors. This course is intended for those students who do not plan to take ECO 251 or ECO 252, in addition, ECO 151 can not be substituted for ECO 251 or ECO 252. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ECO 251 Principles of Microeconomics  3  0  3
Prerequisites: MAT 070 or Placement Test score
Corequisites: None
This course introduces economic analysis of choices made by individuals, businesses, and industries in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives. This course is intended for those who have not received credit for ECO 151. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. Students should complete any Advancement Studies courses prior to taking this class.

ECO 252 Principles of Macroeconomics  3  0  3
Prerequisites: MAT 070 or Placement Test score
Corequisites: None
This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. This course is intended for those who have not received credit for ECO 151. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. Students should complete any Advancement Studies courses prior to taking this class.

EDU - Early Childhood Education

Lecture Lab Credit

EDU 119 Introduction to Early Childhood Education  4  0  4
Prerequisites: None
Corequisites: None
This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism and planning developmentally appropriate programs for children. Topics include historical foundations, program types, career options, professionalism, and creating inclusive environments and curriculum that are responsive to the needs of children and families. Upon completion, students should be able design career plans and develop appropriate schedules, environments and activity plans while incorporating adaptations for children with exceptionalities.

EDU 126 Early Childhood Seminar I  2  0  2
Prerequisites: EDU 119 or EDU 111 and EDU 112; or EDU 111 and EDU 113; EDU 144 or EDU 145; EDU 151/151a or EDU 251/251a or EDU 280/280a; EDU 146
Corequisites: COE 111, COE 112, COE 113, or COE 114
This course will introduce the students to the early childhood classroom setting and the roles that professionals play in that setting. Emphasis is placed on observations of children/teachers in the classroom, and the use of assessment tools to enhance planning and implementation of curricular experiences. Upon completion, students should be able to use various child assessment tools, determine developmental characteristics of children, and plan developmentally appropriate curricula.

EDU 131 Child, Family and Community  3  0  3
Prerequisites: None
Corequisites: None
This course covers the development of partnerships between families, inclusive programs for children/schools that serve young children with and without disabilities, and the community. Emphasis is placed on requisite skills and benefits for
EDU 144 Child Development I 3 0 3
Prerequisites: None
Corequisites: None
This course covers the theories of child development, developmental sequences, and factors that influence children’s development, from conception through pre-school for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development and the multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

EDU 145 Child Development II 3 0 3
Prerequisites: None
Corequisites: None
This course covers theories of child development, developmental sequences, and factors that influence children’s development, from pre-school through middle childhood for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

EDU 146 Child Guidance 3 0 3
Prerequisites: None
Corequisites: None
This course introduces practical principles and techniques for providing developmentally appropriate guidance for all children with and without disabilities, including those at risk. Emphasis is placed on encouraging self-esteem, cultural awareness, effective communication skills, direct/indirect techniques/strategies and observation to understand the underlying causes of behavior. Upon completion, students should be able to demonstrate appropriate interactions with children and families and promote conflict resolution, self-control, self-motivation, and self-esteem in children.

EDU 151 Creative Activities 3 0 3
Prerequisites: None
Corequisites: EDU151A
This course covers planning, creation and adaptation of developmentally supportive learning environments with attention to curriculum, interactions, teaching practices and learning materials. Emphasis is placed on creating and adapting integrated, meaningful, challenging and engaging developmentally supportive learning experiences in art, music, movement and physical skills, and dramatics. Upon completion, students should be able to create, manage, adapt and evaluate developmentally supportive learning materials, experiences and environments.

EDU 153 Health, Safety and Nutrition 3 0 3
Prerequisites: None
Corequisites: None
This course focuses on promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognition and reporting of abuse and neglect and state regulations. Upon completion, students should be able to demonstrate knowledge of health, safety, and nutritional needs, implement safe learning environments, and adhere to state regulations.

EDU 188 Issues in Early Child Education 2 0 2
Prerequisites: None
Corequisites: None
This course covers topics and issues in early childhood education. Emphasis is placed on current advocacy issues, emerging technology, professional growth experiences, and other related topics. Upon completion, students should be able to list, discuss, and explain current topics and issues in early childhood education.

EDU 221 Children with Exceptionalities 3 0 3
Prerequisites: EDU 144 and EDU 145 or PSY 244 and PSY 245
Corequisites: None
This course, based on the foundation of typical development, introduces working with children with exceptionalities. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the learning environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, collaborate with families and professionals to plan, implement, and evaluate inclusion strategies. This course is also available through the Virtual Learning Community (VLC).

EDU 226 Early Childhood Seminar II 2 0 2
Prerequisites: COE 111 EDU 126/197; All major and related course requirements (EDU prefix) with the exception of EDU 153 and EDU 271 which may be taken concurrently with COE 121N and EDU 226
Corequisites: COE 121, COE 122, COE 123, or COE 124
This course is designed to expand students’ knowledge of the early childhood classroom and the roles professional play in that setting. Emphasis is placed on creating child portfolios that enhance planning and implementation of curriculum for all children and the development of individual professional portfolios. Upon completion, students should be able to develop child portfolios and create individual professional development plans.

EDU 234 Infants, Toddlers and Twos 3 0 3
Prerequisites: None
Corequisites: None
This course covers the skills needed to effectively implement group care for infants, toddlers, and two-year olds. Emphasis is placed on child development and developmentally appropriate
EDU 235 School-Age Dev & Program | 2 0 2
---|---
Prerequisites: None
Corequisites: None
This course presents developmentally appropriate practices in group care for school-age children. Topics include principles of development, environmental planning, and positive guidance techniques. Upon completion, students should be able to discuss developmental principles for children five to twelve years of age and plan and implement age-appropriate activities.

EDU 241 Adult-Child Relations | 2 0 2
---|---
Prerequisites: None
Corequisites: None
This course covers self-concept and effective and active listening skills in positive one-to-one interactions with individuals and groups of children. Emphasis is placed on self-concept development and effective communication techniques used with children. Upon completion, students should be able to identify principles underlying self-concept and demonstrate effective listening and communication skills used by adults with children.

EDU 251 Exploration Activities | 3 0 3
---|---
Prerequisites: None
Corequisites: EDU 251A
This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children.

EDU 251A Exploration Act Lab | 0 2 1
---|---
Prerequisites: None
Corequisites: EDU 251
This course provides a laboratory component to complement EDU 251. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate science, math, and social studies activities for children.

EDU 254 Music & Move for Children | 1 2 2
---|---
Prerequisites: None
Corequisites: None
This course covers the use of music and creative movement for children. Topics include a general survey of the basic elements of music and planning, designing, and implementing music and movement experiences for creative learning. Upon completion, students should be able to use voice and various musical instruments to provide musical and movement activities for children.

EDU 259 Curriculum Planning | 3 0 3
---|---
Prerequisites: EDU 111, EDU 112, or EDU 119; EDU 126/197 and COE 111n
Corequisites: None
This course covers early childhood curriculum planning. Topics include philosophy, curriculum, indoor and outdoor environmental design, scheduling, observation and assessment, and instructional planning and evaluation. Upon completion, students should be able to assess children and curriculum; plan for daily, weekly, and long-range instruction; and design environments with appropriate equipment and supplies.

EDU 261 Early Childhood Administration I | 3 0 3
Prerequisites: None
Corequisites: None
This course covers the policies, procedures, and responsibilities for the management of early childhood education programs. Topics include implementation of goals, principles of supervision, budgeting and financial management, and meeting the standards for a NC Child Day Care license. Upon completion, students should be able to develop program goals, explain licensing standards, determine budgeting needs, and describe effective methods of personnel supervision.

EDU 262 Early Childhood Administration II | 3 0 3
Prerequisites: EDU 261
Corequisites: None
This course provides a foundation for budgetary, financial, and personnel management of the child care center. Topics include budgeting, financial management, marketing, hiring, supervision, and professional development of a child care center. Upon completion, students should be able to formulate marketing, financial management, and fund development plans and develop personnel policies, including supervision and staff development plans.

EDU 263 Dev School-Age Program | 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the methods and procedures for operating a school-age program in either the public or proprietary setting. Emphasis is placed on construction and organizing the physical environment as well as planning and developing a school-age program. Upon completion, students should be able to plan and develop a quality school-age program.

EDU 271 Educational Technology | 2 2 3
Prerequisites: EDU 126/197 and COE 111n
Corequisites: None
This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments. This course is for the Early Childhood program only and not for the Lateral Entry program.

EDU 280 Language and Literacy Experience | 3 0 3
Prerequisites: None
Corequisites: EDU 280a
This course explores the continuum of children’s communication development, including verbal and written language acquisition and other forms of communication. Topics include selection of literature and other media, the integration of literacy concepts throughout the classroom environment, inclusive practices and appropriate assessments. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate literacy experiences. This course is also available through the Virtual Learning Community (VLC).
EDU 288A Literacy and Experiences Lab 0 2 1  
Prerequisites: None  
Corequisites: EDU 280  
This course provides a laboratory component to complement EDU 280. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate early literacy experiences.

EDU 288 Advanced Issues in Early Child Education 2 0 2  
Prerequisites: None  
Corequisites: None  
This course covers advanced topics and issues in early childhood. Emphasis is placed on current advocacy issues, emerging technology, professional growth experiences, and other related topics. Upon completion, students should be able to list, discuss, and explain advanced current topics and issues in early childhood education.

**ELC - Electricity**

See also ELN Electronics and CET Computer Engineering Technology for additional courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC 110 Telecom Circuits/Devices</td>
<td>3 3 4</td>
<td></td>
<td></td>
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</tbody>
</table>
| Prerequisites: None  
Corequisites: None  
This course introduces the basic AC/DC components, semiconductor-based devices, and other related components as applied to telecom circuits. Emphasis is placed on analysis, applications, and testing of these circuits. Upon completion, students will be able to construct, verify, and test these circuits. |
| ELC 111 Introduction to Electricity | 2 2 3 |
| Prerequisites: None  
Corequisites: None  
This course introduces the fundamental concepts of electricity and test equipment to non-electrical/electronic majors. Topics include basic DC and AC principles (voltage, resistance, current, impedance); components (resistors, inductors, and capacitors); power; and operation of test equipment. Upon completion, students should be able to construct and analyze simple DC and AC circuits using test equipment. This course is for students pursuing the Mechanical Engineering Technology program (A40320) and the Introduction to Electromechanical Systems certificate (C40160). |
| ELC 112 DC/AC Electricity | 3 6 5 |
| Prerequisites:  
Corequisites: None  
This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment, and other related topics. Upon completion, students should be able to construct, verify, and analyze simple DC/AC circuits. |
| ELC 113 Basic Wiring I | 2 6 4 |
| Prerequisites:  
Corequisites: None  
This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout, and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations. |
| ELC 114 Basic Wiring II | 2 6 4 |
| Prerequisites: ELC 113  
Corequisites: None  
This course provides additional instruction in the application of electrical tools, materials, and test equipment associated with electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion, students should be able to properly install equipment and conduit associated with electrical installations. |
| ELC 115 Industrial Wiring | 2 6 4 |
| Prerequisites: ELC 113  
Corequisites: None  
This course introduces the care/usage of tools and materials used in electrical installations. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment. |

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC 117 Motors and Controls</td>
<td>2 6 4</td>
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</tbody>
</table>
| Prerequisites: ELC 112 or ELC 131  
Corequisites: None  
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, limit devices, controllers, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits. |
| ELC 118 National Electrical Code | 1 2 2 |
| Prerequisites:  
Corequisites: None  
This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC. |
| ELC 119 NEC Calculations | 1 2 2 |
| Prerequisites:  
Corequisites: None  
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code. **Corequisites: None** |

**EDU 283 College-Level Credit Course Descriptions**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Units</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC 121</td>
<td>Electrical Estimating</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: ELC 113</td>
<td></td>
<td></td>
<td>Corequisites: None</td>
</tr>
<tr>
<td></td>
<td>This course covers the principles involved in</td>
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<td>estimating electrical projects. Topics include take-offs of materials</td>
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<td></td>
<td></td>
<td>and equipment, labor, overhead, and profit. Upon completion, students</td>
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<td></td>
<td></td>
<td>should be able to estimate simple electrical projects.</td>
</tr>
<tr>
<td>ELC 125</td>
<td>Diagrams and Schematics</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: Corequisites: None</td>
<td></td>
<td></td>
<td>This course covers the interpretation of electrical diagrams, schematics,</td>
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<td>and drawings common to electrical applications. Emphasis is placed on</td>
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<td></td>
<td></td>
<td>reading and interpreting electrical diagrams and schematics. Upon</td>
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<td>completion, students should be able to read and interpret electrical</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diagrams and schematics.</td>
</tr>
<tr>
<td>ELC 126</td>
<td>Electrical Computations</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisites: Corequisites: None</td>
<td></td>
<td></td>
<td>This course introduces the fundamental applications of mathematics which</td>
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<td>are used by an electrical/electronics technician. Topics include whole</td>
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<td>numbers, fractions, decimals, powers, roots, simple electrical formulas,</td>
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<td>and usage of a scientific calculator. Upon completion, students should</td>
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<td>be able to solve simple electrical mathematical problems.</td>
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<tr>
<td>ELC 127</td>
<td>Software for Technicians</td>
<td>1</td>
<td>2</td>
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<td></td>
<td>Prerequisites: Corequisites: None</td>
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<td>This course introduces computer software which can be used to solve</td>
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<td>electrical/electronics problems. Topics include electrical/electronics</td>
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<td>calculations, applications, and controls. Upon completion, students</td>
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<td>should be able to utilize a personal computer for electrical/electronics-</td>
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<td></td>
<td></td>
<td>related applications.</td>
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<tr>
<td>ELC 128</td>
<td>Introduction to Programmable Logic Controller</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td>(PLC)</td>
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<td>Prerequisites: Corequisites: None</td>
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<td></td>
<td>This course introduces the programmable logic controller (PLC) and its</td>
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<td>associated applications. Topics include ladder logic diagrams, input/output</td>
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<td>modules, power supplies, surge protection, selection/installation of</td>
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<td>controllers, and interfacing of controllers with equipment. Upon</td>
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<td>completion, students should be able to install PLCs and create simple</td>
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<td>programs.</td>
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<tr>
<td>ELC 131</td>
<td>DC/AC Circuit Analysis</td>
<td>4</td>
<td>3</td>
<td>5</td>
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<tr>
<td></td>
<td>Prerequisites: Placement Testing</td>
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<td></td>
<td>Corequisites: MAT 121 or MAT 171</td>
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<td></td>
<td>This course introduces DC and AC electricity</td>
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<td>with an emphasis on circuit analysis, measurements, and operation of</td>
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<td>test equipment. Topics include DC and AC principles, circuit analysis</td>
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<td>laws and theorems, components, test equipment operation, circuit simulation</td>
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<td>and other related topics. Upon completion, students should be able to</td>
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<td>interpret circuit schematics; design, construct, verify, and analyze DC/</td>
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<td>AC circuits; and properly use test equipment.</td>
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<tr>
<td>ELC 132</td>
<td>Electrical Drawings</td>
<td>1</td>
<td>3</td>
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<td></td>
<td>Prerequisites: Corequisites: None</td>
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<td>This course introduces the technical documentation that is typically</td>
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<td>found or used in the industrial environment. Topics include interpretation</td>
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<td>of service manuals, freehand sketching of lines, orthographic views and</td>
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<td>dimensions, and blueprint reading. Upon completion, students should be</td>
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<td>able to interpret technical documents and blueprints and use basic</td>
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<td>drafting skills to prepare usable field drawings.</td>
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<tr>
<td>ELC 133</td>
<td>Advanced Circuit Analysis</td>
<td>2</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisites: ELC 131</td>
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<td></td>
<td>Corequisites: None</td>
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<tr>
<td></td>
<td>This course covers additional concepts of DC/AC</td>
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<td>electricity, the use of test equipment, and measurement techniques for</td>
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<td>electrical/electronics majors. Topics include the application of network</td>
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<td>theorems such as delta/wye transformations, Superposition Theorem, and</td>
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<td>other advanced circuit analysis principles. Upon completion, students</td>
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<td>should be able to construct and analyze DC/AC circuits used advanced</td>
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<td>circuit analysis theorems, circuit simulators, and test equipment.</td>
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<tr>
<td>ELC 135</td>
<td>Electrical Machines I</td>
<td>2</td>
<td>2</td>
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<td></td>
<td>Prerequisites: ELC 131 or ELC 139</td>
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<td>Corequisites: None</td>
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<td></td>
<td>This course covers DC/AC motor fundamentals</td>
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<td>including applications and control. Topics include control devices,</td>
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<td></td>
<td>synchronous and induction single and polyphase AC motors, DC motors,</td>
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<td>stepper, and special purpose motors. Upon completion, students should</td>
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<td>be able to perform regulation and efficiency calculations for DC/AC</td>
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<td>single- and three-phase transformer and generator circuits. Emphasis will</td>
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<td>be placed upon the experimental measurement of machine operational data</td>
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<td>and its use in performance evaluation.</td>
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<td>ELC 136</td>
<td>Electrical Machines II</td>
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<td>Prerequisites: ELC 135</td>
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<td>Corequisites: None</td>
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<td>This course covers DC/AC motor fundamentals</td>
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<td>including applications and control. Topics include control devices,</td>
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<td>synchronous and induction single and polyphase AC motors, DC motors,</td>
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<td>stepper, and special purpose motors. Upon completion, students should</td>
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<td>be able to perform regulation and efficiency calculations and apply motor</td>
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<td>theory to practical control applications. Laboratory experiments will be</td>
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<td>used to relate calculated machine data to actual performance.</td>
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<td>ELC 138</td>
<td>DC Circuit Analysis</td>
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<td>Prerequisites: ELC 138</td>
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<td>Corequisites: Mat 121</td>
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<td></td>
<td>This course introduces DC electricity with an</td>
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<td>emphasis on circuit analysis, measurements, and operation of test</td>
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<td>equipment. Topics include DC principles, circuit analysis laws and theo-</td>
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<td>rems, components, test equipment operation, circuit simulation, and other</td>
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<td>related topics. Upon completion, students should be able to interpret</td>
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<td>circuit schematics; design, construct, and analyze DC circuits; and</td>
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<td>properly use test equipment.</td>
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<td>ELC 139</td>
<td>AC Circuit Analysis</td>
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<td>Prerequisites: ELC 138</td>
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<td>Corequisites: None</td>
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<td>This course introduces AC electricity with an</td>
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<td>emphasis on circuit analysis, measurements, and operation of test</td>
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<td>equipment. Topics include AC voltages, circuit analysis laws and theo-</td>
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<td>rems, reactive components and circuits, transformers, test equipment</td>
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<td>operation, circuit simulation, and other related topics. Upon completion,</td>
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<td>students should be able to interpret AC circuit schematics; analyze and</td>
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<td>troubleshoot AC circuits; and properly use test equipment.</td>
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<td>Course Code</td>
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<tr>
<td>ELN 131E</td>
<td>Electron Devices</td>
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<td>ELN 131</td>
<td>Electron Devices</td>
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<tr>
<td>ELN 132</td>
<td>Linear Integrated Circuits Applications</td>
<td>3</td>
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<td>ELN 133</td>
<td>Digital Electronics</td>
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<td>ELC 213</td>
<td>Instrumentation</td>
<td>3</td>
<td>2</td>
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<td>ELC 215</td>
<td>Electrical Maintenance</td>
<td>2</td>
<td>3</td>
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<tr>
<td>ELC 228</td>
<td>Programmable Logic Controllers (PLC) Applications</td>
<td>2</td>
<td>6</td>
<td>4</td>
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<tr>
<td>ELC 229</td>
<td>Applications Project</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<tr>
<td>ELC 231</td>
<td>Electric Power Systems</td>
<td>3</td>
<td>2</td>
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<tr>
<td>ELC 233</td>
<td>Energy Management</td>
<td>2</td>
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<tr>
<td>ELC 234E</td>
<td>Electrical System Design</td>
<td>2</td>
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</table>
| ELC 235    | Electricity and CET Computer Engineering Technology for additional courses.

See also ELC Electricity and CET Computer Engineering Technology for additional courses.
related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

**ELN 133E Digital Electronics** 3 3 4
- **Prerequisites:** ELC 131 or ELC 138
- **Corequisites:** None
  This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AC/DC conversion, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment. ELN 133E is more in depth than ELN 133 and is meant for Computer/Electrical/Electronics Engineering Technology students.

**ELN 150 CAD for Electronics** 1 3 2
- **Prerequisites:** CIS 110 or CIS 111
- **Corequisites:** ELN 131E
  This course introduces computer-aided drafting (CAD) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; and specialized electronic drafting practices and components such as resistors, capacitors, and ICs. Upon completion, students should be able to prepare electronic drawings with CAD software.

**ELN 193 Selected Topics in Electronics Engineering Technology** 1-3 0-6 3
- **Prerequisites:** Enrollment in the program
- **Corequisites:** None
  This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**ELN 229 Industrial Electronics** 2 4 4
- **Prerequisites:** ELC 112, ELC 131, or ELC 140
- **Corequisites:** None
  This course covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices (filters, rectifiers, FET, SCR, Diac, Triac, Op-amps, etc.). Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit.

**ELN 232 Introduction to Microprocessors** 3 3 4
- **Prerequisites:** ELN 133E
- **Corequisites:** None
  This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

**ELN 233 Microprocessor Systems** 3 3 4
- **Prerequisites:** ELN 232
- **Corequisites:** None
  This course covers the application and design of microprocessor control systems. Topics include control and interfacing of systems using AD/DA, serial/parallel I/O, communication protocols, and other related applications. Upon completion, students should be able to design, construct, program, verify, analyze, and troubleshoot fundamental microprocessor interface and control circuits using related equipment.

**ELN 234 Communication Systems** 3 3 4
- **Prerequisites:** ELN 132 or ELN 140
- **Corequisites:** None
  This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

**ELN 235 Data Communication System** 3 3 4
- **Prerequisites:** ELN 133
- **Corequisites:** None
  This course covers data communication systems and the transmission of digital information from source to destination. Topics include data transmission systems, serial interfaces and modems, protocols, networks, and other related topics. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems.

**ELN 236 Fiber Optics and Lasers** 3 2 4
- **Prerequisites:** ELN 234
- **Corequisites:** None
  This course introduces the fundamentals of fiber optics and lasers. Topics include the transmission of light; characteristics of fiber optic and lasers and their systems; fiber optic production; types of lasers; and laser safety. Upon completion, students should be able to understand fiber optic communications and basic laser fundamentals.

**ELN 247 Electronic Application Project** 1 3 2
- **Prerequisites:** ELN 131E
- **Corequisites:** None
  This course provides a structured approach to an application-oriented electronics project. Emphasis is placed on selecting, planning, implementing, testing, and presenting an application-oriented project. Upon completion, students should be able to present and demonstrate an electronics application-oriented project. Project analysis, measurement, and performance evaluation will serve as the basis for a project final report.

**ELN 260 Program Logic Controllers** 3 3 4
- **Prerequisites:** ELN 133 or ELN 133E
- **Corequisites:** None
  This course provides a detailed study of PLC applications, with a focus on design of industrial control circuits using the PLC. Topics include PLC components, memory organization, math instructions, programming documentation, input/output devices, and applying PLCs in the design of industrial control systems. Upon completion, students should be able to design and program a PLC system to perform a wide variety of industrial control functions.

**ELN 275 Troubleshooting** 1 2 2
- **Prerequisites:** ELN 133E and ELN 132
- **Corequisites:** None
  This course covers techniques of analyzing and repairing failures in electronic equipment. Topics include safety, signal tracing, use of service manuals, and specific troubleshooting methods for analog, digital, and other electronics-based circuits and systems. Upon completion, students should be able to logically diagnose and isolate faults and perform necessary repairs to meet manufacturers’ specifications. Students will utilize the
relationship of system hardware failures to component failures to establish diagnose-and-repair processes.

**EGR - Engineering**

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<th>Course Code</th>
<th>Course Name</th>
<th>Lecture</th>
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<tbody>
<tr>
<td>EGR 115</td>
<td>Intro to Technology</td>
<td>2</td>
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<tr>
<td>Prerequisites: None</td>
<td>Corequisites: MAT 121</td>
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<td>This course introduces the basic skills and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, calculator applications, professional ethics, safety practices, and other related topics. Upon completion, students should be able to understand the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator.</td>
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<td>EGR 115A</td>
<td>Intro to Technology Lab</td>
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<td>3</td>
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<td>Prerequisites: None</td>
<td>Corequisites: EGR 115</td>
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<td>This course provides a laboratory setting for EGR 115. Emphasis is placed on developing skills in dimensional analysis, measurement systems, engineering graphics, and calculator applications. Upon completion, students should be able to apply the laboratory experience to the concepts presented in EGR 115.</td>
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<tbody>
<tr>
<td>EGR 120</td>
<td>Engineering and Design Graphics</td>
<td>2</td>
<td>2</td>
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<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<td>This course introduces the graphical tools used for engineering and design communications. Emphasis is placed upon selecting the appropriate methods and tools and conveying ideas using sketches, orthographic views and projections, and computer graphics applications. Upon completion, students should be able to communicate essential features of two-dimensional and three-dimensional objects using the proper tools and methods.</td>
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<tr>
<td>EGR 125</td>
<td>Application Software for Technicians</td>
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<td>2</td>
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<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<td>This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics, and Internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the results in text and graphical formats.</td>
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<tbody>
<tr>
<td>EGR 150</td>
<td>Intro to Engineering</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications. Upon completion, students should be able to understand the engineering process, the engineering profession, and utilize college resources to meet their educational goals. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>EGR 210</td>
<td>Intro to Elec/Com Eng Lab</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Prerequisites: MAT 271 and PHY 251</td>
<td>Corequisites: None</td>
<td></td>
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</tr>
<tr>
<td>This course provides an overview of electrical and computer engineering, through a lecture and laboratory setting. Topics include fundamental concepts, electronic circuits, digital circuits, communication systems, and signal processing. Upon completion, students should be able to discuss the wide range of fields available to the electrical or computer engineer. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<tbody>
<tr>
<td>EGR 212</td>
<td>Logic System Design I</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: MAT 271 and PHY 251</td>
<td>Corequisites: None</td>
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</tr>
<tr>
<td>This course provides an introduction to digital circuits and analysis. Topics include Boolean Algebra; mixed logic; design of combinational circuits; introduction to sequential systems; and MSI building blocks. Upon completion, students should be able to analyze and design digital circuits and systems. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>EGR 215</td>
<td>Network Theory I</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: PHY 251 and MAT 272</td>
<td>Corequisites: PHY 252 and MAT 273</td>
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<tr>
<td>This course provides an introduction to Kirchoff's laws and terminal equations, circuit analysis techniques and network theorems, transient and natural response, and state variable analysis. Topics include Kirchoff's laws, Ohm's law, circuit analysis techniques, Network theorems, singularity functions, transient and natural responses, power, and state variable analysis. Upon completion, students should be able to analyze electric circuits involving capacitors, inductors, and resistors to determine required parameters. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<tr>
<th>Course Code</th>
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<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>EGR 216</td>
<td>Logic and Network Lab</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Prerequisites: PHY 251 and MAT 272</td>
<td>Corequisites: EGR 215 and EGR 212</td>
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<tr>
<td>This course provides laboratory experiments in network measurements and logic design and laboratory equipment and techniques. Topics include network measurement and applications, experimental logic design and introduction to laboratory equipment and techniques. Upon completion, students should be able to complete network measurement logic design and be able to use laboratory equipment with proper techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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<th>Course Code</th>
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<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>EGR 218</td>
<td>Network Theory II</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: EGR 215</td>
<td>Corequisites: None</td>
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<tr>
<td>This course provides an introduction to sinusoidal functions and signals; power and energy; and mathematical series. Topics include sinusoidal steady state analysis; frequency domain analysis; Fourier and Laplace transforms; and two port networks. Upon completion, students should be able to analyze circuits involving sinusoidal functions and using mathematical techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
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</table>
### EGR 219 Instru & Network Lab 0 3 1
Prerequisites: EGR 216
Corequisites: EGR 218
This course provides laboratory experiments in network measurements and applications, experimental logic design and an introduction to laboratory equipment and techniques. Topics include laboratory experiments with electric circuits, components, instrumentation and networks. Upon completion, students should be able to utilize electric instruments to investigate electric circuits and networks. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

### ENG - English

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<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>ENG 101 Applied Communications I</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<td></td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course is designed to enhance reading and writing skills for the workplace. Emphasis is placed on technical reading, job-related vocabulary, sentence writing, punctuation, and spelling. Upon completion, students should be able to identify main ideas with supporting details and produce mechanically correct short writings appropriate to the workplace. This is a diploma-level course.

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<th>Course Code</th>
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<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENG 111 Expository Writing</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: As required by placement test score(s), ENG 090 with a grade of C or higher and/or RED 090 with a grade of C or higher; or ENG 095 with a grade of C or higher; or EFL 111 and EFL 112 with grades of C or higher; or appropriate placement test score(s); or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.

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<tr>
<th>Course Code</th>
<th>Lecture</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>ENG 112 Argument-Based Research</td>
<td>3</td>
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<tr>
<td>Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.

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<tr>
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<th>Credit</th>
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<tbody>
<tr>
<td>ENG 113 Literature-Based Research</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</table>
This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

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<th>Course Code</th>
<th>Lecture</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>ENG 114 Professional Research and Reporting</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.

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<th>Course Code</th>
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<th>Credit</th>
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<tbody>
<tr>
<td>ENG 125 Creative Writing I</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others. The primary focus of this course is poetry and fiction although some time will be devoted to non-fiction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

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<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENG 126 Creative Writing II</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Prerequisites: ENG 125 or consent of division director.</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication. The main focus of this course will be on poetry and fiction; however, some attention will be devoted to creative non-fiction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

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<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENG 133 Introduction to the Novel</td>
<td>3</td>
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<tr>
<td>Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.</td>
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<tr>
<td>Corequisites: ENG 112, ENG 113 or ENG 114</td>
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</table>
This course provides intensive study of the novel as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of the novel. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing features of the novel. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Credits</th>
<th>Corequisites</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>ENG 231 American Literature I</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 232 American Literature II</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 241 British Literature I</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 242 British Literature II</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 251 Western World Literature I</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 252 Western World Literature II</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 253 The Bible as Literature</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 254 African American Literature</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
<tr>
<td>ENG 255 Literature by Women</td>
<td>3 0 3</td>
<td></td>
<td>None</td>
<td>Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.</td>
</tr>
</tbody>
</table>
ENG 275 Science Fiction  
Prerequisites: ENG 112, ENG 113, or ENG 114 or consent of division director.
Corequisites: None
This course covers the relationships between science and literature through analysis of short stories and novels. Emphasis is placed on scientific discoveries that shaped Western culture and our changing view of the universe as reflected in science fiction literature. Upon completion, students should be able to trace major themes and ideas and illustrate relationships between science, world view, and science fiction literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ENG - Developmental Studies  
(ENG 060-090)
See Pre-College section of this catalog.

ENT - Entertainment

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<tr>
<td>ENT 211 Entertainment Promotion</td>
<td>3</td>
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</table>

Prerequisites: None
Corequisites: None
This course examines the elements of marketing and promotion specifically applicable to the entertainment business. Topics include the creation of publicity materials, understanding the process of developing media relations, developing a press kit, and creating a publicity campaign. Upon completion, students should be able to create a marketing and promotion campaign.

FIP - Fire Protection Technology

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<tbody>
<tr>
<td>FIP 120 Introduction to Fire Protection</td>
<td>3</td>
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</table>

Prerequisites:
Corequisites: None
This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

FIP 124 Fire Prevention and Public Education  
3 0 3

Prerequisites:
Corequisites: None
This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

FIP 128 Arson Investigation  
3 0 3

Prerequisites:
Corequisites: None
This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

FIP 132 Building Construction  
3 0 3

Prerequisites:
Corequisites: None
This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistant aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions.

FIP 136 Inspections and Codes  
3 0 3

Prerequisites:
Corequisites: None
This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

FIP 140 Industrial Fire Protection  
3 0 3

Prerequisites:
Corequisites: None
This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility’s fire protection.

FIP 144 Sprinklers and Auto Alarms  
2 2 3

Prerequisites:
Corequisites: None
This course introduces various types of automatic sprinklers, standpipes, and fire alarm systems. Topics include wet or dry systems, testing and maintenance, water supply requirements, fire detection and alarm systems, and other related topics. Upon completion, students should be able to demonstrate a working knowledge of various sprinkler and alarm systems and required inspection and maintenance.

FIP 148 Fixed and Portable Extinguishing Systems  
2 2 3

Prerequisites:
Corequisites: None
This course provides a study of various types of fixed and portable extinguishing systems, their operation, installation, and maintenance. Topics include applications, testing, and maintenance of Halon, carbon dioxide, dry chemical, and special extinguishing agents in fixed and portable systems. Upon completion, students should be able to identify various types of fixed and portable systems, including their proper application and maintenance.

FIP 152 Fire Protection Law  
3 0 3

Prerequisites:
Corequisites: None
This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.
FIP 220 Fire Fighting Strategies 3 0 3
Prerequisites: None
Corequisites: None
This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.

FIP 221 Advanced Fire Fighting Strategies 3 0 3
Prerequisites: FIP 220
Corequisites: None
This course covers command-level operations for multi-company/agency operations involving fire and non-fire emergencies. Topics include advanced ICS, advanced incident analysis, command-level fire operations, and control of both man made and natural major disasters. Upon completion, students should be able to describe proper and accepted systems for the mitigation of emergencies at the level of overall scene command.

FIP 224 Instructional Methodology 4 0 4
Prerequisites: None
Corequisites: None
This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 and NFPA 1021.

FIP 230 Chemistry of Hazardous Materials I 5 0 5
Prerequisites: None
Corequisites: None
This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.

FIP 231 Chemistry of Hazardous Materials II 4 2 5
Prerequisites: FIP 230
Corequisites: None
This course covers hazardous materials characterization, properties, location, handling and response guidelines, hazard survey principles, and other related topics. Topics include radiation hazards, instruments, inspections, and detection of the presence of hazardous materials in industrial/commercial occupancies. Upon completion, students should be able to inspect chemical/radioactive sites and use on-site visits to gasoline and/or LPG storage facilities/chemical plants to develop a pre-plan.

FIP 232 Hydraulics and Water Distribution 2 2 3
Prerequisites: MAT 115
Corequisites: None
This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics.

FIP 264 Flame Propagation and Materials Rating 1 4 3
Prerequisites: None
Corequisites: None
This course covers the role of interior finishes in fires, smoke obscuration and density, flame spread, pyrolysis, and other related topics. Emphasis is placed on testing equipment which includes Rack Impingement, Bench Furnace, and the two-foot tunnel. Upon completion, students should be able to understand the operation of the testing equipment and compile a reference notebook.

FIP 276 Managing Fire Services 3 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of fire department operations. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.

FLO - Floriculture

FLO 189 Basic Floral Design 1 2 2
Prerequisites: None
Corequisites: None
This course provides general knowledge of floral design on a non-commercial level. Topics include simple corsage work, vase arrangements, and holiday novelty items. Upon completion, students should be able to tie a bow and construct simple corsages, bud vases, and holiday items.

FRE - French

FRE 111 Elementary French I 3 0 3
Prerequisites: None
Corequisites: FRE 181
This course introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. When registering for this class, students will also need to register for FRE 181, French Lab 1. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 112 Elementary French II 3 0 3
Prerequisites: FRE 111 or consent of division director
Corequisites: FRE 182
This course is a continuation of FRE 111 focusing on the fundamental elements of the French language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate further cultural awareness. When registering for this class, students will also need to register for FRE 182,
French Lab 2. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 120 French for the Workplace**  
**Prerequisites:** None  
**Corequisites:** None  
This course offers applied French for the workplace to facilitate basic communication with people whose native language is French. Emphasis is placed on oral communication and career-specific vocabulary that targets business and industry. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity.

**FRE 161 Cultural Immersion**  
**Prerequisites:** FRE 111  
**Corequisites:** None  
This course explores Francophone culture through intensive study on campus and field experience in a host country or area. Topics include an overview of linguistic, historical, geographical, sociopolitical, economic, and/or artistic concerns of the area visited. Upon completion, students should be able to exhibit first-hand knowledge of issues pertinent to the host area and demonstrate an understanding of cultural differences. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**FRE 181 French Lab 1**  
**Prerequisites:** None  
**Corequisites:** FRE 111  
This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**FRE 182 French Lab 2**  
**Prerequisites:** FRE 181 or consent of division director  
**Corequisites:** FRE 112  
This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**FRE 211 Intermediate French I**  
**Prerequisites:** FRE 112 or consent of division director  
**Corequisites:** FRE 281  
This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. When registering for this class, students will also need to register for FRE 281, French Lab 3. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 212 Intermediate French II**  
**Prerequisites:** FRE 211 or consent of division director  
**Corequisites:** None  
This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. When registering for this class, students will also need to register for FRE 282, French Lab 4. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 221 French Conversation**  
**Prerequisites:** FRE 212  
**Corequisites:** None  
This course provides an opportunity for intensive communications in spoken French. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**FRE 281 French Lab 3**  
**Prerequisites:** FRE 281 or consent of division director  
**Corequisites:** FRE 211  
This course provides an opportunity to enhance the review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**FRE 282 French Lab 4**  
**Prerequisites:** FRE 281 or consent of division director  
**Corequisites:** FRE 282  
This course provides an opportunity to enhance the review and expansion of the essential skills of the French language. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**GEL - Geology**

**GEL 111 Introductory Geology**  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces basic landforms and geological processes. Topics include rocks, minerals, volcanoes, fluvial processes, geologic history, plate tectonics, glaciers, and coastal dynamics. Upon completion, students should be able to describe basic geological processes that shape the earth. This
course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**GEL 113 Historical Geology**  
Prerequisites: GEL 111, GEL 120 GEL, 1604 or equivalent  
Corequisites: None  
This course covers the geological history of the earth and its life forms. Emphasis is placed on the study of rock strata, fossil groups, and geological time. Upon completion, students should be able to identify major fossil groups and associated rock strata and approximate ages of geological formations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**GEL 120 Physical Geology**  
Prerequisites:  
Corequisites: None  
This course provides a study of the structure and composition of the earth’s crust. Emphasis is placed on weathering, erosional and depositional processes, mountain building forces, rocks and minerals, and structural changes. Upon completion, students should be able to explain the structure, composition, and formation of the earth’s crust. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**GEL 220 Marine Geology**  
Prerequisites: GEL 120  
Corequisites: None  
This course presents a detailed examination of coastal and sea floor geology. Emphasis is placed on coastal and sea floor landforms and processes that shape these features. Upon completion, students should be able to describe the origin and evolution of both coastal and sea floor landforms.

**GEO - Geography**

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<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>GEO 131 Physical Geography I</td>
<td>3</td>
<td>2</td>
<td>4</td>
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<tr>
<td>GEO 111 World Regional Geography</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GEO 132 Physical Geography II</td>
<td>3</td>
<td>2</td>
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**GER - German**

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<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
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</thead>
<tbody>
<tr>
<td>GER 111 Elementary German I</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>GER 112 Elementary German II</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GER 113 Historical German I</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GER 131 Physical Geography I</td>
<td>3</td>
<td>2</td>
<td>4</td>
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</tbody>
</table>

This course explores German culture through intensive study on campus and field experience in a host country or area. Topics include an overview of linguistic, historical, geographical, sociopolitical, economic and/or artistic concerns of the area visited. Upon completion, students should be able to exhibit first-hand knowledge of issues pertinent to the host area and demonstrate an understanding of cultural differences. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
GER 181 German Lab 1 0 2 1
Prerequisites: None
Corequisites: GER 111
This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

GER 182 German Lab 2 0 2 1
Prerequisites: GER 181 or consent of division director.
Corequisites: GER 112
This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

GER 211 Intermediate German I 3 0 3
Prerequisites: GER 112 or consent of division director.
Corequisites: GER 281
This course provides a review and expansion of the essential skills of the German language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. When registering for this class, students will also need to register for GER 281, German Lab 3. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 212 Intermediate German II 3 0 3
Prerequisites: GER 211 or consent of division director.
Corequisites: GER 282
This course provides a continuation of GER 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. When registering for this class, students will also need to register for GER 282, German Lab 4. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

GER 221 German Conversation 3 0 3
Prerequisites: GER 212
Corequisites: None
This course provides an opportunity for intensive communication in spoken German. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

GER 281 German Lab 3 0 2 1
Prerequisites: GER 182 or consent of division director.
Corequisites: GER 211
This course provides an opportunity to enhance the review and expansion of the essential skills of the German language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

GER 282 German Lab 4 0 2 1
Prerequisites: GER 281 or consent of division director.
Corequisites: GER 212
This course provides an opportunity to enhance the review and expansion of the essential skills of the German language. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

GER 293 Selected Topics in German 3 0 3
Prerequisites: None
Corequisites:
This course provides an opportunity to explore areas of current interest in the German everyday language and culture. Emphasis is placed on subject matter appropriate to oral communication/cross-cultural communication and the visiting of sites in Germany which are culturally and historically relevant. Upon completion, students should be able to demonstrate an understanding of German in various everyday situations. Topics include greetings and introductions, currencies, public transportation, German history, museum excursions and cultural awareness. Students must already be ticketed for Germany trip.

GIS - Geospatial Technology

GIS 111 Introduction to GIS 2 2 3
Prerequisites: None
Corequisites: None
This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, products/applications, and differences between database models and between raster and vector systems.

GIS 112 Introduction to GPS 2 2 3
Prerequisites: None
Corequisites: None
This course provides an overview of the Global Positioning System (GPS). Topics include the theory, implementation, and operations of GPS, as well as alternate data source remote sensing. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GPS.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 120</td>
<td>Introduction to Geodesy</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the fundamental concepts behind map projections, datums, and coordinate systems. Topics include the theory of how the earth's shape is defined and how geographic features are positioned using spherical coordinate systems. Upon completion, students should be able to demonstrate an understanding of the fundamentals of geodesy as it relates to the measurement and representation of the earth.</td>
</tr>
<tr>
<td>GIS 121</td>
<td>Georeferencing &amp; Mapping</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces coordinate systems, fundamentals of surveying, and cartography. Topics include the theory, acquisition, and use of locational data using both continuous and discrete georeferencing methods. Upon completion, students should be able to identify appropriate coordinate systems for a situation and translate data into correct map form.</td>
</tr>
<tr>
<td>GIS 125</td>
<td>CAD for GIS</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the concepts of Computer-Aided Drafting (CAD) as well as software that is used for building geographic data for a GIS. Emphasis is placed on the learning of basic commands used in building spatial data. Upon completion, student will be able to operate within a CAD environment.</td>
</tr>
<tr>
<td>GIS 161</td>
<td>Intro to Comp/BASIC &amp; C++</td>
<td>1 4 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the electronic computer and includes a general description of computer design and operation, associated vocabulary, and most widely used applications. Emphasis is placed on hands-on experience with software. Upon completion, students should be able to utilize and depict calculations, decision-making and branching and looping functions processing, and top-down programming methodology.</td>
</tr>
<tr>
<td>GIS 211</td>
<td>Introduction to GIS</td>
<td>1 2 2</td>
<td>None</td>
<td>None</td>
<td>This course provides the opportunity to interact with a municipal, industrial, or service organization. Emphasis is placed on defining a question, gathering and analyzing pertinent data, and drawing conclusions leading to question resolution. Upon completion, students should be able to demonstrate their command of GIS/GPS applications for problem solving.</td>
</tr>
<tr>
<td>GIS 215</td>
<td>GIS Data Models</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course covers interpreting and understanding of a variety data formats available in GIS. Topics include the similarities and differences between data models as well as how data is treated differently within each format, to include the conversion of data between different environments. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GIS data storage and interoperability.</td>
</tr>
<tr>
<td>GIS 221</td>
<td>Advanced Topics in GIS</td>
<td>1 2 2</td>
<td>None</td>
<td>None</td>
<td>This course technical aspects of GIS functions, algorithms, theory of geographical data structures, and error handling. Emphasis is placed on laboratory experiences requiring manipulation of tools, data, and macros. Upon completion, students should be able to construct a small Geographic Information System.</td>
</tr>
<tr>
<td>GIS 222</td>
<td>Internet Mapping</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course is designed as an introduction to multimedia, interactive, animated, and Web cartography. Topics include the principles of effective cartographic communication, and stressing the new and important roles digital cartography is coming to play in cyberspace. Upon completion, students should be able to demonstrate the ability to evaluate digital cartographic information and create effective internet maps.</td>
</tr>
<tr>
<td>GIS 225</td>
<td>Advanced Methods in GIS</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course promotes the analytic and critical thinking that is required when conducting statistical analysis of geographic data. Emphasis is placed on understanding data at a descriptive level for the conducting of statistical analysis. Upon completion, students will be able to understand the unique characteristics of geo-referenced data.</td>
</tr>
<tr>
<td>GIS 230</td>
<td>GIS Data Creation</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the fundamental concepts of primary GIS data creation. Topics include the collection of field data, digital conversion of existing hardcopy maps, and the construction of spatial data from known geodetic locations. Upon completion, students should be able to demonstrate an ability to collect, create, and process spatial data within a variety of environments.</td>
</tr>
<tr>
<td>GIS 231</td>
<td>Geo Position Sys Methods</td>
<td>1 4 3</td>
<td>None</td>
<td>None</td>
<td>This course covers quantitative techniques for collection, classification, and spatial analysis of geographical data. Emphasis is placed on map analysis and application of spatial analysis. Upon completion, students should be able to collect, record, and utilize geographical data.</td>
</tr>
<tr>
<td>GIS 232</td>
<td>Spatial Databases</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course covers various stages of spatial database design and implementation, including conceptual models and query languages. Topics include spatial networks, spatial data mining, indexing, and query processing. Upon completion, students should be able to demonstrate a comprehensive knowledge of spatial databases management systems.</td>
</tr>
<tr>
<td>GIS 235</td>
<td>Raster GIS</td>
<td>2 2 3</td>
<td>None</td>
<td>None</td>
<td>This course will provide students with the fundamentals of analyzing remotely sensed data. Emphasis is placed on digital image enhancement as a means to further data analysis. Upon completion, students will be able to accurately interpret and analyze remotely sensed data for use in a raster or vector GIS.</td>
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Central Piedmont Community College
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<tr>
<th>Course Code</th>
<th>Lecture</th>
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<tbody>
<tr>
<td>GIS 240 Air Photo Interpretation</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course is designed to introduce the student to remote sensing, photogrammetry and various components of land use mapping. Emphasis is placed on the art and science of aerial photo interpretation. Upon completion, students will be able to review, gather and analyze data from diverse forms of image maps.</td>
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<tbody>
<tr>
<td>GIS 241 Cartographic Production</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers the application of computerized cartography, to include the science and art of map design. Topics include the use of maps as an effective medium, efficient map layout and large-scale map production. Upon completion, students should be able to create a variety of map products for an audience or client.</td>
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<tbody>
<tr>
<td>GIS 245 Introduction to Spatial Analysis</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: GIS 111 and GIS 121</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course is designed to expose students to various components of spatial analysis. Emphasis is placed on modeling and decision making with the use of spatial data. Upon completion, students will be able to utilize statistical models in the process of spatial analysis.</td>
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<tbody>
<tr>
<td>GIS 246 Prin of Property Mapping</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers interpreting and understanding land records, updating parcel data, and utilizing the data for information retrieval and spatial analysis. Topics include the use and development of parcel information, parcel boundaries, and legal land descriptions. Upon completion, students should be able to demonstrate an understanding of the fundamentals of parcel mapping.</td>
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<tbody>
<tr>
<td>GIS 249 Remote Sensing</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: GIS 111 and GIS 240 or GIS 235</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces remote sensing and presents an overview of the use of satellite imagery within the field of geospatial technology. Topics will include the principles of remote sensing, satellite platforms, and sensors. Upon completion, students should be able to demonstrate an understanding of data sources, uses, and analysis techniques of remote sensing.</td>
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<tbody>
<tr>
<td>GIS 252 Utilities in GIS</td>
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<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>The student will gain an understanding of utilizing GIS for utilities applications. Topics include the theory and implementation of GIS networks effectively in real world utility scenarios. Upon completion, students should be able to demonstrate an understanding of the fundamentals of utility mapping, including the use of correct terminology and symbology.</td>
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<tbody>
<tr>
<td>GIS 255 Advanced Spatial Analysis</td>
<td>2</td>
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<tr>
<td>Prerequisites: GIS 111 and GIS 121</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course provides an opportunity to combine the constituents of Geographic Information Science. Emphasis is placed on the acquisition, refinement and analysis of data from numerous sources. Upon completion, students will be able to extract tangible results gained from the manipulation of a diversified group of information resources.</td>
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<tr>
<td>GIS 259 Photogrammetry</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: GIS 111 and GIS 240 or GIS 235</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces the history and advancements in photogrammetry. Topics will include photogrammetric techniques, aerial cameras, camera calibration, and stereoscopy. Upon completion, students will demonstrate an understanding of the methodologies and techniques used to gather photogrammetric data.</td>
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<tbody>
<tr>
<td>GIS 261 Programming in GIS</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>The course provides an understanding of how to customize GIS software applications by way of modified toolbars, menus, and buttons. Topics include the theory and implementation of the various scripting languages currently in use. Upon completion, students should be able to modify the appearance of interface elements, save interface customizations, and add custom functionality to a GIS application.</td>
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<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>GIS 262 GIS Programming Trends</td>
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<tr>
<td>Prerequisites: GIS 111</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces non-proprietary and innovative software used in geospatial technology. Topics will include an overview of open source and/or emerging software used in geographic information systems. Upon completion, students should be able to demonstrate current trends and issues in new technologies as they relate to the geospatial information.</td>
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**Government**

(See POL Political Science)

### GRA - Graphic Arts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>GRA 110 Graphic Arts Orientation</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers the history, development, and commercial applications of the major printing processes. Topics include offset lithography, screen printing, intaglio, relief printing, and emerging technologies. Upon completion, students should be able to demonstrate an understanding of the major characteristics, advantages, and disadvantages of each process.</td>
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<tr>
<th>Course Code</th>
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<tr>
<td>GRA 121 Graphic Arts I</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course introduces terminology, tools and materials, procedures, and equipment used in graphic arts production. Topics include copy preparation and pre-press production relative to printing. Upon completion, students should be able to demonstrate an understanding of graphic arts production.</td>
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<tr>
<th>Course Code</th>
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<tr>
<td>GRA 140 Graphic Arts Imaging</td>
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<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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</tbody>
</table>
| This course covers the use of photographic and electronic imaging techniques in the printing industry. Topics include exposure control and manipulation for a variety of process photography procedures and emerging electronic imaging tech-
Students should be able to use electronic document production tools.

**GRA 151 Computer Graphics I**  
**Prerequisites:** None  
This course introduces the use of hardware and software for production and design in graphic arts. Topics include graphical user interface and current industry uses such as design, layout, typography, illustration, and imaging for production. Upon completion, students should be able to understand and use the computer as a fundamental design and production tool.

**GRA 152 Computer Graphics II**  
**Prerequisites:** GRA 151  
Corequisites: None  
This course covers advanced design and layout concepts utilizing illustration, page layout, and imaging software in graphic arts. Emphasis is placed on enhancing and developing the skills that were introduced in GRA 151. Upon completion, students should be able to select and utilize appropriate software for design and layout solutions.

**GRA 153 Computer Graphics III**  
**Prerequisites:** GRA 152  
Corequisites: None  
This course is a continuation of GRA 152. Emphasis is placed on advanced computer graphics hardware and software applications. Upon completion, students should be able to demonstrate competence in selection and utilization of appropriate software for specialized applications.

**GRA 154 Computer Graphics IV**  
**Prerequisites:** GRA 153  
Corequisites: None  
This course is a continuation of GRA 153. Emphasis is placed on advanced techniques using a variety of hardware and software applications to produce complex projects. Upon completion, students should be able to use electronic document production tools.

**GRA 245 Printing Sales / Service**  
**Prerequisites:** None  
This course covers the operation of a sales, marketing, and service program for a printing company or printing supplier. Topics include marketing, prospecting, telephone sales, customer service, order entry, closing the sale, and answering objections. Upon completion, students should be able to understand the operation of sales and service in printing and printing supply organizations.

**GRA 255 Image Manipulation I**  
**Prerequisites:** GRA 151 or GRD 151  
Corequisites: None  
This course covers applications associated with electronic image manipulation, including color correction, color separation, special effects, and image conversion. Topics include image-capturing hardware, image-processing software, and output options. Upon completion, students should be able to utilize hardware and software to acquire, manipulate, and output images to satisfy design and production.

**GRA 256 Image Manipulation II**  
**Prerequisites:** GRA 255  
Corequisites: None  
This course covers electronic color separation and its relationship to multi-color printing. Topics include color theory, separation, color matching, proofing, and output of process and spot color images. Upon completion, students should be able to use hardware and image processing software to produce color separations and proofs for various printing processes.

**GRA 280 Printing Management**  
**Corequisites:** None  
**Prerequisites:** None  
This course covers management and supervision in the printing industry. Topics include planning, organization, plant layout, scheduling, goal setting, business ethics, personnel policies, leadership and personal development, OSHA and environmental laws, and employment laws. Upon completion, students should be able to demonstrate an understanding of management and supervision techniques and policies used in a variety of printing departments and organizations.

### GRD - Graphic Design

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<tr>
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<th>Title</th>
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<th>Lab</th>
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<td>Computer Graphics II</td>
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<td>GRA 153</td>
<td>Computer Graphics III</td>
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<td>GRA 255</td>
<td>Image Manipulation I</td>
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<tr>
<td>GRA 256</td>
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<td>GRA 280</td>
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<td>GRD 110</td>
<td>Typography I</td>
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<td>GRD 111</td>
<td>Typography II</td>
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<td>GRD 112</td>
<td>History of Graphic Design</td>
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<tr>
<td>GRD 131</td>
<td>Illustration I</td>
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</table>

**GRD - Graphic Design**

This course introduces the application of rendering techniques to create illustrations. Emphasis is placed on controlling various media, methods, surfaces, design problems, and the appropriate media selection process. Upon completion, students should be able to produce quality illustrations from conception through finished artwork.
<table>
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<th>Course Code</th>
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<td>GRD 141</td>
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<td>GRD 142</td>
<td>Graphic Design II</td>
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<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
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<td>GRD 152</td>
<td>Computer Design Tech I</td>
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<td>GRD 160</td>
<td>Photo Fundamentals I</td>
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<td>GRD 241</td>
<td>Graphic Design III</td>
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<td>GRD 242</td>
<td>Graphic Design IV</td>
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<td>GRD 263</td>
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<td>GRD 265</td>
<td>Digital Print Production</td>
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<td>GRD 280</td>
<td>Portfolio Design</td>
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<td>GRD 282</td>
<td>Advertising Copywriting</td>
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</table>

**GRD - Graphic**

This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues.
such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. This course is also available through the Virtual Learning Community (VLC). This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**HEA 112 First Aid and CPR**  
Prerequisites:  
Corequisites: None  
This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. Students meeting the requirements of this course will receive certificates of completion. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**HEA 130 Health-Adult Sexuality**  
Prerequisites:  
Corequisites: None  
This course provides information about health issues related to adult human sexuality. Topics include basic reproductive anatomy, contraceptive methods, STDs, and related information. Upon completion, students should be able to identify various related community agencies and available resources relating to sexual issues.

**HET - Heavy Equipment and Transport Technology — Diesel Mechanics**  
See also HYD-Hydraulics for additional courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>HET 110</td>
<td>Diesel Engines</td>
<td>3 9 6</td>
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<tr>
<td>HET 112</td>
<td>Diesel Electrical Systems</td>
<td>3 6 5</td>
</tr>
<tr>
<td>HET 115</td>
<td>Electronic Engines</td>
<td>2 3 3</td>
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<tr>
<td>HET 118</td>
<td>Mechanical Orientation</td>
<td>2 0 2</td>
</tr>
<tr>
<td>HET 119</td>
<td>Mechanical Transmissions</td>
<td>2 2 3</td>
</tr>
<tr>
<td>HET 120</td>
<td>Preventive Maintenance</td>
<td>1 3 2</td>
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<tr>
<td>HET 125</td>
<td>Preventive Maintenance Lab</td>
<td>0 3 1</td>
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<tr>
<td>HET 126</td>
<td>Shop Rules and Regulations</td>
<td>1 0 1</td>
</tr>
<tr>
<td>HET 127</td>
<td>Medium / Heavy Duty Tune-up</td>
<td>1 2 2</td>
</tr>
</tbody>
</table>

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**Course Descriptions**

**HET 110 Diesel Engines**  
Prerequisites:  
Corequisites: None  
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

**HET 112 Diesel Electrical Systems**  
Prerequisites:  
Corequisites: None  
This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.

**HET 115 Electronic Engines**  
Prerequisites:  
Corequisites: None  
This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturer’s specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

**HET 116 Air Conditioning / Diesel Equipment**  
Prerequisites:  
Corequisites: None  
This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.

**HET 118 Mechanical Orientation**  
Prerequisites:  
Corequisites: None  
This course introduces the care and safe use of power and hand tools. Topics include micrometers, dial indicators, torque wrenches, drills, taps dies, screw extractors, thread restorers, and fasteners. Upon completion, students should be able to select and properly use tools for various operations.

**HET 119 Mechanical Transmissions**  
Prerequisites:  
Corequisites: None  
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

**HET 120 Preventive Maintenance**  
Prerequisites:  
Corequisites: None  
This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

**HET 125 Preventive Maintenance Lab**  
Prerequisites: None  
Corequisites: HET 125  
This course provides a laboratory setting to enhance preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Emphasis is placed on practical experiences that enhance the topics presented in HET 125. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in HET 125.

**HET 126 Shop Rules and Regulations**  
Prerequisites:  
Corequisites: None  
This course introduces safety, OSHA, and EPA general requirements used in the mobile equipment industry. Topics include fire extinguisher use, MSDS sheets, oil contamination, protective gear, and other related topics. Upon completion, students should be able to properly use fire extinguishers and demonstrate knowledge of applicable general safety, OSHA, and EPA regulations.

**HET 127 Medium / Heavy Duty Tune-up**  
Prerequisites:  
Corequisites: None  
This course introduces tune-up and troubleshooting according to manufacturers’ specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be
able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

**HET 230 Air Brakes**  
1 2 2  
Prerequisites:  
Corequisites: None  
This course introduces the operation and design of air braking systems used on trucks. Topics include safety, governors, compressors, and supporting systems. Upon completion, students should be able to diagnose, disassemble, inspect, repair, and reassemble air brake systems.

**HET 231 Medium / Heavy Duty Brake Systems**  
1 3 2  
Prerequisites:  
Corequisites: None  
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

**HET 233 Suspension and Steering**  
2 4 4  
Prerequisites:  
Corequisites: None  
This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

**HIS - History**

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<th>Lecture</th>
<th>Lab</th>
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<tr>
<td>HIS 111 World Civilizations I</td>
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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic, and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations.  
*This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

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<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations.  
*This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the develop-ment of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history.  
*This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major American wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War.  
*This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

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<td>HIS 141 Genealogy &amp; Local History</td>
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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course explores the role of the local or family historian. Emphasis is placed on historical or genealogical research techniques including a survey of local, state, and national archival resources. Upon completion, students should be able to conduct genealogical research and do a major research project on local or family history.  
*This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.*

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<tr>
<td>HIS 165 Twentieth-Century World</td>
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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course includes the major developments, issues, and ideas in twentieth-century world history. Emphasis is placed on contrasting political systems, the impact of science and technology, and the philosophical temperament of twentieth-century people. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the twentieth century.

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<td>HIS 221 African-American History</td>
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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</tbody>
</table>
This course is a study of African-American from the Colonial period to the present. Topics include African origins, the slave trade, the Civil War, Reconstruction, the Jim Crow era, the civil rights movement, and contributions of African Americans. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the history of African Americans.

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<tr>
<td>HIS 226 The Civil War</td>
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<td>0</td>
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<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
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</table>
This course examines the social, political, economic, and ideological forces that led to the Civil War and Reconstruction. Topics include regional conflicts and sectionalism, dissolution of the Union, military campaigns, and the war’s socioeconomic impact, aftermath, and consequences. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the United States during the era of the Civil War.
### HIS 231 Recent American History 3 0 3
**Prerequisites:**
Corequisites: None
This course is a study of American society from the post-Depression era to the present. Topics include World War II, the Cold War, social unrest, the Vietnam War, the Great Society, and current political trends. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in recent America.

### HIS 236 North Carolina History 3 0 3
**Prerequisites:**
Corequisites: None
This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America’s discovery to the present. Topics include native and immigrant backgrounds; colonial, ante-bellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina.

#### HIT - Health Information Technology

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<th>Course Code</th>
<th>Course Title</th>
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<td>HIT 112</td>
<td>Health Law and Ethics</td>
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<tr>
<td>HIT 210</td>
<td>Healthcare Statistics</td>
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<td>HIT 212</td>
<td>ICD-9-CM Coding</td>
<td>3 3 0 4</td>
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<td>HIT 214</td>
<td>CPT/Other Coding Systems</td>
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<tr>
<td>HIT 215</td>
<td>Reimbursement Methodology</td>
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### Lecture Lab Clinic Credit

- **HIT 110 Fundamentals of HIM:** 2 0 0 2
  - Prerequisites: Completion of required developmental courses and admission to the Health Information Technology program.
  - Corequisites: CIS 110
- **HIT 112 Health Law and Ethics:** 3 0 0 3
  - Prerequisites: Completion of required developmental courses and admission to the Health Information Technology program.
  - Corequisites: CIS 110
- **HIT 210 Healthcare Statistics:** 2 2 0 3
  - Prerequisites: MAT 115, CIS 110, HIT 110, HIT 112, HIT 114
  - Corequisites: None
- **HIT 212 ICD-9-CM Coding:** 3 3 0 4
  - Prerequisites: BIO 169, MED 122, HIT 110, HIT 112, HIT 114, HIT 226
  - Corequisites: None
- **HIT 214 CPT/Other Coding Systems:** 1 3 0 2
  - Prerequisites: HIT 212
  - Corequisites: None
- **HIT 215 Reimbursement Methodology:** 1 3 0 2
  - Prerequisites: HIT 110, HIT 112, HIT 114, CIS 110
  - Corequisites: None

- **HIT 122 Prof Practice Exp I:** 0 0 3 1
  - Prerequisites: HIT 110, HIT 112, HIT 114, CIS 110
  - Corequisites: None
- **HIT 124 Prof Practice Exp II:** 1 0 3 2
  - Prerequisites: HIT 216, HIT 210, HIT 212
  - Corequisites: None

This course covers maintenance, compilation, analysis, and presentation of healthcare statistics and research protocols and techniques. Topics include basic statistical principles, indices, databases, registries, vital statistics, descriptive statistics, research protocol monitoring, Institutional Review Board processes, and knowledge-based research techniques. Upon completion, students should be able to apply, interpret, and present healthcare statistics and utilize research techniques to gather and interpret healthcare data.

- **HIT 210 Healthcare Statistics:** 2 2 0 3
- **HIT 212 ICD-9-CM Coding:** 3 3 0 4
- **HIT 214 CPT/Other Coding Systems:** 1 3 0 2
- **HIT 215 Reimbursement Methodology:** 1 3 0 2

This course covers ICD-9-CM diagnostic and procedural coding according to the guidelines of the Coordinating Parties. Emphasis is placed on coding conventions and rules, methodology and sequencing, data sets, documentation requirements, data retrieval, quality control, and use of coding resources. Upon completion, students should be able to apply coding principles to correctly assign ICD-9-CM diagnostic and surgical codes.

- **HIT 212 ICD-9-CM Coding:** 3 3 0 4

This course covers application of principles and guidelines of CPT/HCPCS coding. Topics include clinical classification/nomenclature systems such as SNOMED, DSM, ICD-O and the use of encoders. Upon completion, students should be able to apply coding principles to correctly assign CPT/HCPCS codes.

- **HIT 214 CPT/Other Coding Systems:** 1 3 0 2

This course covers reimbursement methodologies used in all healthcare settings as they relate to national billing, compliance, and reporting requirements. Topics include prospective payment systems, billing process and procedures, chargemaster maintenance, regulatory guidelines, reimbursement monitoring, and compliance strategies and reporting. Upon completion, students should be able to perform data quality reviews to
validate code assignment and comply with reimbursement and reporting requirements.

HIT 216 Quality Management  
Prerequisites: HIT 110, HIT 112, HIT 114
Corequisites: None
This course introduces principles of quality assessment and improvement, and utilization, risk, and case management, in healthcare. Topics include Continuous Quality Improvement, and case management processes, data analysis/reporting techniques, credentialing, regulatory quality monitoring requirements, and outcome measures and monitoring. Upon completion, students should be able to abstract, analyze, and report clinical data for facility-wide quality management/performance improvement programs and monitor compliance measures.

HIT 218 Mgmt Principles in HIT  
Prerequisites: HIT 110, HIT 112, HIT 114
Corequisites: None
This course covers organizational management concepts as applied to healthcare settings. Topics include roles/functions of teams/committees, leadership, communication and interpersonal skills, designing and implementing orientation/training programs, monitoring workflow, performance standards, revenue cycles, and organizational resources. Upon completion, students should be able to apply management, leadership, and supervisory concepts to various healthcare settings.

HIT 220 Computers in Healthcare  
Prerequisites: CIS 110, HIT 110, HIT 112, HIT 114
Corequisites: None
This course covers electronic health information systems and their design, implementation, and application. Topics include voice recognition and imaging technology, information security and integrity, data dictionaries, modeling, and warehousing to meet departmental needs. Upon completion, students should be able to apply policies/procedures to facilitate electronic health records and other administrative applications.

HIT 222 Prof Practice Exp III  
Prerequisites: HIT 122
Corequisites: None
This course provides supervised clinical experience in healthcare settings. Emphasis is placed on practical application of curriculum concepts to the health care setting. Upon completion, students should be able to apply health information theory to health care facility practices.

HIT 226 Principles of Disease  
Prerequisites: BIO 166 or BIO 169, HIT 110, HIT 112, HIT 114
Corequisites: None
This course covers disease etiology and organ system involvement, including physical signs and symptoms, processes, and common complications and their management. Topics include basic microbiology, basic pharmacology, and principles of disease. Upon completion, students should be able to relate disease processes to etiology, physical signs and symptoms, prognosis, and common complications and their management.

HIT 280 Professional Issues  
Prerequisites: HIT 110, HIT 112, HIT 114, HIT 210, HIT 212
Corequisites: HIT 214, HIT 215, HIT 216, HIT 218, HIT 220

This course provides a comprehensive discussion of topics common to the health information profession. Emphasis is placed on application of professional competencies, job search tools, and preparation for the certification examination. Upon completion, students should be able to demonstrate competence in entry-level domains and subdomains for health information technologies.

**HOR - Horticulture Technology**

*Also see FLO Floriculture, COE Cooperative Education and TRF Turfgrass Management for additional course descriptions.*

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<th>Course Code</th>
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<tr>
<td>HOR 112 Landscape Design I</td>
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<td>Prerequisites: HOR 160 or HOR 260 or Division Permission</td>
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<td>Corequisites: None</td>
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<td>This course covers landscape principles and practices for residential and commercial sites. Emphasis is placed on drafting, site analysis, and common elements of good design, plant material selection, and proper plant utilization. Upon completion, students should be able to design and construct common landscape structures/features.</td>
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<tr>
<td>HOR 114 Landscape Construction</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course introduces the design and fabrication of landscape structures/features. Emphasis is placed on safety, tool identification and use, material selection, construction techniques, and fabrication. Upon completion, students should be able to design and construct common landscape structures/features.</td>
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<tr>
<td>HOR 116 Landscape Management I</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course covers information and skills necessary to analyze a property and develop a management schedule. Emphasis is placed on property measurement, plant condition, analysis of client needs, and plant culture needs. Upon completion, students should be able to analyze a property, develop management schedules, and implement practices based on client needs.</td>
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<tr>
<td>HOR 118 Equipment Operation and Maintenance</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course covers the proper operation and maintenance of selected equipment used in horticulture. Emphasis is placed on the maintenance, minor repairs, safety devices, and actual operation of selected equipment. Upon completion, students should be able to design a maintenance schedule, service equipment, and demonstrate safe operation of selected equipment.</td>
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<td>HOR 124 Nursery Operations</td>
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<td>Prerequisites:</td>
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<td>Corequisites: None</td>
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<td>This course covers nursery site and crop selection, cultural practices, and production and marketing methods. Topics include site considerations, water availability, equipment, irrigation, fertilization, containers, media, and pest control. Upon completion, students should be able to design and implement a nursery operation and grow and harvest nursery crops.</td>
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### HOR 134 Greenhouse Operations 2 2 3
**Prerequisites:**
- Corequisites: None
This course covers the principles and procedures involved in the operation and maintenance of greenhouse facilities. Emphasis is placed on the operation of greenhouse systems, including the environmental control, record keeping, scheduling, and production practices. Upon completion, students should be able to demonstrate the ability to operate greenhouse systems and facilities to produce greenhouse crops.

### HOR 150 Introduction to Horticulture 2 0 2
**Prerequisites:**
- Corequisites: None
This course covers the history, development, and basic techniques of horticulture. Topics include propagation techniques, planting procedures, watering and fertility, plant growth, pest and disease control, and garden design and history. Upon completion, students should be able to demonstrate an understanding of the basic principles of horticulture. Students will explore horticultural careers, organizations, and reference materials.

### HOR 154 Introduction to Horticulture Therapy 2 4 4
**Prerequisites:**
- Corequisites: None
This course introduces the concept of horticulture therapy and how it can be applied to improve human well-being. Emphasis is placed on developing a horticulture therapy program, planning activities, and adjusting activities based on the age, disability, or need of the individual. Upon completion, students should be able to develop project ideas, write lesson plans, and lead informal classes using horticulture therapy techniques.

### HOR 160 Plant Materials I 2 2 3
**Prerequisites:**
- Corequisites: None
This course covers identification, culture, characteristics, and use of plants. Emphasis is placed on nomenclature, identification, growth requirements, cultural requirements, soil preferences, and landscape applications. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials.

### HOR 162 Applied Plant Science 2 2 3
**Prerequisites:**
- Corequisites: None
This course introduces the basic concepts of botany as they apply to horticulture. Topics include nomenclature, physiology, morphology, and anatomy as they apply to plant culture. Upon completion, students should be able to apply the basic principles of botany to horticulture.

### HOR 164 Horticulture Pest Management 2 2 3
**Prerequisites:** None
- Corequisites: None
This course covers the identification and control of plant pests including insects, diseases, and weeds. Topics include pest identification and chemical regulations, safety, and pesticide application. Upon completion, students should be able to meet the requirements for North Carolina Commercial Pesticide Ground Applicators license. Students will apply the Integrated Pest Management Model in plant management.

### HOR 166 Soils & Fertilizers 2 2 3
**Prerequisites:**
- Corequisites: None
This course covers the physical and chemical properties of soils and soil fertility and management. Topics include soil formation, classification, physical and chemical properties, testing, fertilizer application, and other amendments. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media.

### HOR 168 Plant Propagation 2 2 3
**Prerequisites:**
- Corequisites: None
This course is a study of sexual and asexual reproduction of plants. Emphasis is placed on seed propagation, grafting, stem and root propagation, micro-propagation, and other propagation techniques. Upon completion, students should be able to successfully propagate ornamental plants.

### HOR 170 Horticulture Computer Application 1 3 2
**Prerequisites:** HOR 112 or Division permission
- Corequisites: None
This course introduces computer programs as they apply to the horticulture industry. Emphasis is placed on applications of software for plant identification, design, and irrigation. Upon completion, students should be able to use computer programs in horticultural situations. Students will create a CAD drawing of a landscape.

### HOR 213 Landscape Design II 2 2 3
**Prerequisites:** HOR 112
- Corequisites: None
This course covers residential and commercial landscape design, cost analysis, and installation. Emphasis is placed on job cost estimates, installation of the landscape design, and maintenance techniques. Upon completion, students should be able to read landscape design blueprints, develop cost estimates, and implement the design. Students will expand their use of design styles, techniques, and materials and will improve their presentation skills.

### HOR 215 Landscape Irrigation 2 2 3
**Prerequisites:**
- Corequisites: None
This course introduces basic irrigation design, layout, and installation. Topics include site analysis, components of irrigation systems, safety, types of irrigation systems, and installation techniques. Upon completion, students should be able to design and install basic irrigation systems.

### HOR 245 Hor Specialty Crops 2 2 3
**Prerequisites:** None
- Corequisites: None
This course introduces the techniques and requirements for the production of horticultural crops of special or local interest. Topics include development of a local market, proper varietal selection, cultural practices, site selection, and harvesting and marketing practices. Upon completion, students should be able to choose, grow, and market a horticultural crop of special or local interest.

### HOR 251 Insects & Diseases 2 2 3
**Prerequisites:**
- Corequisites: None
This course introduces insects and diseases of economic importance to horticultural crops. Topics include insect life cycles and identifying characteristics; plant diseases, including...
their signs and symptoms; control methods; and insect scouting for IPM. Upon completion, students should be able to demonstrate an understanding of insect and disease identification, collection, and control.

HOR 253 Horticulture Turfgrass 2 2 3
Prerequisites: HOR 162 or HOR 166
Corequisites: None
This course covers information and skill development necessary to establish and manage landscape turfgrasses. Topics include grass identification, establishment, cultural requirements, application of control products, fertilization, and overseeding techniques. Upon completion, students should be able to analyze a landscape site and determine those cultural and physical activities needed to establish or manage a quality turf.

HOR 255 Interiorscapes 1 2 2
Prerequisites: None
Corequisites: None
This course covers important landscape plants which were not covered in HOR 160 and HOR 260. Emphasis is placed on practical computer applications of theory covered in HOR 160. This course is laboratory to accompany HRM 120. Emphasis is placed on computer operating systems, including efficient and courteous guest services. This is a computer-based class requiring basic computer competency. Emphasis is also placed on housekeeping operations.

HOR 257 Arboriculture Practices 3 0 3
Prerequisites: HOR 160
Corequisites: None
This course covers the culture and maintenance of trees and shrubs. Topics include fertilization, pruning, approved climbing techniques, pest control, and equipment use and safety. Upon completion, students should be able to properly prune trees and shrubs and perform arboricultural practices.

HOR 260 Plant Materials II 2 2 3
Prerequisites: None
Corequisites: None
This course covers the steps involved in starting or managing a horticultural business. Topics include financing, regulations, market analysis, employer/employee relations, formulation of business plans, and operational procedures in a horticultural business. Upon completion, students should be able to assume ownership or management of a horticultural business.

HOR 265 Advanced Plant Materials 1 2 2
Prerequisites: HOR 160 or HOR 260
Corequisites: None
This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include financing, hotels, restaurants, and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist in the hospitality industry.

HOR 273 Horticulture Management and Marketing 3 0 3
Prerequisites: None
Corequisites: None
This course covers the culture and maintenance of trees and shrubs. Topics include fertilization, pruning, approved climbing techniques, pest control, and equipment use and safety. Upon completion, students should be able to properly prune trees and shrubs and perform arboricultural practices.

HRM 110 Introduction to Hospitality 2 0 2
Prerequisites: None
Corequisites: None
This course covers the growth and progress of the hospitality industry. Topics include financing, hotels, restaurants, and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist in the hospitality industry.

HRM 120 Front Office Procedures 3 0 3
Prerequisites: CIS 111; CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64
Corequisites: HRM 120A. Signature permission required
This course provides a systematic approach to hotel front office procedures. Topics include reservations, registration, guest satisfaction, occupancy and rate management, security, interdepartmental communications, and related guest services. Upon completion, students should be able to demonstrate a basic understanding of current front office operating systems, including efficient and courteous guest services. This is a computer-based class requiring basic computer competency. Emphasis is also placed on housekeeping operations.

HRM 120A Front Office Procedures Lab 0 2 1
Prerequisites: CIS 111; CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64
Corequisites: Signature permission required
This course is laboratory to accompany HRM 120. Emphasis is placed on practical computer applications of theory covered in HRM 120. Upon completion, students should be able to demonstrate a basic proficiency in computer-based, front office applications. This is a computer-based class requiring basic computer competency.

HRM 125 Hospitality Etiquette 1 0 1
Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64
Corequisites: None
This course covers social skills needed to effectively interact within organizational and customer situations. Topics include general social manners, personal appearance, table manners, restaurant and meeting etiquette, and business interaction. Upon completion, students should be able to function with confidence in various social, cultural, and professional situations.

HRM 140 Hospitality Law 3 0 3
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64
Corequisites: None
This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.
HRM 150 Hospitality Training  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course introduces techniques and methodology involved in developing training programs. Topics include job specifications, description and breakdown, training methods, coaching, evaluation, and management development. Upon completion, students should be able to produce job specifications, descriptions, and breakdowns and conduct technical training.

HRM 210 Meetings and Conventions  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course introduces organization, arrangement, and operation of conventions, trade shows, professional meetings, and food functions. Emphasis is placed on the methods of marketing, selling, and servicing conventions and trade shows and the division of administrative responsibilities in their operation. Upon completion, students should be able to describe and apply the principles of management to multi-function, multi-day conferences and events.

HRM 220 Food and Beverage Controls  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.

HRM 225 Beverage Management  2 0 2  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.

HRM 230 Club & Resort Management  2 0 2  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course introduces specific principles of managing a hospitality operation in a resort or club setting. Topics include resort and club marketing, recreational and sport activity management, and retail management. Upon completion, students should be able to demonstrate an understanding of the specialized skills involved in resort and club management.

HRM 240 Hospitality Marketing  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 57-79; CPT Arithmetic score 43-64  
Corequisites: None  
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.

HRM 245 Hospitality Human Resource Management  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading score 80-120; CPT Arithmetic score 43-64  
Corequisites: None  
This course presents a systematic approach to human resource management in the hospitality industry. Topics include labor regulations and laws, hiring, development, discipline, motivation, separation, productivity, and organizational culture. Upon completion, students should be able to apply sound human resource management skills to the hospitality industry.

HRM 280 Hospitality Management Problems  3 0 3  
Prerequisites: CPT Sentence Skills 68-85; CPT Reading Score 80-120; CPT Arithmetic score 43-64  
Corequisites: HRM 220  
This course addresses current global, national, and local concerns and issues in the hospitality industry. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers.

HSE - Human Services Technology

HSE 110 Introduction to Human Services  2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.

HSE 112 Group Process I  1 2 0 2  
Prerequisites: None  
Corequisites: None  
This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.

HSE 120 Interpersonal Relations  3 0 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces the interpersonal and communication skills used in helping relationships and professions. Topics include self-understanding; growth techniques; assertive, passive, and aggressive behaviors; and effective communications in the helping role. Upon completion, students should be able to demonstrate skills for effective communications in helping relationships which promote understanding of self, other people, and personal growth.
## HSE 123 Interviewing Techniques  
**Prerequisites:**  
Corequisites: None  
This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.

## HSE 125 Counseling  
**Prerequisites:** PSY 150  
Corequisites: None  
This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem solving, decision making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.

## HSE 210 Human Services Issues  
**Prerequisites:** Successful completion of 12 SHC in the HSE program  
Corequisites: None  
This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a multi-faceted field. Upon completion, students should be able to integrate the knowledge, skills, and experiences gained in classroom and clinical experiences with emerging trends in the field.

## HSE 212 Group Process II  
**Prerequisites:** HSE 112  
Corequisites: None  
This course is a continuation of the study of interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to demonstrate their ability to communicate with others and facilitate communications between others.

## HSE 220 Case Management  
**Prerequisites:** HSE 110  
Corequisites: None  
This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services.

## HSE 225 Crisis Intervention  
**Prerequisites:**  
Corequisites: None  
This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

## HSE 227 Children and Adolescence in Crisis  
**Prerequisites:**  
Corequisites: None  
This course covers the crises affecting children and adolescents in contemporary society. Emphasis is placed on abuse and neglect, suicide and murder, dysfunctional family living, poverty, and violence. Upon completion, students should be able to identify and discuss intervention strategies and available services for the major contemporary crises affecting children and adolescents.

### HUM - Humanities

#### HUM 115 Critical Thinking  
**Prerequisites:** ENG 101 or a grade of C or higher in ENG 111  
Corequisites: None  
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

#### HUM 130 Myth in Human Culture  
**Prerequisites:** None  
Corequisites: None  
This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

#### HUM 160 Introduction to Film  
**Prerequisites:** ENG 111 with a grade of C or higher, or consent of division director  
Corequisites: None  
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Upon completion, students should be able to critically analyze the elements covered in relation to selected films. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*  
**Note:** This course is a Writing Intensive Elective for UNCC.
### HUM 211 Humanities I
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind’s answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

### HUM 212 Humanities II
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind’s answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

### HUM 220 Human Values and Meaning
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director.
Corequisites: None
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

### HYD - Hydraulics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
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<td>3</td>
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<tr>
<td>HYD 111</td>
<td>Hydraulics/Pneumatics II</td>
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<td>HYD 112</td>
<td>Hydraulics/Medium/Heavy Duty</td>
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### INT - International Business

<table>
<thead>
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<td>INT 110</td>
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<tr>
<td>INT 180</td>
<td>Travel Study Abroad</td>
<td>3</td>
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</tr>
<tr>
<td>INT 210</td>
<td>International Trade</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
INT 220 International Economics 3 0 3
Prerequisites: INT 110 and ECO 151 or ECO 251 or ECO 252
Corequisites: None
This course introduces the forces and criteria for the development of a new international economic order. Emphasis is placed on balance of payments, foreign exchange rates and their determination, International Monetary System, and arguments for and against free trade and protectionism. Upon completion, students should be able to describe economic principles and concepts of international trade. This course is a unique concentration requirement of the International Business concentration in the Business Administration program.

INT 230 International Law 3 0 3
Prerequisites: INT 110 and BUS 115
Corequisites: None
This course is designed to develop an understanding of the different theories on international law and their effect on international trade. Emphasis is placed on concepts of contracts, international transactions, major organizations in international trade, establishment of treaties, economic areas, and US laws affecting international trade. Upon completion, students should be able to apply theories and concepts to international trade and transactions. This course is unique concentration requirement of the International Business concentration in the Business Administration program.

IPP - Interpreter Education

IPP 111 Introduction to Interpretation 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethical standards, employment opportunities, and working conditions. Topics include specialized jargon, code of ethics, interpreter assessments/qualifications, and protocol associated with various settings. Upon completion, students should be able to explain the rationale for placement of interpreters and apply ethical standards to a variety of working situations.

IPP 112 Comparative Cultures 4 0 4
Prerequisites: ASL 112
Corequisites: None
This course introduces observable attributes of deaf and non-deaf individuals and the social, political, educational, vocational, and historical issues faced by each. Topics include value systems of deaf and non-deaf individuals, enculturation stages, sociolinguistic continuum of language use within the deaf community, and cross-cultural management. Upon completion, students should be able to compare deaf and non-deaf cultures and discuss how prejudices are reflected in and impact on communication interactions.

IPP 130 Analytical Skills for Interpreters 1 4 3
Prerequisites: ASL 112
Corequisites: None
This course is designed to improve cognitive processes associated with interpreting, listening, short-term memory, semantic equivalence, visual/auditory processing, thought organization, and logic. Emphasis is placed on developing skills necessary to generate equivalent messages between ASL and English. Upon completion, students should be able to consecutively interpret non-technical, interactive messages between ASL and English.

IPP 150 Linguistics of American Sign Language (ASL) 2 0 2
Prerequisites: ASL 112
Corequisites: None
This course expands skills in generating appropriate ASL. Emphasis is placed on applying grammatical and syntactical features of ASL to a variety of technical and non-technical topics. Upon completion, students should be able to comprehend and respond with increasing fluency in ASL.

IPP 151 American Sign Language (ASL) / Numbers & Fingerspell 0 2 1
Prerequisites: ASL 112
Corequisites: None
This course provides an in-depth study of number systems and fingerspelling techniques in ASL. Emphasis is placed on generating and receiving numbers and fingerspelling in context. Upon completion, students should be able to accurately express and receive numbers and fingerspelling.

IPP 152 American Sign Language (ASL) / English Translation 3 0 3
Prerequisites: ASL 112
Corequisites: None
This course provides a study of the component parts of a cultural scheme and the manner in which ASL and English differ. Emphasis is placed on analyzing, discussing, and translating basic ASL and English texts. Upon completion, students should be able to discuss and apply techniques of cross-cultural communication and translation between deaf and non-deaf communities.

IPP 153 Introduction to Discourse Analysis 1 4 3
Prerequisites: ASL 112
Corequisites: None
This course introduces discourse types and functions and specialized vocabulary and examines the specific nature of ASL discourse. Emphasis is placed on applying and practicing a model of analysis utilizing specialized vocabulary. Upon completion, students should be able to utilize specialized vocabulary and demonstrate ASL discourse features.

IPP 161 Consecutive Interpreting 2 6 5
Prerequisites: IPP 152
Corequisites: None
This course introduces the process of ASL/English consecutive interpreting in a variety of interview, meeting, and small conference settings. Emphasis is placed on generating equivalent messages between ASL and English. Upon completion, students should be able to discuss and apply the principles of the protocol of consecutive interpreting.

IPP 221 Simultaneous Interpreting I 2 6 5
Prerequisites: IPP 161
Corequisites: None
This course introduces simultaneous ASL/English interpreting through a variety of expository texts originating in group, meeting, and conference settings. Emphasis is placed on analyzing expository texts, identifying registers, and applying principles of the protocol of interpreting. Upon completion, students should be able to apply the appropriate linguistic and/or cultural adjustments required to generate equivalent messages.
### ISC - Industrial Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISC 110 Workplace Safety</td>
<td>This course introduces the basic concepts of workplace safety. Topics include fire, ladders, lifting, lock-out/tag-out, personal protective devices, and other workplace safety issues related to OSHA compliance. Upon completion, students should be able to demonstrate an understanding of the components of a safe workplace.</td>
<td>1</td>
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<tr>
<td>ISC 112 Industrial Safety</td>
<td>This course introduces the principles of industrial safety. Emphasis is placed on industrial safety and OSHA and environmental regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment.</td>
<td>2</td>
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<tr>
<td>ISC 115 Construction Safety</td>
<td>This course introduces the basic concepts of construction site safety. Topics include ladders, lifting, lock-out/tag-out, personal protective devices, scaffolds, and above/below ground work based on OSHA regulations. Upon completion, students should be able to demonstrate knowledge of applicable safety regulations and safely participate in construction projects.</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>ISC 131 Quality Management</td>
<td>This course provide a study and analysis of the aspects and implications of quality management that lead to customer satisfaction through continuous quality improvement. Topics include Total Quality Management, ISO 9000, organizing for quality, supplier/vendor relationships, and the role of leadership in quality management. Upon completion, students should be able to demonstrate an understanding of quality management concepts and techniques.</td>
<td>3</td>
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</tbody>
</table>

### ITN - Internet Technologies

See Web Technologies (A25290)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 150 Internet Protocols</td>
<td>This course introduces the student to the application protocols used on the Internet. Topics include HTTP, Secure HTTP, TCP/IP, and related applications such as FTP, TELNET, and PING. Upon completion, students should be able to use the protocols as they pertain to the Internet, as well as, setup and maintain these protocols. This course will use the CIW Foundation’s curriculum.</td>
<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>ITN 230 Intranets</td>
<td>This course covers the setup of intranets. Topics include selection of server hardware and software, selection of client applications, security, conversion of existing data to Web-based formats, intranet applications and administration. Upon completion, students should be able to set up a corporate or institutional intranet.</td>
<td>2</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>
| ITN 250 Implementing Internet Services | This course covers the setup and configuration of news, mail, ftp, and WWW services. Topics include selection and installation of software to support common Internet services and related
topics. Upon completion, students should be able to install and configure the most commonly used Internet service software. This course uses the CIW Application Developer curriculum.

**ITN 270 Adv Internet Databases** 2 2 3  
Prerequisites: ITN 170 or instructor permission  
Corequisites: None  
This is the second of two courses on Internet databases. Topics include database distribution and replication, data warehousing, integration of desktop and Internet database structures. Upon completion, students should be able to design and implement an Internet database. This course uses SQL server as a Microsoft Academy course.

**ITN 280 Unix Internet Prog** 2 2 3  
Prerequisites: None  
Corequisites: None  
This course presents advanced concepts and features of the UNIX operating system as they pertain to Internet programming. Topics will include process control, shell-programming and scripts, advanced search techniques, power user utilities and programming for Internet service maintenance. Upon completion, students should be able to successfully perform various Internet-related UNIX programming tasks.

**JOU - Journalism**

**JOU 110 Introduction to Journalism** 3 0 3  
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director  
Corequisites: None  
This course presents a study of journalistic news, feature, and sports writing. Emphasis is placed on basic news writing techniques and on related legal and ethical issues. Upon completion, students should be able to gather, write, and edit news, feature, and sports articles. Note: This course is a Writing Intensive Elective for UNCC.

**JOU 216 Writing for Mass Media** 2 2 3  
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director  
Corequisites: None  
This course is an introduction to news writing for newspapers and other print media including the techniques of news gathering, reporting, and interviewing. Emphasis is placed on basic methods of gathering information, conducting interviews, organizing a story, writing leads, writing clear, concise copy, and upon developing research skills. Upon completion, students should be able to write clear, concise, accurate, complete, balanced and readable news stories according to guidelines set by industry standards.

**JOU 217 Feature/Editorial Writing** 2 2 3  
Prerequisites: ENG 111 with a grade of C or higher, or consent of division director and JOU 110 with a grade of C or higher, or consent of division director  
Corequisites: None  
This course covers the basics of persuasive writing for community newspapers and other print media. Emphasis is placed on writing features, reviews, and editorials including audience analysis, appropriate language, effective supporting details, completeness, and accuracy. Upon completion, students should be able to write effective feature stories, reviews, and editorials.

**LEX - Legal Education**

**LEX 110 Introduction to Paralegal Study** 3 0 3  
Prerequisites: A C or better in Eng 111 or an official copy of a transcript awarding a bachelor’s degree  
Corequisites: None  
This course introduces the paralegal profession and the legal system. Topics include regulations and concepts, ethics, case analysis, legal reasoning, career opportunities, certification, professional organizations, and other related topics. Upon completion, students should be able to explain the role of the paralegal and identify the skills, knowledge, and ethics required of legal assistants.

**LEX 120 Legal Research/Writing I** 2 2 3  
Prerequisites: LEX 110, 120, 140 (recommended)  
Corequisites: None  
This course introduces the techniques of legal research and writing. Emphasis is placed on locating, analyzing, applying, and updating sources of law; effective legal writing, including proper citation; and the use of electronic research methods. Upon completion, students should be able to perform legal research and writing assignments using techniques covered in the course.

**LEX 121 Legal Research/Writing II** 2 2 3  
Prerequisites: LEX 120  
Corequisites: None  
This course covers advanced topics in legal research and writing. Topics include more complex legal issues and assignments involving preparation of legal memos, briefs, and other documents and the advanced use of electronic research methods. Upon completion, students should be able to perform legal research and writing assignments using techniques covered in the course.

**LEX 130 Civil Injuries** 3 0 3  
Prerequisites: LEX 110, 120, 140 (recommended)  
Corequisites: None  
This course covers traditional tort concepts and the evolving body of individual rights created by statute. Topics include intentional and non-intentional torts with emphasis on negligence, strict liability, civil rights, workplace and environmental liability, remedies, and damages. Upon completion, students should be able to recognize, explain, and evaluate elements of civil injuries and related defenses.

**LEX 140 Civil Litigation I** 3 0 3  
Prerequisites: A C or better in Eng 111 or an official copy of a transcript awarding a bachelor’s degree  
Corequisites: None  
This course introduces the structure of the legal system and the rules governing civil litigation. Emphasis is placed on jurisdiction and the state and federal rules of civil procedure and rules of evidence. Upon completion, students should be able to assist an attorney in the preparation of a civil case.
LEX 141 Civil Litigation II 2 2 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers the paralegal’s role in the civil litigation process. Topics include investigation, interviewing, pleadings, motions, discovery, and trial and appellate procedures. Upon completion, students should be able to assist an attorney in preparing, directing, and organizing documents for civil litigation.

LEX 150 Commercial Law 2 2 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers legally enforceable agreements, forms of organization, and selected portions of the Uniform Commercial Code. Topics include drafting and enforcement of contracts, leases, and related documents and selection and implementation of business organization forms, sales, and commercial papers. Upon completion, students should be able to apply the elements of a contract, prepare various business documents, and understand the role of commercial paper.

LEX 160 Criminal Law & Procedure 2 2 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course introduces substantive criminal law and procedural rights of the accused. Topics include elements of state/federal crimes, defenses, constitutional issues, pre-trial process, and other related topics. Upon completion, students should be able to explain elements of specific crimes and assist an attorney in preparing a criminal case.

LEX 170 Administrative Law 2 0 2
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers the scope, authority, and regulatory operations of various federal, state, and local administrative agencies. Topics include social security, workers’ compensation, unemployment, zoning, and other related topics. Upon completion, students should be able to research sources of administrative law, investigate, and assist in representation of clients before administrative agencies.

LEX 180 Case Analysis & Reasoning 1 2 2
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: LEX 120
This course covers the techniques of reading and applying legal opinions and the skills of case analysis. Emphasis is placed on the components of opinions and on types of legal writing. Upon completion, students should be able to read, analyze, and brief opinions and prepare legal memoranda, briefs, and other legal documents.

LEX 192 Selected Topics in Paralegal I 2 0 2
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

LEX 193 Selected Topics in Paralegal II 3 0 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

LEX 200 Wills, Estates, & Trusts 2 2 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers various types of wills, trusts, probate, estate administration, and intestacy. Topics include types of wills and execution requirements, caveats and dissents, intestate succession, inventories and accountings, distribution and settlement, and other related topics. Upon completion, students should be able to draft simple wills, prepare estate forms, understand administration of estates including taxation, and explain terms regarding trusts.

LEX 210 Corporate Law 2 0 2
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers the legal aspects of forming, operating, and maintaining a business. Emphasis is placed on the business corporation with additional coverage of sole proprietorships and partnerships. Upon completion, students should be able to draft basic partnership and corporate documents and file these documents as required.

LEX 211 Real Property II 1 4 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers various types of wills, trusts, probate, estate administration, and intestacy. Topics include types of wills and execution requirements, caveats and dissents, intestate succession, inventories and accountings, distribution and settlement, and other related topics. Upon completion, students should be able to draft simple wills, prepare estate forms, understand administration of estates including taxation, and explain terms regarding trusts.

LEX 212 Bankruptcy & Collections 3 0 3
Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course provides an overview of the laws of bankruptcy and the rights of creditors and debtors. Topics include bankruptcy procedures and estate management, attachment, claim and delivery, repossession, foreclosure, collection, garnishment, and post-judgment collection procedure. Upon completion, students...
should be able to prepare and file bankruptcy forms, collection letters, statutory liens, and collection of judgments.

**LEX 270 Law Office Management & Technology**

Prerequisites: LEX 110, LEX 120, LEX 140 (recommended), CIS 110
Corequisites: None
This course provides an overview of law office management and organization. Topics include office forms, filing systems, billing/time keeping, computer systems, calendar systems, library administration, case management, office/personnel procedures, ethics, and technology.

**LEX 280 Ethics & Professionalism**

Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course reinforces legal ethics and the role of the paralegal in a professional work environment. Topics include a review of ethics, employment opportunities, and search techniques; paralegal certification; and other related topics. Upon completion, students should be able to understand the role of a professional paralegal and identify authority that can properly be delegated by an attorney.

**LEX 283 Investigations**

Prerequisites: LEX 110
Corequisites: None
This course covers various aspects of civil and criminal investigation. Topics include locating witnesses, interviewing techniques, obtaining records, sketching and photographic accident scenes, collecting and preserving evidence, and preparation of exhibits for trial. Upon completion, students should be able to locate witnesses, prepare questionnaires, interview witnesses, obtain criminal/motor vehicle/medical/accident records, sketch scenes, and prepare exhibits.

**LEX 285 Workers’ Comp Law**

Prerequisites: LEX 110, LEX 120, LEX 140 (recommended)
Corequisites: None
This course covers the process of initiating and handling workers’ compensation claims. Emphasis is placed on reviewing and drafting relevant Industrial Commission forms. Upon completion, students should be able to interview clients, gather information, and draft documents related to workers’ compensation claims.

**MAC - Machining**

**MAC 111 Machine Technology I**

Prerequisites: None
Corequisites: None
This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling. This is the first part of a course sequence and emphasizes engine lathe set-up and operation.

**MAC 111X Machine Technology I**

Prerequisites: None
Corequisites: None
This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling. This is the second part of a course sequence and emphasizes engine lathe set-up and operation.

**MAC 112 Machining Technology II**

Prerequisites: MAC 114, MAC 111X, MAC 111Y
Corequisites: None
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling. This is the first part of a course sequence, and emphasizes layout and hand tool procedures.

**MAC 112X Machining Technology II**

Prerequisites: MAC 114
Corequisites: None
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling. This is the first part of a course sequence, and emphasizes layout and hand tool procedures.

**MAC 112Y Machining Technology II**

Prerequisites: MAC 114, MAC 111X, MAC 111Y
Corequisites: None
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling. This is the second part of a course sequence, and emphasizes layout and hand tool procedures.

**MAC 113 Machining Technology III**

Prerequisites: MAC 112Y, MAC 111X, MAC 111Y
Corequisites: None
This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Corequisites</th>
<th>Prerequisites</th>
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<td>MAC 113X</td>
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<td>MAC 111X, MAC 111Y, MAC 112Y</td>
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<td>MAC 113Y</td>
<td>Machining Technology III</td>
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<td>MAC 111X, MAC 111Y, MAC 112Y</td>
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<td>MAC 114</td>
<td>Introduction to Metrology</td>
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<td>MAC 121</td>
<td>Introduction to Computer Numerical Control</td>
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<tr>
<td>MAC 122</td>
<td>Computer Numerical Control Turning</td>
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<td>MAC 124</td>
<td>Computer Numerical Control Milling</td>
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<tr>
<td>MAC 131</td>
<td>Blueprint Reading / Machine I</td>
<td>1 2 2</td>
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<tr>
<td>MAC 132</td>
<td>Blueprint Reading / Machine II</td>
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<tr>
<td>MAC 151</td>
<td>Machining Calculations</td>
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<tr>
<td>MAC 152</td>
<td>Advanced Machining Calculations</td>
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<tr>
<td>MAC 222</td>
<td>Advanced Computer Numerical Control Turning</td>
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<tr>
<td>MAC 224</td>
<td>Advanced Computer Numerical Control Milling</td>
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<tr>
<td>MAC 231</td>
<td>Computer Numerical Control Graphics Programming: Turning</td>
<td>1 4 3</td>
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<tr>
<td>MAC 232</td>
<td>Computer Numerical Control Graphics Programming: Milling</td>
<td>1 4 3</td>
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</table>

This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications. This course emphasizes project building.

This course introduces Computer Numerical Control graphics programming and concepts for machining center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, students should be able to develop a job plan using CAM software, including machine selection, tool selection, operational sequence, speed, feed, and cutting depth. Transfer machine code from CAM Graphics to the CNC turning center.
applications. Emphasis is placed on developing a shape file in a graphics CAM system and transferring coded information from CAM graphics to the CNC milling center. Upon completion, students should be able to develop a complete job plan using CAM software to create a multi-axis CNC program.

**MAT - Mathematics**

Initial student placement in Mathematics courses is based on the college’s placement testing policies and procedures.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 101</td>
<td>Applied Math I</td>
<td>2</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisites: MAT 060 with a grade of C or better, or placement test score, or permission of the Division Director.</td>
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<td></td>
<td>Corequisites: None</td>
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<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>2</td>
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<td>Prerequisites: MAT 070 with a grade of D or better, or placement test score, or permission of the Division Director.</td>
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<td>Corequisites: None</td>
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<tr>
<td>MAT 121</td>
<td>Algebra/Trigonometry I</td>
<td>2</td>
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<td>3</td>
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<td></td>
<td>Prerequisites: MAT 070 with a grade of C or better, or placement test score, or permission of the Division Director.</td>
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<td></td>
<td>Corequisites: None</td>
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<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
<td>2</td>
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<td>3</td>
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<td></td>
<td>Prerequisites: MAT 121 with a grade of C or better, or permission of the Division Director.</td>
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<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

**MAT 140 Survey of Mathematics**

Prerequisites: MAT 070 with a grade of C or better, or placement test score, or permission of the Division Director.

Corequisites: None

This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for AA, AFA, and AGE degree programs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MAT 155</td>
<td>Statistical Analysis</td>
<td>3</td>
<td>0</td>
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<tr>
<td></td>
<td>Prerequisites: MAT 080 with a grade of C or better, or permission of the Division Director or placement score.</td>
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<tr>
<td></td>
<td>Corequisites: MAT 155A</td>
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</tbody>
</table>

This course is an introduction to descriptive and inferential statistics. Topics include sampling, distributions, plotting data, central tendency, dispersion, Central Limits Theorem, confidence intervals, hypothesis testing, correlations, regressions, and multinomial experiments. Upon completion, students should be able to describe data and test inferences about populations using sample data. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for all associate degree programs.

**MAT 155A Statistical Analysis Lab**

Corequisites: MAT 155

This course is a laboratory for MAT 155. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 161</td>
<td>College Algebra</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080 with a grade of C or better, or placement test score, or permission of the Division Director.</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</table>

**MAT 171 Precalculus Algebra**

Prerequisites: MAT 080 with a grade of C or better, or placement test score, or permission of the Division Director.

Corequisites: None

This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is
placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

MAT 172 Precalculus Trigonometry 3 0 3
Prerequisites: MAT 171 with a grade of C or better, or permission of the Division Director
Corequisites: None
This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

MAT 175 Precalculus 4 0 4
Prerequisites: Placement test score, or permission of the Division Director
Corequisites: None
This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for AS degree programs.

MAT 223 Applied Calculus 2 2 3
Prerequisites: MAT 122 with a grade of C or better, or permission of the Division Director
Corequisites: None
This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results. This course is intended for AS degree programs.

MAT 263A Brief Calculus Lab 0 2 1
Corequisites: MAT 263
This course is a laboratory for MAT 263. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MAT 271 Calculus I 3 2 4
Prerequisites: MAT 171 and MAT 172, or MAT 175 with a grade of C or better, or permission of the Division Director, or placement test score
Corequisites: None
This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for AS degree programs.

MAT 272 Calculus II 3 2 4
Prerequisites: MAT 271 with a grade of C or better, or permission of the Division Director
Corequisites: None
This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for AS degree programs.

MAT 273 Calculus III 3 2 4
Prerequisites: MAT 272 with a grade of C or better, or permission of the Division Director
Corequisites: None
This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics. This course is intended for AS degree programs.

MAT 285 Differential Equations 3 0 3
Prerequisites: MAT 272 or MAT 273 with a grade of C or better, or permission of the Division Director
Corequisites: None
This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first-order, linear, higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model
physical phenomena, solve the equations, and use the solutions to analyze the phenomena. This course is intended for AS degree programs.

**MAT - Developmental Studies**

*(MAT 050-080)*

See Pre-College section of this catalog.

### MEC - Mechanical Engineering Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MEC 111</td>
<td>Machine Processes 1</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(Conventional)</td>
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<tr>
<td></td>
<td>Prerequisites: None</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances. *This is the first part of a course sequence and emphasizes conventional machine tool work.*

| MEC 111X   | Machine Processes 1 (CNC)            | 1       | 2   | 2      |
|            |                                     |         |     |        |
|            | Prerequisites: None                  |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances. *This is the first part of a course sequence and emphasizes conventional machine tool work.*

| MEC 111Y   | Machine Processes 1 (CNC)            | 0       | 2   | 1      |
|            |                                     |         |     |        |
|            | Prerequisites: MEC 111X              |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerance. *This is the second part of a course sequence and emphasizes CNC programming and production.*

| MEC 161    | Manufacturing Processes I            | 3       | 0   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: None                  |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course provides the fundamental principles of value-added processing materials into usable forms for the customer. Topics include material properties and traditional and non-traditional manufacturing processes. Upon completion, students should be able to specify appropriate manufacturing processing for common engineering materials.

| MEC 172    | Introduction to Metallurgy          | 2       | 2   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: None                  |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course covers the production, properties, testing, classification, microstructure, and heat treating effects of ferrous and non-ferrous metals. Topics include the iron-carbon phase diagram, ITT diagram, ANSI code, quenching, senescing, and other processes concerning metallurgical transformations. Upon completion, students should be able to understand the iron-carbon phase diagram, ITT diagram, microstructure images, and other phenomena concerning the behavior of metals.

| MEC 180    | Engineering Materials               | 2       | 3   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: ENG 114              |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course covers the physical and mechanical properties of materials. Topics include testing, heat treating, ferrous and non-ferrous metals, plastics, composites, and material selection. Upon completion, students should be able to specify basic tests and properties and select appropriate materials on the basis of specific properties.

| MEC 210    | Applied Mechanics                   | 2       | 2   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: PHY 131 or PHY 151   |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course is a study of forces, stresses, and strains acting upon mechanical components. Topics include static equilibrium; normal, shear, and bending stresses; mathematical and graphical solution technique; and the relationship between stress and strain. Upon completion, students should be able to demonstrate proficiency in analyzing the forces, stresses, and strains common to applications in the workplace.

| MEC 250    | Statics and Strength of Materials   | 4       | 3   | 5      |
|            |                                     |         |     |        |
|            | Prerequisites: PHY 131 or PHY 151   |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course covers the concepts and principles of statics and stress analysis. Topics include systems of forces on structures in equilibrium and analysis of stresses and strains on these components. Upon completion, students should be able to analyze forces and the results of stresses and strains on structural components.

| MEC 260    | Fundamentals of Machine Design      | 2       | 3   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: MEC 210 or MEC 250   |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make components selections from manufacturers’ catalogs.

| MEC 265    | Fluid Mechanics                     | 2       | 2   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: PHY 131, PHY 151, or PHY 110 |       |   |        |
|            | Corequisites: None                   |         |     |        |

This course covers the physical behavior of fluids and fluid systems. Topics include fluid statics and dynamics, laminar and turbulent flow, Bernoulli’s Equation, components, applications, and other related topics. Upon completion, students should be able to apply fluid power principles to practical applications.

| MEC 267    | Thermal Systems                     | 2       | 2   | 3      |
|            |                                     |         |     |        |
|            | Prerequisites: PHY 131 or PHY 151   |         |     |        |
|            | Corequisites: None                   |         |     |        |

This course introduces the fundamental laws of thermodynamics. Topics include work and energy, open and closed systems, and heat engines. Upon completion, students should be able to demonstrate a knowledge of the laws and principles that apply to thermal power.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
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<tr>
<td>MED 110 Orientation to Medical Assisting</td>
<td>1 0 0 1</td>
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<tr>
<td>MED 114 Professional Interaction in Health Care</td>
<td>1 0 0 1</td>
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<tr>
<td>MED 116 Introduction to A &amp; P</td>
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<td>MED 118 Medical Law and Ethics</td>
<td>2 0 0 2</td>
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<tr>
<td>MED 120 Survey of Medical Terminology</td>
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<td>MED 121 Medical Terminology I</td>
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<tr>
<td>MED 122 Medical Terminology II</td>
<td>3 0 0 3</td>
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</tbody>
</table>

**MED - Medical Assisting**

- **MED 110 Orientation to Medical Assisting**
  - Prerequisites: Division approval
  - Corequisites: None
  - This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.

- **MED 114 Professional Interaction in Health Care**
  - Prerequisites: Division approval
  - Corequisites: None
  - This course is designed to identify various patient behaviors encountered in the medical setting. Emphasis is placed on stressors related to illness, cultural influences, death and dying, and needs specific to patients. Upon completion, students should be able to utilize appropriate methods of verbal and nonverbal communication with empathy and impartiality.

- **MED 116 Introduction to A & P**
  - Prerequisites: Division approval
  - Corequisites: None
  - This course introduces basic anatomy and physiology. Emphasis is placed on the relationship between body structure and function and the procedures common to health care. Upon completion, students should be able to identify body system components and functions relating to the delivery of health care.

- **MED 118 Medical Law and Ethics**
  - Prerequisites: Division approval
  - Corequisites: None
  - This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.

- **MED 120 Survey of Medical Terminology**
  - Prerequisites: Division approval
  - Corequisites: None
  - This course introduces the vocabulary abbreviations and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell and define accepted medical terms.

- **MED 121 Medical Terminology I**
  - Prerequisites: None
  - Corequisites: None
  - This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

- **MED 122 Medical Terminology II**
  - Prerequisites: Division approval, MED 121
  - Corequisites: None
  - This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
<th>Corequisites</th>
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<tr>
<td>MED 130</td>
<td>Administrative Office Procedures I</td>
<td>1</td>
<td>2</td>
<td>Corequisites: Division approval, MED 121</td>
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<tr>
<td>MED 131</td>
<td>Administrative Office Procedures II</td>
<td>1</td>
<td>2</td>
<td>Corequisites: Division approval, MED 121, MAT 115</td>
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<tr>
<td>MED 134</td>
<td>Medical Transcription</td>
<td>2</td>
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<td>Corequisites: Division approval, MED 116, MED 121</td>
</tr>
<tr>
<td>MED 138</td>
<td>Infection/Hazard Control</td>
<td>2</td>
<td>0</td>
<td>Corequisites: None</td>
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<tr>
<td>MED 140</td>
<td>Exam Room</td>
<td>3</td>
<td>4</td>
<td>Corequisites: Division approval, MED 110, MED 112</td>
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<tr>
<td>MED 150</td>
<td>Laboratory Procedures I</td>
<td>3</td>
<td>4</td>
<td>Corequisites: Division approval, MED 110, MED 112</td>
</tr>
</tbody>
</table>

**MED 130 Administrative Office Procedures I**

Prerequisites: Division approval, MED 121
Corequisites: None

This course introduces medical office administrative procedures. Topics include appointment processing, written and oral communications, medical records, patient orientation, and safety. Upon completion, students should be able to perform basic administrative skills within the medical environment.

**MED 131 Administrative Office Procedures II**

Prerequisites: Division approval, MED 121, MAT 115
Corequisites:

This course provides medical office procedures in both economic and management skills. Topics include physical plant maintenance, equipment and supplies, liability coverage, medical economics, and introductory insurance procedures. Upon completion, students should be able to manage the economics of the medical office and supervise personnel.

**MED 134 Medical Transcription**

Prerequisites: Division approval, MED 116, MED 121, or BIO 163 or BIO 168/169
Corequisites: None

This course provides the basic knowledge, understanding, and skills required to complete medical reports and transcribe medical dictation. Emphasis is placed on correct punctuation, capitalization, and spelling. Upon completion, students should be able to demonstrate competence in medical transcription.

**MED 138 Infection/Hazard Control**

Prerequisites: Division approval
Corequisites: None

This course introduces the student to infection and hazard control procedures necessary for the healthcare worker. Topics include introduction to microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws. *(State ID Course Approval Number: Medical 96-M-94-1010)*

**MED 140 Exam Room Procedures I**

Prerequisites: Division approval, MED 110, MED 112, MED 114, MED 116, MED 118, MED 121, MED 122, MED 130, MED 131, MED 134, MED 138
Corequisites: MED 150

This course provides instruction in clinical examining room procedures. Topics include asepsis, infection control, assisting with exams and treatment, patient education, preparation and administration of medications, EKG, vital signs, and medical emergencies. Upon completion, students should be able to demonstrate competence in exam room procedures.

**MED 150 Laboratory Procedures I**

Prerequisites: Division approval, MED 110, MED 112, MED 114, MED 116, MED 118, MED 121, MED 122, MED 130, MED 131, MED 134, MED 138

Prerequisites: Division approval
Corequisites: None

This course focuses on major drug groups, including their side effects, interactions, methods of administration, and proper documentation. Emphasis is placed on the theory of drug administration. Upon completion, students should be able to identify, spell, recognize side effects of, and document the most commonly used medications in a physician’s office.
MED 274 Diet Therapy / Nutrition 3 0 0 3
Prerequisites: Division approval
Corequisites: None
This course introduces the basic principles of nutrition as they relate to health and disease. Topics include basic nutrients, physiology, dietary deficiencies, weight management, and therapeutic nutrition in wellness and disease. Upon completion, students should be able to interpret clinical and dietary data and provide patient counseling and education.

MED 276 Patient Education 1 2 0 2
Prerequisites: MED110, MED112, MED114, MED116, MED118, MED121, MED122, MED130, MED131, MED134, MED138
Corequisites:
This course is designed to provide communication skills, basic education principles, and knowledge of available community resources and to apply this knowledge to the clinical setting. Emphasis is placed on identifying appropriate community resources, developing patient education materials, and perfecting written and oral communication skills. Upon completion, students should be able to instruct, communicate effectively, and act as a liaison between the patient and community agencies.

MKT - Marketing and Retailing

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MKT 120</td>
<td>Principles of Marketing</td>
<td>3</td>
<td>0</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
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<tr>
<td>This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.</td>
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</table>

| MKT 121     | Retailing                                  | 3       | 0   | 3      |
| Prerequisites: |                                       |         |     |        |
| Corequisites: | None                                      |         |     |        |
| This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing. |

| MKT 122     | Visual Merchandising                       | 3       | 0   | 3      |
| Prerequisites: |                                       |         |     |        |
| Corequisites: | None                                      |         |     |        |
| This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program. |

| MKT 123     | Fundamentals of Selling                    | 3       | 0   | 3      |
| Prerequisites: |                                       |         |     |        |
| Corequisites: | None                                      |         |     |        |
| This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. |

Upon completion, students should be able to demonstrate an understanding of the techniques covered.

MKT 220 Advertising and Sales Promotion 3 0 3
Prerequisites: None
Corequisites: None
This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

MKT 221 Consumer Behavior 3 0 3
Prerequisites: None
Corequisites: None
This course is designed to describe consumer behavior as applied to the exchange processes involved in acquiring, consuming, and disposing of goods and services. Topics include an analysis of basic and environmental determinants of consumer behavior with emphasis on the decision-making process. Upon completion, students should be able to analyze concepts related to the study of the individual consumer.

MKT 223 Customer Service 3 0 3
Prerequisites: None
Corequisites: None
This course stresses the importance of customer relations in the business world. Emphasis is placed on learning how to respond to complex customer requirements and to efficiently handle stressful situations. Upon completion, students should be able to demonstrate the ability to handle customer relations.

MKT 224 International Marketing 3 0 3
Prerequisites: MKT 120
Corequisites: None
This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

MKT 225 Marketing Research 3 0 3
Prerequisites: MKT 120
Corequisites: None
This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

MKT 227 Marketing Applications 3 0 3
Prerequisites: MKT 120
Corequisites: None
This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small-group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.
**MKT 228 Service Marketing**  
Lecture Lab Clinic Credit: 3 0 3  
Prerequisites: None  
Corequisites: None  
This course is designed to define service marketing, demonstrate its importance, and note its special characteristics. Topics include basic building blocks of service marketing, distinctive aspects of services, and applications of service marketing mix. Upon completion, students should be able to demonstrate a basic understanding of the marketing mix as it applies to the service industry.

**MKT 229 Special Events Production**  
Lecture Lab Clinic Credit: 2 0 2  
Prerequisites: None  
Corequisites: None  
This course introduces the different objectives of various special events and the procedures and elements necessary for successful promotional activity. Emphasis is placed on planning, budgeting, promoting, and coordinating activities. Upon completion, students should be able to utilize the elements studied in the production of special events.

**MKT 230 Public Relations**  
Lecture Lab Clinic Credit: 3 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces public relations as it affects communications, strategic planning, and management of the organization. Topics include basic principles and functions of management that guide public relations activities as applied to businesses, services, institutions, and associations. Upon completion, students should be able to utilize the communications, evaluation, planning, and research activities of the public relations professional.

**MLT - Medical Laboratory Technology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
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<td>MLT 120 Hematology / Hemostasis I</td>
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<td>MLT 126 Immunology and Serology</td>
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<td>MLT 127 Transfusion Medicine</td>
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<td>MLT 130 Clinical Chemistry I</td>
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<td>MLT 216 Professional Issues</td>
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<td>MLT 220 Hematology / Hemostasis II</td>
<td>2</td>
<td>3</td>
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</table>

Upon completion, students should be able to demonstrate theoretical comprehension of hematology/hemostasis, perform diagnostic techniques, and correlate laboratory findings with disorders.

This course introduces the immune system and response and basic concepts of antigens, antibodies, and their reactions. Emphasis is placed on basic principles of immunologic and serodiagnostic techniques and concepts of cellular and humoral immunity in health and disease. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing and interpreting routine immunologic and serodiagnostic procedures.

This course introduces the blood group systems and their applications in transfusion medicine. Emphasis is placed on blood bank techniques including blood grouping and typing, pretransfusion testing, donor selection and processing, and blood component preparation and therapy. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing/interpreting routine blood bank procedures and recognizing/resolving common problems.

This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

This course introduces basic techniques and safety procedures in clinical microbiology. Emphasis is placed on the morphology and identification of common pathogenic organisms, aseptic technique, staining techniques, and usage of common media. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting basic clinical microbiology procedures.

This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.
This course covers the theories and techniques used in the advanced analysis of human blood cells and hemostasis. Emphasis is placed on the study of hematologic disorders, abnormal cell development and morphology, and related testing. Upon completion, students should be able to demonstrate a theoretical comprehension and application of abnormal hematology and normal and abnormal hemostasis.

**MNT 240 Special Clinical Microbiology**

- Prerequisites: MLT 140
- Corequisites: None

This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

**MLT 251 Medical Laboratory Technology Practicum I**

- Prerequisites: MLT 110 and Permission
- Corequisites: None

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.

**MLT 267 Medical Laboratory Technology Practicum II**

- Prerequisites: Permission
- Corequisites: None

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.

**MLT 277 Medical Laboratory Technology Practicum III**

- Prerequisites: Permission
- Corequisites: None

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.

**MNT - Maintenance**

**MNT 110 Intro to Maintenance Procedures**

- Prerequisites: None
- Corequisites: None

This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

**MNT 111 Maintenance Practices**

- Prerequisites: MNT 110
- Corequisites: None

This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

**MNT 150 Basic Building Maintenance**

- Prerequisites: None

This course introduces the basic skills of building maintenance. Topics include basic carpentry and masonry skills including forming, framing, laying block to a line, repairing, and other related topics. Upon completion, students should be able to perform basic carpentry and masonry skills in a maintenance setting.

**MNT 220 Rigging & Moving**

- Prerequisites: None

This course covers the principles of safe rigging practices for handling, placing, and moving heavy machinery and equipment. Topics include safety estimation, positioning of equipment slings, rollers, jacks, levers, dollies, ropes, chains, padding, and other related topics. Upon completion, students should be able to relocate and set up equipment safely using accepted rigging practices.

**MNT 230 Pumps & Pumping Systems**

- Prerequisites: MLT 140

This course covers pump installation and maintenance and related valves and piping systems. Topics include various types of pump systems and their associated valves, piping requirements, and other related topics. Upon completion, students should be able to select and install pump and piping systems and demonstrate proper maintenance and troubleshooting procedures.

**MNT 240 Industrial Equipment Troubleshoot**

- Prerequisites: ELC 112 or ELS 131
- Corequisites: None

This course covers the various service procedures, tools, instruments, and equipment necessary to analyze and repair typical industrial equipment. Emphasis is placed on electro-mechanical and fluid power equipment troubleshooting and repair, including common techniques and procedures. Upon completion, students should be able to troubleshoot and repair industrial equipment.

**MUS - Music**

**MUS 110 Music Appreciation**

- Prerequisites: None

This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective.
Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**MUS 111 Fundamentals of Music**  
3 0 3  
Prerequisites:  
Corequisites: None  
This course is an introductory course for students with little or no music background. Emphasis is placed on music notation, rhythmic patterns, scales, key signatures, intervals, and chords. Upon completion, students should be able to demonstrate an understanding of the rudiments of music.

**MUS 112 Introduction to Jazz**  
3 0 3  
Prerequisites:  
Corequisites: None  
This course introduces the origins and musical components of jazz and the contributions of its major artists. Emphasis is placed on the development of discriminating listening habits, as well as the investigation of the styles and structural forms of the jazz idiom. Upon completion, students should be able to demonstrate skills in listening and understanding this form of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**MUS 121 Music Theory I**  
3 2 4  
Prerequisites: MUS 111 or permission  
Corequisites: None  
This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above.

**MUS 122 Music Theory II**  
3 2 4  
Prerequisites: MUS 121  
Corequisites: None  
This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above.

**MUS 123 Music Composition**  
0 2 1  
Prerequisites: MUS 111 or MUS 121  
Corequisites: None  
This course provides a study of elementary forms and traditional approaches to the organization of melody, harmony, rhythm, etc. in musical composition. Emphasis is placed on using musical notation to create new musical works. Upon completion, students should be able to create short musical works using appropriate musical notation.

**MUS 131 Chorus I**  
0 2 1  
Prerequisites:  
Corequisites: None  
This course provides an opportunity to gain experience singing in a chorus. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

**MUS 132 Chorus II**  
0 2 1  
Prerequisites: MUS 131  
Corequisites: None  
This course provides a continuation of studies begun in MUS 131. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

**MUS 135 Jazz Ensemble I**  
0 2 1  
Prerequisites:  
Corequisites: None  
This course provides an opportunity for those who play an appropriate instrument to gain experience playing in a jazz ensemble. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles of jazz literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course provides the opportunity for development of jazz improvisational skills using chords related to 12-bar blues and simple songs using II-V-I progressions.

**MUS 136 Jazz Ensemble II**  
0 2 1  
Prerequisites: MUS 135  
Corequisites: None  
This course is a continuation of MUS 135. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles and periods of jazz literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course provides opportunities for learning to improvise over chord changes inherent in each jazz style studied.

**MUS 141 Ensemble I**  
0 2 1  
Prerequisites:  
Corequisites: None  
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance.

**MUS 141E Ensemble I**  
0 2 1  
Prerequisites:  
Corequisites: None  
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 141E is Early Music Consort I.

**MUS 141G Ensemble I**  
0 2 1  
Prerequisites: Audition  
Corequisites: None  
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 141G is guitar ensemble I. This course has been approved by the Transfer Advisory Committee.
MUS 141P Ensemble I  0 2 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to participate in ensemble playing leading to performance. MUS 141P is Piano Ensemble I.

MUS 141R Ensemble I  0 2 1
Prerequisites: MUS 141
Corequisites: None
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 141R is Recorder Ensemble I.

MUS 142P Ensemble II  0 2 1
Prerequisites: MUS 141P
Corequisites: None
This course is a continuation of MUS 141P. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to participate in ensemble playing leading to performance. MUS 142P is Piano Ensemble II.

MUS 142G Ensemble II  0 2 1
Prerequisites: MUS 141G
Corequisites: None
This course is a continuation of MUS 141G. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 142G is Guitar Ensemble II.

MUS 151G Class Music I  0 2 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to participate in ensemble playing leading to performance. MUS 151G is Beginning Guitar in which focus is on reading guitar music in first position, playing chords in first position, and transposition to selected keys.

MUS 151S Class Music I  0 2 1
Prerequisites: None
Corequisites: None
This course provides group instruction in skills and techniques of the particular instrument or voice for those with little or no previous experience. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. MUS 151S is Sight singing which is designed to acquaint beginning students with the principles of solfége and pitch organization, rhythmic patterns, and basic harmonic progression.

MUS 151V Class Music I  0 2 1
Prerequisites: None
Corequisites: None
This course provides group instruction in skills and techniques of the particular instrument or voice for those with little or no previous experience. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. MUS 151V is Class Voice I for beginning singers and will focus on correct posture, breathing, support for the respiration of vowels, and proper diction.

MUS 152G Class Music II  0 2 1
Prerequisites: MUS 151G
Corequisites: None
This course is a continuation of MUS 151G. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. MUS 152G is Intermediate Guitar in
which skills emphasized include improving ability to read a single line on the guitar, reading block and arpeggiated chords, and playing both a melody and arpeggiated accompaniment.

**MUS 152P Class Music II** 0 2 1  
Prerequisites: MUS 151P or Division Consent  
Corequisites: None  
This course is a continuation of MUS 151P. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. MUS 152P is level II of Beginning Piano in which piano compositions, scales, and chords studied will include the keys of C, G, and F major, and A and D minor.

**MUS 152V Class Music II** 0 2 1  
Prerequisites: MUS 151V  
Corequisites: None  
This course is a continuation of MUS 151V. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. MUS 152V is Class Voice II in which study of the International Phonetic alphabet will facilitate the performance of repertoire which will include art songs, arias, and other songs.

**MUS 161B-W Applied Music I** 1 2 2  
Prerequisites: Audition  
Corequisites: None  
This course provides an applied laboratory study on the processes involved in the production of an opera. Topics include fundamental practices, principles, and techniques associated with producing operas of various musical periods, with an emphasis on vocal technique. Upon completion, students should be able to participate in an assigned position in a college opera production. *This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.*

**MUS 162B-W Applied Music II** 1 2 2  
Prerequisites: MUS 161B-W  
Corequisites: None  
This course provides an applied laboratory study on the processes involved in the production of an opera. Topics include fundamental practices, principles, and techniques associated with producing operas of various musical periods, with an emphasis on musical/language production. Upon completion, students should be able to participate in an assigned position in a college opera production. *This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.*

**MUS 173 Opera Production I** 0 9 3  
Prerequisites: None  
Corequisites: None  
This course provides an applied laboratory study on the processes involved in the production of an opera. Topics include fundamental practices, principles, and techniques associated with producing operas of various musical periods, with an emphasis on vocal technique. Upon completion, students should be able to participate in an assigned position in a college opera production. *This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.*

**MUS 174 Opera Production II** 0 9 3  
Prerequisites: MUS 173  
Corequisites: None  
This course provides an applied laboratory study on the processes involved in the production of an opera. Topics include fundamental practices, principles, and techniques associated with producing operas of various musical periods, with an emphasis on musical/language production. Upon completion, students should be able to participate in an assigned position in a college opera production. *This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.*

**MUS 191 Selected Topics in Music** 0-1 0-3 1  
Prerequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 192 Selected Topics in Music** 0-2 0-6 2  
Prerequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 193 Selected Topics in Music** 1-3 0-6 3  
Prerequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 195 Seminar in Music** 0-1 0-3 1  
Prerequisites: None  
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 196 Seminar in Music** 0-2 0-6 2  
Prerequisites: None  
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 197 Seminar in Music** 1-3 0-6 3  
Prerequisites: None  
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 198 Seminar in Music** 3 0 3  
Prerequisites: MUS 110  
Corequisites: None  
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 210 History of Rock Music** 3 0 3  
Prerequisites: MUS 110  
Corequisites: None  
This course is a survey of Rock music from the early 1950’s to the present. Emphasis is placed on musical groups, soloists, and styles related to the evolution of this idiom and on related historical and social events. Upon completion, students should be able to identify specific styles and to explain the influence of selected performers within their respective eras.

**MUS 213 Opera and Musical Theatre** 3 0 3  
Prerequisites: None  
This course covers the origins and development of opera and musical theatre from the works of Claudio Monteverdi to the present. Emphasis is placed on how the structure and components of opera and musicals affect dramaturgy through listening and analysis. Upon completion, students should be able to demonstrate analytical and listening skills in understand-
ing both opera and the musical. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 221 Music Theory III  
Prerequisites: MUS 122  
Corequisites: None  
This course is a continuation of MUS 122. Emphasis is placed on altered and chromatic harmony, common practice era compositional techniques and forms, and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above.

MUS 222 Music Theory IV  
Prerequisites: MUS 221  
Corequisites: None  
This course is a continuation of studies begun in MUS 221. Emphasis is placed on common practice era compositional techniques and forms, 20th century practices, ear-training, and sight-singing. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance.

MUS 231 Chorus III  
Prerequisites: MUS 132  
Corequisites: None  
This course is a continuation of MUS 132. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 232 Chorus IV  
Prerequisites: MUS 231  
Corequisites: None  
This course is a continuation of MUS 231. Emphasis is placed on vocal techniques and the study of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 235 Jazz Ensemble III  
Prerequisites: MUS 136  
Corequisites: None  
This course is a continuation of MUS 136. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles and periods of jazz literature. Upon completion, students should be able to demonstrate skills needed in ensemble playing leading to performance.

MUS 236 Jazz Ensemble IV  
Prerequisites: MUS 235  
Corequisites: None  
This course is a continuation of MUS 235. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles and periods of jazz literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance.

MUS 241 Ensemble III  
Prerequisites: MUS 142  
Corequisites: None  
This course is a continuation of MUS 142. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 241P is Piano Ensemble III.

MUS 241R Ensemble III  
Prerequisites: MUS 142R  
Corequisites: None  
This course is a continuation of MUS 142R. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 241R is Recorder Ensemble III.

MUS 241G Ensemble III  
Prerequisites: MUS 142G  
Corequisites: None  
This course is a continuation of MUS 142G. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 241G is Guitar Ensemble III.

MUS 241E Ensemble III  
Prerequisites: MUS 142E  
Corequisites: None  
This course is a continuation of MUS 142E. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance.
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<td>Applied Music IV</td>
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<td>MUS 271 Music History I</td>
<td>3 0 3</td>
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<tr>
<td>MUS 272 Music History II</td>
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<tr>
<td>MUS 273 Opera Production III</td>
<td>0 9 3</td>
<td>Prerequisites: MUS 174</td>
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### Course Descriptions

**MUS 242P Ensemble IV**

- **Prerequisites:** MUS 241P
- **Corequisites:** None
- This course is a continuation of MUS 241P. Emphasis is placed on the development of performance skills and the study of styles of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. MUS 242P is Piano Ensemble IV.

**MUS 251V Class Music III Voice**

- **Prerequisites:** MUS 152V
- **Corequisites:** None
- This course is a continuation of MUS 152V. Emphasis is placed on the development of performance skills and the study of styles of ensemble literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. The specific instrument is designated by a letter as given below.

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**MUS 265 Piano Pedagogy**

- **Prerequisites:** MUS 261B-W

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**MUS 273 Opera Production III**

- **Prerequisites:** MUS 174
- **Corequisites:** None
- This course provides individual instruction in the skills and techniques of the particular instrument or voice. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. The specific instrument is designated by a letter as given below.

---

**List of Instruments**

- **B** Clarinet
- **C** Flute
- **D** French horn
- **E** Harp
- **F** Guitar
- **G** Harpsichord
- **H** Cello
- **I** Organ
- **J** Bassoon
- **K** Percussion
- **L** Harp
- **M** Trumpet
- **N** Saxophone
- **O** String Bass
- **P** Piano
- **Q** Trombone
- **R** Tuba
- **S** Violin
- **T** Guitar
- **V** Voice
- **W** Piano
ated with producing operas of various musical periods, with an emphasis on stagecraft. Upon completion, students should be able to participate in an assigned position in a college opera production. This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 274 Opera Production IV**

**Prerequisites:** MUS 273
Corequisites: None
This course provides an applied laboratory study on the processes involved in the production of an opera. Topics include fundament practices, principles, and techniques associated with producing operas of various musical periods, with an emphasis on rehearsal and performance techniques. Upon completion, students should be able to participate in an assigned position in a college opera production. This course has been approved by the Transfer Advisory Committee to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 291 Selected Topics in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 292 Selected Topics in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 293 Selected Topics in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**MUS 296 Seminar in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 297 Seminar in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**MUS 298 Seminar in Music**

**Prerequisites:**
Corequisites: None
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

**NET- Networking Technology**

**NET 110 Networking Concepts**

**Prerequisites:** None
Corequisites: None
This course introduces students to the networking field. Topics include network terminology and protocols, local area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This course is also available through the Virtual Learning Community (VLC).

**NET 113 Home Automation Systems**

**Prerequisites:** None
Corequisites: None
This course covers the design, installation, testing, troubleshooting, and customer service of a fully automated home. Emphasis is placed on a structured wiring system that integrates the home phone, TV, home theater, audio, video, computer network, lighting, security systems, and automation systems into a pre-wired, remote controlled system. Upon completion, students should be able to design, install, and maintain home automation systems. This course is preparation for the Home Technology Integrator (HTI+) certification.

**NET 125 Networking Basics**

**Prerequisites:** None
Corequisites: None
This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols

**NET 126 Routing Basics**

**Prerequisites:** NET 125
Corequisites: None
This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs.

**NET 225 Router and Switching I**

**Prerequisites:** NET 126
Corequisites: None
This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface

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**CENTRAL PIEDMONT COMMUNITY COLLEGE**

**College-Level Credit Course Descriptions**

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configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in pre-requisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP.

**NET 226 Adv. Router and Switching II** 1 4 3  
Prerequisites: NET 225  
Corequisites: None  
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for networking routing problems, identify ISDN protocols, channels, and function groups, describe the Spanning Tree protocol. This is the fourth course in the Cisco Networking Academy Certificate. This is the fourth course in the Cisco Network Academy CCNA Program.

**NET 233 Defense In-Depth** 2 2 3  
Prerequisites: NET 222 and CIS 279 or NET 155  
Corequisites: NET 232  
This course introduces students to the concepts of defense in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures. This course is restricted to the Information Systems Security program.

**NET 260 Internet Dev & Support** 3 0 3  
Prerequisites: NET 110  
Corequisites: None  
This course covers issues relating to the development and implementation of Internet related tools and services. Topics include Internet organization, site registration, e-mail servers, Web servers, Web page development, legal issues, firewalls, multimedia, TCP/IP, service providers, FTP, list servers, and gateways. Upon completion, students should be able to develop and support the Internet services needed within an organization. Hands-on experience in the setup and management of internet server hardware and software is included.

**NET 289 Networking Project** 1 4 3  
Prerequisites: NET 226  
Corequisites: None  
This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

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### NOS - Networking Operating Systems

<table>
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<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
</table>

#### NOS 110 Operating Systems Concepts  
Prerequisites: None  
Corequisites: None  
This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems.

#### NOS 120 Linux/UNIX Single User  
Prerequisites: NOS 110  
Corequisites: None  
This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

#### NOS 130 Windows Single User  
Prerequisites: NOS 110  
Corequisites: None  
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single user environment.

#### NOS 220 Linux/UNIX Admin. I  
Prerequisites: NOS 120  
Corequisites: None  
This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network.

#### NOS 230 Windows Admin. I  
Prerequisites: NOS 130  
Corequisites: None  
This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

#### NOS 231 Windows Admin. II  
Prerequisites: NOS 230  
Corequisites: None  
This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolu-
tion, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment.

**NUR - Nursing**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 115</td>
<td>Fundamentals of Nursing</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Prequisites: Admission to the Associate Degree Nursing program</td>
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<tr>
<td></td>
<td>Corequisites: BIO 168, MAT 161, PSY 150, CIS 110</td>
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</tbody>
</table>

This course introduces concepts basic to beginning nursing practice. Emphasis is placed on the application of the nursing process to provide and manage care as a member of the discipline of nursing. Upon completion, students should be able to demonstrate beginning competence in caring for individuals with common alterations of health.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 125</td>
<td>Maternal-Child Nursing</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Prequisites: NUR 135</td>
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<tr>
<td></td>
<td>Corequisites: ENG 111, BIO 275</td>
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</tbody>
</table>

This course introduces nursing concepts related to the delivery of nursing care for the expanding family. Emphasis is placed on utilizing the nursing process as a framework for managing/providing nursing care to individuals and families along the wellness-illness continuum. Upon completion, students should be able to utilize the nursing process to deliver nursing care to mothers, infants, children, and families.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 135</td>
<td>Adult Nursing I</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Prequisites: NUR 115</td>
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<tr>
<td></td>
<td>Corequisites: NUR 185, BIO 169</td>
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</tbody>
</table>

This course introduces concepts related to the nursing care of individuals experiencing acute and chronic alterations in health. Emphasis is placed on utilizing the nursing process as a framework for providing and managing nursing care to individuals along the wellness-illness continuum. Upon completion, students should be able to apply the nursing process to deliver nursing care to individuals experiencing acute and chronic alterations in health.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 185</td>
<td>Mental Health Nursing</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Prequisites: NUR 115, PSY 150</td>
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<tr>
<td></td>
<td>Corequisites: BIO 169, NUR 135</td>
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</tbody>
</table>

This course includes concepts related to the nursing care of individuals experiencing alterations in social and psychological functioning. Emphasis is placed on utilizing the nursing process to provide and manage nursing care for individuals with common psychiatric disorders or mental health needs. Upon completion, students should be able to apply psychosocial theories in the nursing care of individuals with psychiatric/mental health needs.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 235</td>
<td>Adult Nursing II</td>
<td>4</td>
<td>3</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Prequisites: NUR 125</td>
<td></td>
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<tr>
<td></td>
<td>Corequisites: NUR 255, ENG 112 or ENG 113</td>
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</tbody>
</table>

This course provides expanded concepts related to nursing care for individuals experiencing common complex alterations in health. Emphasis is placed on the nurse’s role as a member of a multidisciplinary team and as a manager of care for a group of individuals. Upon completion, students should be able to provide comprehensive nursing care for groups of individuals with common complex alterations in health.

**OST - Office Systems Technology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 131</td>
<td>Keyboarding</td>
<td>.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prequisites:</td>
<td></td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. This course includes the introduction to word processing.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 131X</td>
<td>Keyboarding</td>
<td>.5</td>
<td>1</td>
<td>1</td>
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<tr>
<td></td>
<td>Prequisites:</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. *This is the first part of a course sequence and emphasizes the touch system and correct techniques.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 131Y</td>
<td>Keyboarding</td>
<td>.5</td>
<td>1</td>
<td>1</td>
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<tr>
<td></td>
<td>Prequisites:</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. *This is the second part of a course sequence and continues to emphasize the development of speed and accuracy.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 132</td>
<td>Keyboard Skill Building</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Prequisites:</td>
<td></td>
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<tr>
<td></td>
<td>Corequisites: OST 131 or OST 131X and OST 131Y</td>
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</tbody>
</table>

This course provides accuracy- and speed-building drills. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed. This course is specifically for the Data Entry Certificate.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 133</td>
<td>Advanced Keyboard Skill Building</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Prequisites:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
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</tbody>
</table>

This course is designed to increase speed and improve accuracy to meet employment tests and job requirements. Emphasis is placed on individualized diagnostic and prescriptive drills. Upon completion, students should be able to keyboard with greater speed and accuracy as measured by five-minute timed writings and skill-development paragraphs. This course is specifically for the Data Entry Certificate.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
</table>
| OST 134 Text Entry and Formatting | This course is designed to provide the skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce mailable documents. | 2 2 3 |       | Prerequisites: OST 131 or OST 131X and OST 131Y  
Corequisites: None  
This course is designed to provide the skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce mailable documents. |
| OST 135 Advanced Text Entry and Format | This course is designed to incorporate computer application skills in the generation of office documents. Emphasis is placed on the production of letters, manuscripts, business forms, tabulation, legal documents, and newsletters. Upon completion, students should be able to make independent decisions regarding planning, style, and method of presentation. | 3 2 4 |       | Prerequisites: OST 134  
Corequisites: None  
This course is designed to incorporate computer application skills in the generation of office documents. Emphasis is placed on the production of letters, manuscripts, business forms, tabulation, legal documents, and newsletters. Upon completion, students should be able to make independent decisions regarding planning, style, and method of presentation. |
| OST 136 Word Processing | This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. | 1 2 2 |       | Prerequisites:  
Corequisites: None  
This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. |
| OST 137 Office Software Applications | This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment. | 1 2 2 |       | Prerequisites:  
Corequisites: None  
This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment. |
| OST 138 Medical Coding Billing and Insurance | This course introduces CPT and ICD coding as they apply to medical insurance and billing. Emphasis is placed on accuracy in coding, forms preparation, and posting. Upon completion, students should be able to describe the steps of the total billing cycle and explain the importance of accuracy. | 3 0 3 |       | Prerequisites:  
Corequisites: None  
This course introduces CPT and ICD coding as they apply to medical insurance and billing. Emphasis is placed on accuracy in coding, forms preparation, and posting. Upon completion, students should be able to describe the steps of the total billing cycle and explain the importance of accuracy. |
| OST 139 Medical Legal Issues | This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior. | 3 0 3 |       | Prerequisites:  
Corequisites: None  
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior. |
| OST 140 Legal Terminology | This course covers the terminology appropriate to the legal profession. Topics include legal research, court systems, litigation, civil and criminal law, probate, real and personal property, contracts and leases, domestic relations, equity, and corporations. Upon completion, students should be able to spell, pronounce, define, and demonstrate an understanding of the use of these legal terms. | 3 0 3 |       | Prerequisites:  
Corequisites: None  
This course covers the terminology appropriate to the legal profession. Topics include legal research, court systems, litigation, civil and criminal law, probate, real and personal property, contracts and leases, domestic relations, equity, and corporations. Upon completion, students should be able to spell, pronounce, define, and demonstrate an understanding of the use of these legal terms. |
| OST 141 Systems Technology | This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. A database software package is used to illustrate and practice database management operations. | 0-1 0-3 1 |       | Prerequisites:  
Corequisites: None  
This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. A database software package is used to illustrate and practice database management operations. |
| OST 142 Records Management | This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. | 1-3 0-6 3 |       | Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. |
| OST 143 Systems Technology | This course provides a comprehensive study of editing skills including the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. A database software package is used to illustrate and practice database management operations. | 0-1 0-3 1 |       | Prerequisites:  
Corequisites: None  
This course provides a comprehensive study of editing skills including the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. A database software package is used to illustrate and practice database management operations. |
| OST 144 Text Editing Applications | This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. | 3 0 3 |       | Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. |
| OST 145 Systems Technology | This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. | 1-3 0-6 3 |       | Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. |
| OST 146 Text Editing Applications | This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. | 3 0 3 |       | Prerequisites:  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. PowerPoint software is taught in this course. |
OST 198 Seminar in Office Systems Technology  1-3  0-6  3
Prerequisites: Enrollment in the program
Corequisites: None
This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

OST 220 Notetaking  3  0  3
Prerequisites: None
This course is designed to develop efficient notetaking skills through the use of the alphabet, abbreviations, and other shortcuts. Emphasis is placed on taking accurate notes and building vocabulary. Upon completion, students should be able to take notes and transcribe from office dictation, class lectures, and meetings and record accurate telephone messages.

OST 223 Machine Transcription I  1  2  2
Prerequisites: OST 134, OST 136, and OST 164
Corequisites: None
This course covers the use of transcribing machines to produce mailable documents. Emphasis is placed on appropriate formatting, advanced text editing skills, and transcription techniques. Upon completion, students should be able to transcribe documents into mailable copy.

OST 233 Office Publications Design  2  2  3
Prerequisites: OST 136
Corequisites: None
This course provides entry-level skills in using software with desktop publishing capabilities. Topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to design and produce professional business documents and publications. Hands-on experience using a software package is provided to illustrate concepts and provide practice in developing documents and publications.

OST 236 Advanced Word/Information Processing  2  2  3
Prerequisites: OST 136
Corequisites: None
This course develops proficiency in the utilization of advanced word/information processing functions. Topics include tables, graphics, macros, sorting, document assembly, merging, and newspaper and brochure columns. Upon completion, students should be able to produce a variety of complex business documents.

OST 241 Medical Office Transcription I  1  2  2
Prerequisites: MED 121 and OST 131
Corequisites: None
This course introduces machine transcription techniques as applied to medical documents. Emphasis is placed on accurate transcription, proofreading, and use of reference materials as well as vocabulary building. Upon completion, students should be able to prepare accurate and usable transcripts of voice recordings in the covered specialties.

OST 243 Medical Office Simulation  2  2  3
Prerequisites: OST 131 or OST 131X and OST 131Y and OST 148
Corequisites: None
This course introduces medical systems used to process information in the automated office. Topics include traditional and electronic information resources, storing and retrieving information, and the billing cycle. Upon completion, students should be able to use the computer accurately to schedule, bill, update, and make corrections.

OST 251 Legal Document Formatting  2  2  3
Prerequisites: OST 134, OST 155, and OST 136
Corequisites: None
This course is designed to provide experience in the preparation of various types of legal forms and documents. Emphasis is placed on formatting and keying legal forms, documents, and correspondence. Upon completion, students should be able to produce these documents with accuracy and speed.

OST 252 Legal Transcription I  2  2  3
Prerequisites: OST 155
Corequisites: OST 251
This course provides experience in using the transcriber to produce legal correspondence, forms, and documents with mailable accuracy from recorded tapes. Emphasis is placed on operating the transcriber, developing listening skills to translate the audio into hard copy, and producing mailable documents. Upon completion, students should be able to transcribe legal forms and documents with reasonable accuracy.

OST 253 Legal Transcription II  2  2  3
Prerequisites: OST 134, OST 155, and OST 136
Corequisites: None
This course provides experience in using the transcriber to produce legal correspondence, forms, and documents with mailable accuracy from recorded tapes. Emphasis is placed on operating the transcriber, developing listening skills to translate the audio into hard copy, and producing mailable documents. Upon completion, students should be able to transcribe legal forms and documents with reasonable accuracy.

OST 286 Professional Development  3  0  3
Prerequisites: None
Corequisites: None
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy lifestyles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.

OST 289 Office Systems Management  2  2  3
Prerequisites: OST 134, OST 136, and OST 164
Corequisites: None
This course provides a capstone course for the office professional. Topics include administrative office procedures, imaging, communication techniques, ergonomics, and equipment utilization. Upon completion, students should be able to function proficiently in a changing office environment.

Paralegal - See LEX Course Descriptions

Process Control Instrumentation

PCI 162 Instrumentation Controls  2  3  3
Prerequisites: ELC 131
Corequisites: None
This course surveys industrial process control instrumentation concepts, devices, and systems. Topics include process control devices and process control applications associated with industrial instrumentation. Upon completion, students should be able to demonstrate a basic understanding of the various industrial process control and instrumentation systems.
PCI 170 DAQ and Control  3  3  4  
Prerequisites: ELN 133E  
Corequisites: None  
This course is a survey of data acquisition and control applications in an industrial setting. Topics include remote I/O systems, PC-based data acquisition, real-time monitoring, and other related topics. Upon completion, students should be able to demonstrate an understanding of data acquisition circuits. This course includes development of virtual instruments using Lab-View software and data acquisition hardware.

PCI 172 SCADA Systems  3  3  4  
Prerequisites: ELN 260  
Corequisites: None  
This course is a survey of SCADA systems found in the industrial setting. Topics include single and/or multiple machine operator interfaces utilizing hardware and software systems running SCADA or HMI software for system monitoring and control. Upon completion, students should be able to demonstrate an understanding of the utilization and implementation of custom and commercial SCADA or HMI software.

PCI 173 Programmable Systems  3  3  4  
Prerequisites: ELN 260  
Corequisites: None  
This course is a survey of various programmable systems used in industry. Topics include PLC systems, PAC systems, DCS systems, and embedded systems and other types of control systems implementation. Upon completion, students should be able to demonstrate an understanding of the programming, troubleshooting, maintenance and planning involved in control systems.

**PED - Physical Education**

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<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
</table>

**PED 113 Aerobics I**  0  3  1  
Prerequisites:  
Corequisites: None  
This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 117 Weight Training I**  0  3  1  
Prerequisites:  
Corequisites: None  
This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 122 Yoga I**  0  2  1  
Prerequisites:  
Corequisites: None  
This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 163 Kayaking-Basic**  0  2  1  
Prerequisites: PED 152 or Demonstrated Swimming Ability  
Corequisites: None  
This course is designed to teach the basic skills of kayaking. Topics include forward and reverse strokes, sweeps, Eskimo roll, and self-rescue skills. Upon completion, students should be able to maneuver and demonstrate safe kayaking practices. Although intended for students who have an interest in moving water, this course is valuable for those who want to paddle on lakes; extra fees are charged for equipment. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 169 Orienteering**  0  2  1  
Prerequisites:  
Corequisites: None  
This course introduces the various types of orienteering and proper orienteering techniques. Emphasis is placed on defining various types of orienteering and recognizing and drawing topographic map symbols. Upon completion, students should be able to draw topographic map symbols and negotiate a 3-5 km cross-country orienteering course in a specified time period. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 170 Backpacking**  0  2  1  
Prerequisites: None  
Corequisites: None  
This course teaches the proper techniques for establishing a campsite, navigating in the wilderness, and planning for an overnight trip. Topics include planning for meals, proper use of maps and compass, and packing and dressing for extended periods in the outdoors. Upon completion, students should be able to identify quality backpacking equipment, identify the principles of no-trace camping, and successfully complete a backpacking experience. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*

**PED 173 Rock Climbing**  0  2  1  
Prerequisites:  
Corequisites: None  
This course teaches the fundamental skills and safety of rock climbing. Topics include rock climbing, bouldering, rappelling, the correct method of belaying for climbing and rappelling, and knowledge of equipment. Upon completion, students should be able to demonstrate strong and skillful techniques in climbing and rappelling. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.*
### PHI - Philosophy

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<td>Western Philosophy I</td>
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<td>PHI 221</td>
<td>Western Philosophy II</td>
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<tr>
<td>PHI 230</td>
<td>Introduction to Logic</td>
<td>3</td>
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</tbody>
</table>

**Prerequisites:** ENG 111 with a grade of C or higher, or consent of division director. 

**Corequisites:** None

This course covers Western intellectual and philosophic thought from the early Greeks through the medievalists. Emphasis is placed on such figures as the pre-Socrates, Plato, Aristotle, Epicurus, Epictetus, Augustine, Suarez, Anselm, and Aquinas. Upon completion, students should be able to trace the development of leading ideas regarding reality, knowledge, reason, and faith. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

### PHS - Physical Science, Basic

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<th>Lecture</th>
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<tbody>
<tr>
<td>PHS 110</td>
<td>Basic Physical Science</td>
<td>3</td>
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</table>

**Prerequisites:** 

**Corequisites:** None

This course introduces the physical environment with emphasis on the laws and physical concepts that impact the world and universe. Topics include astronomy, geology, meteorology, general chemistry, and general physics. Upon completion, students should be able to describe the forces and composition of the earth and universe.

### PHY - Physics

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<td>PHY 110</td>
<td>Conceptual Physics</td>
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<td>PHY 110A</td>
<td>Conceptual Physics Lab</td>
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<td>PHY 131</td>
<td>Physics-Mechanics</td>
<td>3</td>
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<tr>
<td>PHY 132</td>
<td>Physics-Electricity and Magnetism</td>
<td>3</td>
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<td>4</td>
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</tbody>
</table>

**Prerequisites:** 

**Corequisites:** 

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton’s laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

This algebra/trigonometry-based course is a study of fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, waves, electricity, magnetism, circuits, transformers, motors, and generators. Upon completion,
PHY 133 Physics-Sound and Light  
3 2 4  
Prerequisites: PHY 131 or equivalent  
Corequisites: None  
This algebra/trigonometry-based course is a study of fundamental physical concepts as applied to engineering technology fields. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

PHY 151 College Physics I  
3 2 4  
Prerequisites: MAT 161, MAT 172, MAT 175, MAT 1504, or MAT 3507 (one of these)  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PHY 152 College Physics II  
3 2 4  
Prerequisites: PHY 151 or equivalent or permission  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PHY 153 Modern Topics in Physics  
3 2 4  
Prerequisites: PHY 151 or equivalent  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PHY 251 General Physics I  
3 3 4  
Prerequisites: MAT 271 or MAT 1524 or equivalent  
Corequisites: MAT 272  
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PHY 252 General Physics II  
3 3 4  
Prerequisites: MAT 272 and PHY 251 or equivalent  
Corequisites: None  
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PHY 253 Modern Physics  
3 3 4  
Prerequisites: PHY 251 and MAT 272 or equivalent  
Corequisites: None  
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include atomic structure, nuclear processes, natural and artificial radioactivity, quantum theory, and special relativity. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

PLA - Plastics  
See also ATR-Automation, DDF-Design Drafting, DFT-Drafting, ISC-Industrial Science, and MEC-Mechanical Engineering Technology for other courses.
**POL - Political Science**

**POL 110 Intro to Basic Plumbing**

| 1 | 3 | 2 |

- **Prerequisites:** None
- **Corequisites:** None
- This course introduces basic plumbing tools, materials, and fixtures. Topics include standard tools, materials, and fixtures used in basic plumbing systems and other related topics. Upon completion, students should be able to demonstrate an understanding of a basic plumbing system.

**POL 120 Plumbing Applications**

| 4 | 15 | 9 |

- **Prerequisites:** None
- **Corequisites:** None
- This course covers general plumbing layout, fixtures, and water heaters. Topics include drainage, waste and vent pipes, water service and distribution, fixture installation, water heaters, and other related topics. Upon completion, students should be able to safely install common fixtures and systems in compliance with state and local building codes.

**POL 130 Plumbing Systems**

| 3 | 9 | 6 |

- **Prerequisites:** None
- **Corequisites:** None
- This course covers the maintenance and repair of plumbing lines and fixtures. Emphasis is placed on identifying and diagnosing problems related to water, drain and vent lines, water heaters, and plumbing fixtures. Upon completion, students should be able to identify and diagnose needed repairs to the plumbing system.

**POL 220 International Relations**

| 3 | 0 | 3 |

- **Prerequisites:** None
- **Corequisites:** None
- This course provides a study of the effects of ideologies, trade, armaments, and alliances on relations among nations. Emphasis is placed on regional and global cooperation and conflict, economic development, trade, non-governmental organizations, and international institutions such as the World Court and UN. Upon completion, students should be able to identify and discuss major international relationships, institutions, and problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**PRN - Printing**

**PRN 131 Flexography I**

| 2 | 4 | 4 |

- **Prerequisites:** PRN 131
- **Corequisites:** None
- This course provides basic hands-on instruction in flexographic image preparation, platemaking, mounting, and printing. Emphasis is placed on taking press measurements, making and mounting plates, and obtaining quality in press operation on a narrow-web press. Upon completion, students should be able to describe and perform flexographic production procedures in pre-press, press setup, press operation, and die-cutting.

**PRN 132 Flexography II**

| 2 | 4 | 4 |

- **Prerequisites:** PRN 131
- **Corequisites:** None
- This course is a continuation of PRN 131 and introduces wide-web presses. Emphasis is placed on troubleshooting press problems, color matching, parts identification, make-ready, and setup of narrow-web, wide-web, or corrugated presses. Upon completion, students should be able to produce advanced projects involving all flexographic production phases. This course is a unique concentration requirement in the Flexography concentration in the Graphic Arts and Imaging Technology program.

**PRN 155 Screen Printing I**

| 1 | 3 | 2 |

- **Prerequisites:** None
- **Corequisites:** None
- This course covers screen printing techniques and materials. Topics include methods, materials, design, and image and stencil preparation techniques. Upon completion, students should be able to produce single- or multi-color projects.

**PRN 156 Screen Printing II**

| 1 | 3 | 2 |

- **Prerequisites:** PRN 155
- **Corequisites:** None
- This course is a continuation of PRN 155. Emphasis is placed on advanced techniques and current industry practices. Upon completion, students should be able to produce multi-color projects utilizing various photographic stencil methods and substrates.

**PRN 221 Offset Press Operations**

| 1 | 4 | 3 |

- **Prerequisites:** None
- **Corequisites:** None
- This course covers advanced lithographic theory and provides extensive hands-on operating experience. Emphasis is placed on make-ready, press operation, maintenance, and troubleshooting of multi-color jobs on sheet-fed offset presses and duplicators. Upon completion, students should be able to set up, run, maintain, and produce commercial-quality multi-color work.
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<tr>
<th>Course Code</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>PRN 240 Print Estimating / Planning</td>
<td>3</td>
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<td>PRN 241 Flexography Applications I</td>
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<td>PRN 242 Flexography Applications II</td>
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<tr>
<td>PRN 231 Flexography III</td>
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<tr>
<td>PRN 232 Flexography IV</td>
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<td>PSY 141 Psych of Death and Dying</td>
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<tr>
<td>PSY 150 General Psychology</td>
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<tr>
<td>PSY 241 Developmental Psychology</td>
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<tr>
<td>PSY 281 Abnormal Psychology</td>
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</table>

**PSY - Psychology**

**PRN 240 Print Estimating / Planning**
- **Corequisites:** None
- **Prerequisites:** GRA 121
- This course covers printing economics, development of cost centers, job flow throughout departments, and material and labor costs. Topics include budgeted, hourly, cost-rate derivation; production standards and data; and analysis of other estimating procedures including computer-assisted estimating. Upon completion, students should be able to demonstrate an understanding of economic factors of the printing industry and determine all production costs of printed jobs.

**PRN 241 Flexography Applications I**
- **Corequisites:** None
- **Prerequisites:** GRA 152 and PRN 131
- This course provides an opportunity to specialize in certain applications in flexographic printing. Emphasis is placed on understanding color and production concerns in order to produce products. Upon completion, students should be able to troubleshoot color problems during printing and relate them to the production procedures. This course is a unique concentration requirement in the Flexography concentration in the Graphic Arts and Imaging Technology program.

**PRN 242 Flexography Applications II**
- **Corequisites:** None
- **Prerequisites:** PRN 241, GRA 153, and GRA 255
- This course provides an opportunity to produce comprehensive projects, including color work on special substrates using specialty inks. Emphasis is placed on compensation for press limitations to produce high-quality color products. Upon completion, students should be able to produce color images on a variety of substrates and troubleshoot and solve production problems. This course is a unique concentration requirement in the Flexography concentration in the Graphic Arts and Imaging Technology program.

**PRN 231 Flexography III**
- **Corequisites:** None
- **Prerequisites:** PRN 132
- This course is a continuation of PRN 132. Emphasis is placed on the products made and processes used in the industry. Upon completion, students should be able to demonstrate an understanding of advanced production techniques of flexographic products. This course is a unique concentration requirement in the Flexography concentration in the Graphic Arts and Imaging Technology program.

**PRN 232 Flexography IV**
- **Corequisites:** None
- **Prerequisites:** PRN 231
- This course provides opportunities for advanced and specialized study in flexography. Emphasis is placed on specialized product design and production. Upon completion, students should be able to demonstrate an understanding of the comprehensive scope of the flexographic industry, products, and processes. This course is a unique concentration requirement in the Flexography concentration in the Graphic Arts and Imaging Technology program.

**PSY 141 Psych of Death and Dying**
- **Corequisites:** None
- **Prerequisites:**
- This course presents psychological perspectives on death and the dying. Topics include the culturally diverse aspects of death and the grieving process, adjustment mechanisms, interventions, and the psychological and ethical dimensions of death and dying. Upon completion, students should be able to demonstrate an understanding of the psychological aspects of death and dying. This course is intended for all Associate degree programs.

**PSY 150 General Psychology**
- **Corequisites:** None
- **Prerequisites:**
- This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**PSY 241 Developmental Psychology**
- **Corequisites:** None
- **Prerequisites:**
- This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**PSY 281 Abnormal Psychology**
- **Corequisites:** None
- **Prerequisites:**
- This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.
**PTA - Physical Therapist Assistant**

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<th>Lecture</th>
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<tbody>
<tr>
<td>PTA 110</td>
<td>Intro to Physical Therapy</td>
<td>2</td>
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<tr>
<td>PTA 125</td>
<td>Gross and Functional Anatomy</td>
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<tr>
<td>PTA 135</td>
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<tr>
<td>PTA 145AB</td>
<td>Therapeutic Procedures</td>
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<td>3</td>
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<tr>
<td>PTA 145BB</td>
<td>Therapeutic Procedures</td>
<td>1</td>
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<tr>
<td>PTA 165</td>
<td>PTA Clinical I</td>
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<td>PTA 185</td>
<td>PTA Clinical II</td>
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<td>Health Care/Resources</td>
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<td>PTA 215</td>
<td>Therapeutic Exercise</td>
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<td>PTA 222</td>
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**Prerequisites:**
- PTA 110
- PTA 145A
- PTA 145B
- PTA 215
- PTA 225
- PTA 235A
- PTA 245
- PTA 255

**Corequisites:**
- PTA 125, PTA 135, PTA 145B, PTA 185, PTA 215
- PTA 222, PTA 235B, PTA 245, PTA 255
- PTA 225, PTA 235A, PTA 185, PTA 215

**Course Descriptions:**

- **PTA 110 Intro to Physical Therapy**
  - This course introduces the field of physical therapy including the history and standards of practice for the physical therapist assistant and basic treatment techniques. Emphasis is placed on ethical and legal considerations, universal precautions, vital signs, documentation, basic patient preparation and treatment skills, and architectural barrier screening. Upon completion, students should be able to explain the role of the physical therapist assistant and demonstrate competence in basic techniques of patient care.

- **PTA 125 Gross and Functional Anatomy**
  - This course provides an in-depth, clinically oriented survey of gross and functional anatomy. Emphasis is placed on musculoskeletal and nervous systems and clinical biomechanics, including goniometry, basic manual muscle testing, and components of normal gait. Upon completion, students should be able to identify specific anatomical structures and describe, observe, and measure musculoskeletal posture and function.

- **PTA 135 Pathology**
  - This course introduces principles of pathology, processes of and normal responses to injury and disease, and changes related to aging. Emphasis is placed upon conditions most commonly treated in physical therapy. Upon completion, students should be able to discuss basic pathological processes and identify etiology, signs, symptoms, complications, treatment options, and prognoses of specific orthopedic conditions.

- **PTA 145AB Therapeutic Procedures**
  - This course provides a detailed study of specific treatment procedures and the physiological principles and techniques involved. Emphasis is placed on the correct application of superficial heat and cold, massage and soft tissue mobilization, ultrasound, diathermy, traction, and electrical stimulation. Upon completion, students should be able to demonstrate competence in the application of these modalities and explain the indications, contraindications, effects, and precautions for each. This is the second part of a course sequence and focuses on the use of ultrasound, diathermy, traction, and electrical stimulation.

- **PTA 145BB Therapeutic Procedures**
  - This course provides a detailed study of specific treatment procedures and the physiological principles and techniques involved. Emphasis is placed on the correct application of superficial heat and cold, massage and soft tissue mobilization, ultrasound, diathermy, traction, and electrical stimulation. Upon completion, students should be able to demonstrate competence in the application of these modalities and explain the indications, contraindications, effects, and precautions for each. This is the first part of a course sequence and focuses on the use of superficial heat and cold, hydrotherapy, massage and soft tissue mobilization.
PTA 225 Intro to Rehabilitation 3 3 0 4
Prerequisites: PTA 125, PTA 135, PTA 145B, and PTA 215
Corequisites: PTA 235A, PTA 165, and PTA 185
This course covers cardiovascular, pulmonary, and integumentary conditions, as well as causes and treatment of amputations. Emphasis is placed upon pathological processes as well as comprehensive treatment of the various conditions studied. Upon completion, students should be able to discuss etiology, signs, symptoms, complications, and prognoses of various conditions and implement components of a comprehensive treatment program.

PTA 235AB Neurological Rehab 1 3 0 2
Prerequisites: PTA 215, PTA 125, PTA 135, and PTA 145B
Corequisites: PTA 225, PTA 165 and PTA 185
This course covers neurological and neuromuscular conditions experienced throughout the life span. Topics include the pathology of selected conditions and the methods and rationales of various treatment approaches. Upon completion, students should be able to discuss etiology, signs, symptoms, complications, and prognoses of various conditions and implement components of a comprehensive treatment program. This is the first part of a course sequence and emphasizes normal growth and development and conditions experienced in childhood.

PTA 235BB Neurological Rehab 2 3 0 3
Prerequisites: PTA 225, PTA 235A, PTA 165, and PTA 185
Corequisites: PTA 212, PTA 222, PTA 245, PTA 255
This course covers neurological and neuromuscular conditions experienced throughout the life span. Topics include the pathology of selected conditions and the methods and rationales of various treatment approaches. Upon completion, students should be able to discuss etiology, signs, symptoms, complications, and prognoses of various conditions and implement components of a comprehensive treatment program. This is the second part of a course sequence, continuing in-depth study of the neurological system and focusing on conditions affecting adulthood.

PTA 245 PTA Clinical III 0 0 12 4
Prerequisites: PTA 225, PTA 235A, PTA 165, and PTA 185
Corequisites: PTA 212, PTA 222, PTA 235B, and PTA 255
This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation.

PTA 255 PTA Clinical IV 0 0 12 4
Prerequisites: PTA 225, PTA 235A, PTA 165, and PTA 185
Corequisites: PTA 212, PTA 222, PTA 235B, and PTA 245
This course provides the opportunity to gain clinical experience and apply academic skills and knowledge to patient care. Emphasis is placed on performing patient care skills, observation and measurement, and professional and patient interaction. Upon completion, students should be able to demonstrate safe and effective clinical practice as measured by a standardized performance evaluation.

RCP - Respiratory Therapy

RCP 110 Introduction to Respiratory Care 3 3 0 4
Prerequisites: BIO 163, or BIO 165, BIO 166 or BIO 168, BIO 169
Corequisites: RCP 113, RCP 114, RCP 122, RCP 123
This course introduces the respiratory care profession. Topics include the role of the respiratory care practitioner, medical gas administration, basic patient assessment, infection control, and medical terminology. Upon completion, students should be able to demonstrate competence in concepts and procedures through written and laboratory evaluations.

RCP 111 Therapeutics/Diagnostics 4 3 0 5
Prerequisites: RCP 110, RCP 122, MED 120, RCP 113, RCP 114
Corequisites: RCP 145
This course is a continuation of RCP 110. Emphasis is placed on entry-level therapeutic and diagnostic procedures used in respiratory care. Upon completion, students should be able to demonstrate competence in concepts and procedures through written and laboratory evaluations.

RCP 113 Respiratory Care Pharmacology 2 0 0 2
Prerequisites: None
Corequisites: RCP 110, RCP 114, RCP 122, RCP 123
This course covers the drugs used in the treatment of cardiopulmonary diseases. Emphasis is placed on the uses, actions, indications, administration, and hazards of pharmacological agents. Upon completion, students should be able to demonstrate competence through written evaluations.

RCP 114 Cardiopulmonary Anatomy and Physiology 3 0 0 3
Prerequisites: BIO 163, or BIO 165 and BIO 166, or BIO 168 and BIO 169
Corequisites: RCP 110, RCP 113, RCP 122, RCP 123
This course provides a concentrated study of cardiopulmonary anatomy and physiology essential to the practice of respiratory care. Emphasis is placed on cardiovascular and pulmonary physiology, acid/base balance, and blood gas interpretation. Upon completion, students should be able to demonstrate competence in these concepts through written evaluation.

RCP 115 Cardiopulmonary Pathophysiology 2 0 0 2
Prerequisites: BIO 163 or BIO 168 and BIO 169 or BIO 165 and BIO 166, RCP 110, RCP 113, RCP 114
Corequisites: RCP 111, RCP 145
This course introduces the etiology, pathogenesis, and physiology of cardiopulmonary disease and disorders. Emphasis is placed on clinical signs and symptoms along with diagnoses, complications, prognoses, and management. Upon completion, students should be able to demonstrate competence in these concepts through written evaluations.
RCP 122 Special Practice Lab 0 2 0 1
Prerequisites: BIO 163, or BIO 165, BIO 166 or BIO 168, BIO 169
Corequisites: RCP 113, RCP 114, RCP 123
This course provides additional laboratory learning opportunities in respiratory care. Emphasis is placed on therapeutic procedures and equipment management. Upon completion, students should be able to demonstrate competence in concepts and procedures through laboratory evaluations.

RCP 123 Special Practice Lab 0 3 0 1
Prerequisites: BIO 163, or BIO 165, BIO 166 or BIO 168, BIO 169
Corequisites: RCP 113, RCP 114, RCP 122
This course provides additional laboratory learning opportunities in respiratory care. Emphasis is placed on therapeutic procedures and equipment management. Upon completion, students should be able to demonstrate competence in concepts and procedures through laboratory evaluations.

RCP 145 Respiratory Care
Clinical Practice II 0 0 15 5
Prerequisites: RCP 110, RCP 113, RCP 114
Corequisites: RCP 111
This course provides entry-level clinical experience. Emphasis is placed on therapeutic and diagnostic patient care. Upon completion, students should be able to demonstrate clinical competence in required performance evaluations.

RCP 152 Clinical Practice III 0 0 6 2
Prerequisites: RCP 111 and RCP 145, RCP 115
Corequisites: None
This course provides entry-level clinical experience. Emphasis is placed on therapeutic and diagnostic patient care. Upon completion, students should be able to demonstrate clinical competence in required performance evaluations.

RCP 210 Critical Care Concepts 3 3 0 4
Prerequisites: RCP 111, RCP 115, RCP 145, RCP 152
Corequisites: RCP 222, RCP 235, RCP 214
This course provides further refinement of acute patient care and underlying pathophysiology. Topics include a continuation in the study of mechanical ventilation, underlying pathophysiology, and introduction of critical care monitoring. Upon completion, students should be able to demonstrate competence in concepts and procedures through written and laboratory evaluations.

RCP 211 Advanced Monitoring/Procedures 3 3 0 4
Prerequisites: RCP 210, RCP 222, RCP 235
Corequisites: RCP 247
This course includes advanced information gathering and decision making for the respiratory care professional. Topics include advanced cardiac monitoring and special procedures. Upon completion, students should be able to evaluate, design, and recommend appropriate care plans through written and laboratory evaluations.

RCP 214 Neonatal/Pediatric Respiratory Care 1 3 0 2
Prerequisites: RCP 111, RCP 115, RCP 145, RCP 152
Corequisites: RCP 210, RCP 235, RCP 222
This course provides in-depth coverage of the concepts of neonatal and pediatric respiratory care. Emphasis is placed on neonatal and pediatric pathophysiology and on the special therapeutic needs of neonates and children. Upon completion, students should be able to demonstrate competence in these concepts through written and laboratory evaluations.

RCP 222 Special Practice Lab 0 2 0 1
Prerequisites: RCP 111, RCP 115, RCP 145, RCP 152
Corequisites: RCP 210
This course provides additional laboratory learning opportunities in respiratory care. Emphasis is placed on therapeutic procedures and equipment management. Upon completion, students should be able to demonstrate competence in concepts and procedures through laboratory evaluations.

RCP 235 RCP Clinical Practice IV 0 0 15 5
Prerequisites: RCP 210 and RCP 214, RCP 222
Corequisites: RCP 211
This course provides advanced practitioner clinical experience. Emphasis is placed on therapeutic and diagnostic patient care. Upon completion, students should be able to demonstrate clinical competence in required performance evaluations.

RCP 247 RCP Clinical Practice V 0 0 21 7
Prerequisites: RCP 210 and RCP 235, RCP 214, RCP 222
Corequisites: RCP 211
This course provides advanced practitioner clinical experience. Emphasis is placed on therapeutic and diagnostic patient care. Upon completion, students should be able to demonstrate clinical competence in required performance evaluations.

RED - Reading
See additional developmental reading courses in the Pre-College Programs section of this catalog.

RED 111 Critical Reading for College 3 0 3
Prerequisites: RED 090 or ENG 095 and ENG 095A with a grade of C or higher, or appropriate placement test score(s)
Corequisites: None
This course is designed to enhance critical reading skills. Topics include vocabulary enrichment, reading flexibility, metacognitive strategies, and advanced comprehension skills, including analysis and evaluation. Upon completion, students should be able to demonstrate comprehension and analysis and respond effectively to material across disciplines. In addition, this course is designed to improve reading speed.

REL - Religion

REL 110 World Religions 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Clinic</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>REL 111</td>
<td>Eastern Religions</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
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<tr>
<td>SAB 110</td>
<td>Substance Abuse Overview</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
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<tr>
<td>REL 211</td>
<td>Introduction to Old Testament</td>
<td>3</td>
<td>0</td>
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<tr>
<td>REL 212</td>
<td>Introduction to New Testament</td>
<td>3</td>
<td>0</td>
<td>0</td>
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<tr>
<td>REL 221</td>
<td>Religion in America</td>
<td>3</td>
<td>0</td>
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<tr>
<td>SAB 120</td>
<td>Intake and Assessment</td>
<td>3</td>
<td>0</td>
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<td>3</td>
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<tr>
<td>SAB 125</td>
<td>Substance Abuse Case Management</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>3</td>
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<tr>
<td>SAB 135</td>
<td>Addictive Process</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
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<tr>
<td>SAB 210</td>
<td>Sub Abuse Counseling</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>3</td>
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<tr>
<td>SAB 220</td>
<td>Group Techniques/Therapy</td>
<td>2</td>
<td>2</td>
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</table>

**SAB - Substance Abuse**

- **Overview:** This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventive measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment.

- **Intake and Assessment:** This course develops processes for establishment of client rapport, elicitation of client information on which therapeutic activities are based, and stimulation of client introspection. Topics include diagnostic criteria, functions of counseling, nonverbal behavior, collaterals and significant others, dual diagnosis, client strengths and weaknesses, uncooperative clients, and crisis interventions. Upon completion, students should be able to establish communication with clients, recognize disorders, obtain information for counseling, and terminate the counseling process. This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.

- **Substance Abuse Case Management:** This course develops processes for establishment of client rapport, elicitation of client information on which therapeutic activities are based, and stimulation of client introspection. Topics include diagnostic criteria, functions of counseling, nonverbal behavior, collaterals and significant others, dual diagnosis, client strengths and weaknesses, uncooperative clients, and crisis interventions. Upon completion, students should be able to establish communication with clients, recognize disorders, obtain information for counseling, and terminate the counseling process. This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.

- **Addictive Process:** This course explores the physical, emotional, psychological, and cultural aspects of the addictive process. Emphasis is placed on addiction to food, sex, alcohol, drugs, work, gambling, and relationships. Upon completion, students should be able to identify the effects, prevention strategies, and treatment methods associated with addictive disorders.

- **Sub Abuse Counseling:** This course provides theory and skills acquisition by utilizing intervention strategies designed to obtain therapeutic information, support recovery, and prevent relapse. Topics include counseling individuals and dysfunctional families, screening instruments, counseling techniques and approaches, recovery and relapse, and special populations. Upon completion, students should be able to discuss issues critical to recovery, identify intervention models, and initiate a procedure culminating in cognitive/behavioral change.

- **Group Techniques/Therapy:** This course provides a practical guide to diverse methods of group therapy models used in the specific treatment of substance abuse and addiction. Emphasis is placed on the theory and practice of group therapy models specifically designed to treat the cognitive distortions of addiction and substance abuse. Upon completion, students should be able to skillfully practice the group dynamics and techniques formulated for substance abuse and addiction.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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<tbody>
<tr>
<td>SAB 230</td>
<td>Family Therapy</td>
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<td></td>
<td>Prerequisites: Successful completion of 12 SHC in the SAB concentration Corequisites: None This course covers the theories and models of family systems therapy as designed for families affected by substance abuse and addiction. Emphasis is placed on structures and procedures necessary for successful family therapy, including the needs, types of resistance, and individual family dynamics. Upon completion, students should be able to understand and identify dynamics and patterns unique to families affected by substance abuse and the appropriate model of treatment.</td>
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<tr>
<td>SAB 240</td>
<td>SAB Issues in Client Service</td>
<td>3 0 0 3</td>
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<td></td>
<td>Prerequisites: Successful completion of 12 SHC in the SAB concentration Corequisites: None This course introduces systems of professional standards, values, and issues in substance abuse counseling. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics relative to multicultural counseling and research. Upon completion, students should be able to understand and discuss multiple ethical issues applicable to counseling and apply various decision-making models to current issues. This course is a unique concentration requirement of the Substance Abuse concentration in the Human Services Technology program.</td>
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<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
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<td></td>
<td>Prerequisites: None Corequisites: None This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.</td>
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<td>SEC 150</td>
<td>Secure Communications</td>
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<td>Prerequisites: SEC 110, NET 125, SEC 220 Corequisites: None This course provides an overview of current technologies used to provide secure transport of information across networks. Topics include data integrity through encryption, Virtual Private Networks, SSL, SSH, and IPSec. Upon completion, students should be able to implement secure data transmission technologies.</td>
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<tr>
<td>SEC 160</td>
<td>Secure Admin. I</td>
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<td></td>
<td>Prerequisites: NOS 130 Corequisites: None Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures. This course is restricted to the Information Systems Security, the Information Systems Security/Operating Systems, and the Information Systems Security/Security Hardware curriculums.</td>
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<tr>
<td>SEC 210</td>
<td>Intrusion Detection</td>
<td>2 2 3</td>
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<td>Prerequisites: SEC 160, SEC 220 Corequisites: None This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solutions for networks and host based systems.</td>
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<tr>
<td>SEC 220</td>
<td>Defense-In-Depth</td>
<td>2 2 4</td>
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<td></td>
<td>Prerequisites: NET 226 NOS 130 Corequisites: SEC 160 Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan and implement intrusion detection solutions for networks and host based systems.</td>
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<tr>
<td>SEC 289</td>
<td>Security Capstone Project</td>
<td>1 4 3</td>
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<td>Prerequisites: SEC 220 Corequisites: SEC 150 This course provides the student the opportunity to put into practice all the skills learned to this point. Emphasis is placed on security policy, process planning, procedure definition, business continuity, and systems security architecture. Upon completion, students should be able to design and implement comprehensive information security architecture from the planning and design phase through implementation.</td>
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**SEC - Information Systems Security**

**SGD – Simulation and Game Development**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture</th>
<th>Lab</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>SGD 111</td>
<td>Introduction to SGD</td>
<td>2 3 3</td>
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<tr>
<td></td>
<td>Prerequisites: None Corequisites: None This course provides students with an introduction to simulation and game development. Topics include setting, storytelling, narrative, character design, interface design, game play, internal economy, core mechanics, game genres, AI, the psychology of game design and professionalism. Upon completion, students should be able to demonstrate knowledge of the major aspects of simulation and game design and development.</td>
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<tr>
<td>SGD 112</td>
<td>SGD Design</td>
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<td>Prerequisites: None Corequisites: None This course introduces the fundamentals of simulation and game design. Topics include industry standards and design elements for simulations and games. Upon completion, students should be able to design simple simulations and/or games.</td>
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<tr>
<td>SGD 113</td>
<td>SGD Programming</td>
<td>2 3 3</td>
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</tbody>
</table>
|             | Prerequisites: None Corequisites: None This course introduces the fundamentals of programming languages and tools employed in simulation and game development. Emphasis is placed on programming concepts used to...
create simulations and games. Upon completion, students should be able to program simple games and/or simulations.

**SGD 114 3D Modeling**  
Prerequisites: None  
Corequisites: None  
This course introduces the tools required to create three dimensional (3D) models. Emphasis is placed on exploring tools used to create 3D models. Upon completion, students should be able to create and animate 3D models using 3D modeling tools.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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<tbody>
<tr>
<td>SGD 122</td>
<td>SG Database Programming</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 124</td>
<td>MMO Programming</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 125</td>
<td>SG Artificial Intellig</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 126</td>
<td>SG Engine Design</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 127</td>
<td>SG 3D Animation</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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</tbody>
</table>

students should be able to produce character sketches, morph simple objects, create walk and run cycles and develop professional storyboards.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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</thead>
<tbody>
<tr>
<td>SGD 162</td>
<td>SG 3D Animation</td>
<td>2 3 3</td>
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<tr>
<td>SGD 163</td>
<td>SG Documentation</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 164</td>
<td>SG Audio/Video</td>
<td>2 3 3</td>
<td>SGD 113</td>
<td>None</td>
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<tr>
<td>SGD 165</td>
<td>SG Character Development</td>
<td>2 3 3</td>
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<tr>
<td>SGD 166</td>
<td>SG Physiology/Kinesiology</td>
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<td>SGD 113</td>
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<td>SGD 167</td>
<td>SG Ethics</td>
<td>3 0 3</td>
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<tr>
<td>SGD 168</td>
<td>Wireless SG Programming</td>
<td>2 3 3</td>
<td>SGD 213</td>
<td>None</td>
</tr>
</tbody>
</table>
engine construction and performance, sprite animation, control interactions, sound effects, music and wireless networks. Upon completion, students should be able to apply wireframe simulation/game programming concepts to the creation of multiplayer simulations and games.

**SGD 169 Linux SG Programming**  
**Lecture** 2  **Lab** 3  **Credit** 3  
*Prerequisites: None*  
*Corequisites: None*  
This course introduces the concepts of Linux programming for use in simulation and game development. Emphasis is placed on Linux programming and tools. Upon completion, students should be able to create a simple game or simulation using Linux.

**SGD 172 Virtual SG Environments**  
**Lecture** 2  **Lab** 3  **Credit** 3  
*Prerequisites: None*  
*Corequisites: None*  
This course covers the use of virtual reality tools and techniques in simulation and game development. Emphasis is placed on acquiring the skills necessary to create scalable virtual characters and environments for use in simulations and games. Upon completion, students should be able to create a simple game or simulation in a virtual environment.

**SGD 173 Lighting/Shading Algorithms**  
**Lecture** 2  **Lab** 3  **Credit** 3  
*Prerequisites: SGD 214*  
*Corequisites: None*  
This course introduces the concepts of various lighting and shading algorithms for use in simulation and game development. Topics include various tools used to create light and shadows. Upon completion, students should be able to apply knowledge of various lighting and shading algorithms to the creation of simulations and games.

**Sign Language**  
*(See ALS American Sign Language)*

**Small Engine Repair**  
*(See Corporate and Continuing Education section of this catalog. Call 704-330-6220 for course information.)*

**SOC - Sociology**  

**SOC 210 Introduction to Sociology**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: ENG 111*  
*Corequisites: None*  
This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

**SOC 213 Sociology of the Family**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: None*  
*Corequisites: None*  
This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse lifestyles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

**Note:** This course is a Writing Intensive Elective for UNCC.

**SOC 225 Social Diversity**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: None*  
*Corequisites: None*  
This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

**SPA - Spanish**

**SPA 111 Elementary Spanish I**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: None*  
*Corequisites: SPA 181*  
This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. When registering for this class, students will also need to register for SPA 181, Spanish Lab 1. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

**SPA 112 Elementary Spanish II**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: SPA 111 or consent of division director.*  
*Corequisites: SPA 182*  
This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. When registering for this class, students will also need to register for SPA 182, Spanish Lab 2. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

**SPA 120 Spanish for the Workplace**  
**Lecture** 3  **Lab** 0  **Credit** 3  
*Prerequisites: None*  
*Corequisites: None*  
This course offers applied Spanish for the workplace to facilitate basic communication with people whose native language is Spanish. Emphasis is placed on oral communication and careerspecific vocabulary that targets health, business, and/or public service professions. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA 151</td>
<td>Hispanic Literature</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Corequisites:</td>
<td>Eng 111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>This course includes selected readings by Hispanic writers. Topics include fictional and non-fictional works by representative authors from a variety of genres and literary periods. Upon completion, students should be able to analyze and discuss selected texts within relevant cultural and historical contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.</td>
<td></td>
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<tr>
<td>SPA 161</td>
<td>Cultural Immersion</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Corequisites:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>SPA 111</td>
<td></td>
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<tr>
<td>This course explores Hispanic culture through intensive study on campus and field experience in a host country or area. Topics include an overview of linguistic, historical, geographical, sociopolitical, economic, and/or artistic concerns of the area visited. Upon completion, students should be able to exhibit first-hand knowledge of issues pertinent to the host area and demonstrate understanding of cultural differences. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.</td>
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<tr>
<td>SPA 181</td>
<td>Spanish Lab 1</td>
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<tr>
<td>Corequisites:</td>
<td>SPA 111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.</td>
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<tr>
<td>SPA 182</td>
<td>Spanish Lab 2</td>
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<tr>
<td>Corequisites:</td>
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<td></td>
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<tr>
<td>Prerequisites:</td>
<td>SPA 181 or consent of division director.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corequisites:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.</td>
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<tr>
<td>SPA 211</td>
<td>Intermediate Spanish I</td>
<td>3</td>
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<tr>
<td>Corequisites:</td>
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<td></td>
<td></td>
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<tr>
<td>Prerequisites:</td>
<td>281</td>
<td></td>
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<tr>
<td>This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. When registering for this class, students will also need to register for SPA 281, Spanish Lab 3. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
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<tr>
<td>SPA 212</td>
<td>Intermediate Spanish II</td>
<td>3</td>
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<tr>
<td>Corequisites:</td>
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<tr>
<td>Prerequisites:</td>
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</tr>
<tr>
<td>Corequisites:</td>
<td>SPA 282</td>
<td></td>
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<tr>
<td>This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. When registering for this class, students will also need to register for SPA 282, Spanish Lab 4. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
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</tbody>
</table>

**Speech Communication**
(See COM Communication)

**Study Skills**
(See ACA Academic / Life Skills)
**SUR - Surgical Technology**

**SUR 110 Intro to Surg Tech**
- **Lecture**: 3
- **Lab**: 0
- **Clinic**: 0
- **Credit**: 3
- **Prerequisites**: None
- **Corequisites**: SUR 111

This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include: professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, physiology of wound healing, and biomedical sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

**SUR 111 Periop Patient Care**
- **Lecture**: 5
- **Lab**: 6
- **Clinic**: 0
- **Credit**: 7
- **Prerequisites**: None
- **Corequisites**: SUR 110

This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. Topics include surgical asepsis, sterilization/disinfection, and perioperative patient care. Upon completion, students should be able to demonstrate the principles and practices of aseptic technique, sterile attire, basic case preparation, and other relevant skills.

**SUR 122 Surgical Procedures I**
- **Lecture**: 5
- **Lab**: 3
- **Clinic**: 0
- **Credit**: 6
- **Prerequisites**: SUR 110 and SUR 111
- **Corequisites**: SUR 123

This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

**SUR 123 SUR Clinical Practice I**
- **Lecture**: 0
- **Lab**: 0
- **Clinic**: 21
- **Credit**: 7
- **Prerequisites**: SUR 110 and SUR 111
- **Corequisites**: 122

This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

**SUR 134 Surgical Procedures II**
- **Lecture**: 5
- **Lab**: 0
- **Clinic**: 0
- **Credit**: 5
- **Prerequisites**: SUR 123
- **Corequisites**: None

This course provides a comprehensive study of intermediate and advanced surgical specialties that students are exposed to in the second clinical rotation. Emphasis is placed on related anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

**SUR 135 SUR Clinical Practice II**
- **Lecture**: 0
- **Lab**: 0
- **Clinic**: 12
- **Credit**: 4
- **Prerequisites**: SUR 123
- **Corequisites**: SUR 134 and SUR 137

This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

**SUR 137 Professional Success Preparation**
- **Lecture**: 1
- **Lab**: 0
- **Clinic**: 0
- **Credit**: 1
- **Prerequisites**: SUR 123
- **Corequisites**: SUR 134 and SUR 135

This course provides job-seeking skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, and interviewing techniques. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification.

**SUR 210 Advanced SUR Clinical Practice**
- **Lecture**: 0
- **Lab**: 0
- **Clinic**: 6
- **Credit**: 2
- **Prerequisites**: SUR 137
- **Corequisites**: SUR 211

This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

**SUR 211 Advanced Theoretical Concepts**
- **Lecture**: 2
- **Lab**: 0
- **Clinic**: 0
- **Credit**: 2
- **Prerequisites**: SUR 137
- **Corequisites**: SUR 210

This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

**SRV - Surveying**

**SRV 110 Surveying I**
- **Lecture**: 2
- **Lab**: 6
- **Credit**: 4
- **Prerequisites**: MAT 121 and EGR 115
- **Corequisites**: None

This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments; demonstrate field note techniques, and apply the theory and practice of plane surveying.

**SRV 111 Surveying II**
- **Lecture**: 2
- **Lab**: 6
- **Credit**: 4
- **Prerequisites**: SRV 110
- **Corequisites**: None

This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calcula-
tions; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

**SRV 210 Surveying III**

Prerequisites: SRV 110 and SRV 210
Corequisites: CIV 125

This course introduces boundary surveying, land partitioning, and calculations of areas. Topics include advanced traverses and adjustments, preparation of survey documents, and other related topics. Upon completion, students should be able to research, survey, and map a line.

**SRV 230 Subdivision Planning**

Prerequisites: SRV 111, SRV 210, and CIV 211
Corequisites: None

This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

**SRV 240 Topographic / Site Surveying**

Prerequisites: SRV 210
Corequisites: None

This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

**SRV 250 Advanced Surveying**

Prerequisites: SRV 111 and SRV 210
Corequisites: None

This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.

**SRV 260 Field and Office Practices**

Prerequisites: Completion of three semesters of the Surveying Technology program
Corequisites: None

This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand the requirements of operating a professional land surveying business.

**Theatre**

(See DRA Drama/Theatre)

**TRF - Turfgrass Management**

Also see HOR – Horticulture Technology and COE Cooperative Education for additional course descriptions.

<table>
<thead>
<tr>
<th>TRF 110</th>
<th>Introduction Turfgrass Culture and Identification</th>
<th>3 2 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
<td></td>
</tr>
<tr>
<td>This course provides an in-depth study of turfgrass. Topics include principles of reproduction, growth development, species characteristics, establishment and maintenance of golf courses, and sports fields, and lawn applications. Upon completion, students should be able to identify turfgrass species through characteristics and reproductive stages and develop an establishment and maintenance plan for high quality turf areas.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TRF 120</th>
<th>Turfgrass Irrigation &amp; Design</th>
<th>2 4 4</th>
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</thead>
<tbody>
<tr>
<td>Prerequisites: None</td>
<td></td>
<td></td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers the basic techniques involved in the design, layout, installation, and use of turfgrass irrigation systems, components of the systems, materials available for use, and economic considerations. Upon completion, students should be able to complete a functional design for a turfgrass irrigation system.</td>
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</table>

<table>
<thead>
<tr>
<th>TRF 130</th>
<th>Native Flora ID</th>
<th>1 3 2</th>
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</thead>
<tbody>
<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
<td></td>
</tr>
<tr>
<td>This course covers identification of selected native ground covers and woodland trees by summer and/or winter characteristics. Emphasis is placed on mature age, fall colors, site adaptability, and habit of growth for special turf-related areas. Upon completion, students should be able to identify native plants by size and leaf, bud, twig, and limb formation.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TRF 152</th>
<th>Landscape Maintenance</th>
<th>2 2 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites:</td>
<td>Corequisites: None</td>
<td></td>
</tr>
<tr>
<td>This course introduces the tasks of landscape maintenance. Emphasis is placed on lawns, shrubs, trees, flowers, and ground covers. Upon completion, students should be able to maintain a landscape area on a year-round schedule.</td>
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</table>

<table>
<thead>
<tr>
<th>TRF 210</th>
<th>Turfgrass Equipment Management</th>
<th>1 4 3</th>
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<tbody>
<tr>
<td>Prerequisites: None</td>
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<tr>
<td>Corequisites: None</td>
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<tr>
<td>This course covers the operation and maintenance of specialized turfgrass management equipment. Topics include small engine use and repair; operation, maintenance, and repair of turfgrass management equipment; organization of shop areas; and safety considerations. Upon completion, students should be able to operate and maintain turfgrass management equipment.</td>
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</table>

<table>
<thead>
<tr>
<th>TRF 220</th>
<th>Turfgrass Calculations</th>
<th>2 0 2</th>
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<tbody>
<tr>
<td>Prerequisites: None</td>
<td></td>
<td></td>
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<tr>
<td>Corequisites: None</td>
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</tr>
<tr>
<td>This course introduces the specific math concepts and calculations necessary in the turfgrass industry. Emphasis is placed on calibration of equipment used in the application of fertilizers</td>
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</tbody>
</table>
and pesticides and calculation of solid materials used in construction. Upon completion, students should be able to correctly perform basic calculations and calibrations and estimate materials needed in specific professional turfgrass management situations.

TRF 230 Turfgrass Management Applications 1 2 2  
Prerequisites: None  
Corequisites: None  
This course introduces specific sports field design, installation, and maintenance. Topics include natural grass croquet courts and baseball, soccer, and football fields. Upon completion, students should be able to perform specific tasks in layout, field marking, and preparing for tournament play.

TRF 240 Turfgrass Pest Control 2 2 3  
Prerequisites: None  
Corequisites: None  
This course covers detection and identification of turfgrass pests with emphasis on methods of control or eradication. Topics include weeds, insects, diseases, and nematodes identification with an understanding of pesticides used, application procedures, and costs involved in control programs. Upon completion, students should be able to identify turfgrass pests, select the proper pesticide, develop pest control programs, and/or use integrated pest management.

TRF 250 Golf/Sport Field Construction 2 4 4  
Prerequisites: None  
Corequisites: None  
This course provides information for layout, materials, and construction of special recreation applications. Emphasis is placed on site selection, equipment, safety regulations, drainage, turfgrass species, and irrigation needs. Upon completion, students should be able to locate construction reference sites and develop drainage and irrigation plans from their own blueprints and topo map designs.

TRF 260 Advanced Turfgrass Management 3 2 4  
Prerequisites: TRF* 110  
Corequisites: None  
This course covers the principles and practices involved in turfgrass management. Topics include choosing the best management practice in mowing, pest control, fertilization, irrigation, traffic control, air control, budgeting, and materials procurement. Upon completion, students should be able to demonstrate knowledge of the principles covered and select and apply the best practices in turfgrass management.

WEB – WEB Technologies

WEB 110 Internet/Web Fundamentals 2 2 3  
Prerequisites: None  
Corequisites: None  
This course introduces basic markup language, various navigational tools and services of the Internet. Topics include creating web pages, using Internet protocols, search engines, file compression/decompression, FTP, E-mail, listservers, and other related topics. Upon completion, students should be able to deploy a web-site created with basic markup language, retrieve/decompress files, e-mail, FTP, and utilize other Internet tools.

WEB 111 Intro to Web Graphics 2 2 3  
Prerequisites: None  
Corequisites: None  
This course is the first of two courses covering the creation of web graphics, addressing problems peculiar to WWW display using appropriate software. Topics include web graphics file types, type conversion, RGB color, the browser-safe palette, elementary special effects, image maps, and other related topics. Upon completion, students should be able to create graphics such as banners buttons, backgrounds, and other graphics for Web pages.

WEB 115 Web Markup and Scripting 2 2 3  
Prerequisites: None  
Corequisites: None  
This course introduces client-side Internet programming using the current W3C-recommended presentation markup language and supporting elements. Topics include site management and development, markup elements, stylesheets, validation, accessibility, standards, browsers, and basic JavaScripting. Upon completion, students should be able to hand-code web pages with various media elements according to current markup standards and integrate them into websites.

WEB 119 Web Tech. Orientation 1 2 2  
Prerequisites: WEB 110  
Corequisites: None  
This introductory course provides an opportunity for students to develop the knowledge and skills required to succeed in the Internet Technologies program. Emphasis is placed on introducing students to the tools and resources available to them in the program, ranging from software tips, to planning a program of study to understand advising. Upon completion students should be familiar with all associated faculty, understand the program requirements, website hosting expectations, and have a firm grasp of the basic technologies and skills used in all subsequent Internet classes. Web Technologies students should take this course upon entering into the program.

WEB 120 Intro Internet Multimedia 2 2 3  
Prerequisites: None  
Corequisites: None  
This is the first of two courses covering the creation of Internet Multimedia. Topics include Internet multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create Internet multimedia presentations utilizing a variety of methods and applications.

WEB 140 Web Development Tools 2 2 3  
Prerequisites: None  
Corequisites: None  
This course provides an introduction to web development software suites. Topics include the creation of web sites and components using web development software. Upon completion, students should be able to create entire web sites and supporting components. This course focuses on the various tools used in web development including Adobe products.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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<tbody>
<tr>
<td>WEB 179</td>
<td>Java Web Programming</td>
<td>2 3 3</td>
<td>CIS 115 and DBA 110</td>
<td>None</td>
</tr>
<tr>
<td>WEB 180</td>
<td>Active Server Pages</td>
<td>2 2 3</td>
<td>CIS 115</td>
<td>None</td>
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<tr>
<td>WEB 182</td>
<td>PHP Prog. w/MySQL</td>
<td>2 2 3</td>
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<td>WEB 183</td>
<td>Perl CGI Programming</td>
<td>2 2 3</td>
<td>CIS 115</td>
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<tr>
<td>WEB 185</td>
<td>ColdFusion Programming</td>
<td>2 2 3</td>
<td>CIS 115</td>
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<tr>
<td>WEB 186</td>
<td>XML Technology</td>
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<tr>
<td>WEB 215</td>
<td>Advanced Markup and Scripting</td>
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<td>WEB 220</td>
<td>Advanced Multimedia</td>
<td>2 2 3</td>
<td>WEB 120</td>
<td>None</td>
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<tr>
<td>WEB 230</td>
<td>Implementing Web Services</td>
<td>2 2 3</td>
<td>WEB 110 or CIS 110</td>
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<tr>
<td>WEB 240</td>
<td>Internet Security</td>
<td>2 2 3</td>
<td>NET 110 or NET 125</td>
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<td>WEB 250</td>
<td>Database Driven Websites</td>
<td>2 2 3</td>
<td>DBA 110 and WEB 115 and CIS 115</td>
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<tr>
<td>WEB 260</td>
<td>E-Commerce Infrastructure</td>
<td>2 2 3</td>
<td>DBA 110 and WEB 115 and CIS 115</td>
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<tr>
<td>WEB 285</td>
<td>Emerging Web Technologies</td>
<td>2 2 3</td>
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</tbody>
</table>

This course introduces the development of dynamic, database-driven web applications using the java programming languages in its current standards. Topics include Object Oriented Programming, Java Server Pages (JSP), Servlets, database-interactions, and form handling. Upon completion, students should be able to create and modify java-based three-tier internet applications according to industry standards.

This course introduces Active Server Programming. Topics include Jscript, VBScript, HTML forms processing, and the Active Server Object Model. Upon completion, students should be able to create and maintain Active Server applications. This course will use VB or C# in the .net framework.

This course introduces the Perl Programming language. Topics include programming techniques using CGI script, input/output operations, sequence, iteration, selection, arithmetic operations, subroutines, modules, integrating database, pattern matching and other related topics. Upon completion, students should be able to design, code, test, and debug Perl language programs. Course will use Perl for web applications.

This course introduces ColdFusion Programming. Topics include installing a ColdFusion development environment, using CFQUERY tags to send and receive database information, creating and displaying a form, and other related topics. Upon completion, students should be able to design, code, test, and debug using a ColdFusion environment.

This course is designed to introduce students to XML and related internet technologies. Topics include extendible style language (XSL), document object model (DOM), extendible style sheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as a study of bad design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages.

This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support network applications. Upon completion, students should be able to design, code, debug, and document network-based programming solutions to various real-world problems using an appropriate programming language.

This course is designed to introduce students to XML and related internet technologies. Topics include Object Oriented Programming, Java Server Pages (JSP), Servlets, database-interactions, and form handling. Upon completion, students should be able to create and modify java-based three-tier internet applications according to industry standards.

This is the second of two courses covering Internet multimedia. Topics include use of advanced Internet multimedia applications. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards.

This course covers website and web server architecture. Topics include installation, configuration, administration, and security of web servers, services and sites. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards.

This course covers security issues related to Internet services. Topics include the operating system and the Internet service security mechanisms. Upon completion, students should be able to implement security procedures for operating system level and server level alerts.

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.

This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, securing transactions, use and verification of credit cards, publishing of catalogs, documentation, and site administration. Upon completion, students should be able to setup a working e-commerce Internet web site.

This course will explore, discuss, and research emerging technologies in the web arena. Emphasis is placed on exposure to up-and-coming technologies relating to the web, providing hands-on experience, and discussion of practical implications of
these emerging fields. Upon completion, students should be able
to articulate issues relating to these technologies.

WEB 287 Web E-Portfolio 1 2 2
Prerequisites: None
Corequisites: None
This course covers the creation and organization of a web-based e-portfolio that includes a resume, references, and comprehensive academic and work samples. Emphasis is placed on creating an e-portfolio with solid design and demonstrable content, the production of a resume and self-promotional materials, and interview techniques. Upon completion, students should be able to present their own domain with included professional e-portfolio elements of a resume, sample work, and related self-promotional materials.

WEB 289 Internet Technologies Project 2 2 3
Prerequisites:
Corequisites: None
This course provides an opportunity to complete a significant Web technologies project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete an Internet project from the definition phase through implementation.

**WLD - Welding**

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Lecture</th>
<th>Lab</th>
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<tbody>
<tr>
<td>WLD 110</td>
<td>Cutting Processes</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.</td>
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<tbody>
<tr>
<td>WLD 111</td>
<td>Oxy-Fuel Welding</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces the oxy-fuel welding process. Topics include safety, proper equipment setup, and operation of oxy-fuel welding equipment with emphasis on bead application, profile, and discontinuities. Upon completion, students should be able to oxy-fuel weld fillets and grooves on plate and pipe in various positions.</td>
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<tbody>
<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.</td>
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<tbody>
<tr>
<td>WLD 115</td>
<td>Shielded Metal Arc Welding (SMAW) (Stick) Plate</td>
<td>2</td>
<td>9</td>
<td>5</td>
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<tr>
<td>Prerequisites:</td>
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<td></td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with shielded metal arc welding electrodes. Upon completion, students should be able to perform shielded metal arc welding fillet and groove welds on carbon plate with prescribed electrodes.</td>
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<th>Credit</th>
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<tbody>
<tr>
<td>WLD 116</td>
<td>Shielded Metal Arc Welding (SMAW) (Stick) Plate/ Pipe</td>
<td>1</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>WLD 110, WLD 115</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course is designed to enhance skills with the shielded metal arc (SMAW) welding process. Emphasis is placed on manipulating skills with shielded metal arc welding electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.</td>
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<tr>
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<tbody>
<tr>
<td>WLD 117</td>
<td>Shielded Metal Arc Welding (SMAW) (Stick) Pipe</td>
<td>1</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>WLD 110, WLD 115</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course is designed to enhance skills with the shielded metal arc (SMAW) welding process. Emphasis is placed on manipulating skills with shielded metal arc welding electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.</td>
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<tbody>
<tr>
<td>WLD 121</td>
<td>Gas Metal Arc Welding (GMAW) (MIG) FCAW/ Plate</td>
<td>2</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.</td>
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<tbody>
<tr>
<td>WLD 122</td>
<td>Gas Metal Arc Welding (GTAW) (TIG) Plate/ Pipe</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>WLD 110, WLD 121</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.</td>
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<th>Lecture</th>
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<tbody>
<tr>
<td>WLD 131</td>
<td>Gas Tungsten Arc Welding (GTAW) (TIG) Plate</td>
<td>2</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safe equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.</td>
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<tbody>
<tr>
<td>WLD 132</td>
<td>Gas Tungsten Arc Welding (GTAW) (TIG) Plate/ Pipe</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>WLD 110, WLD 131</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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<tr>
<td>This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.</td>
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<tbody>
<tr>
<td>WLD 141</td>
<td>Symbols &amp; Specifications</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites:</td>
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<tr>
<td>Corequisites:</td>
<td>None</td>
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</table>
| This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion,
students should be able to read and interpret symbols and specifications commonly used in welding.

**WLD 143 Welding Metallurgy**  
Prerequisites: None  
Corequisites: None  
This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

**WLD 151 Fabrication I**  
Prerequisites: WLD 110, WLD 115, WLD 116, WLD 131, and WLD 141  
Corequisites: None  
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

**WLD 215 SMAW (Stick) Pipe**  
Prerequisites: WLD 110, WLD 115, or WLD 116  
Corequisites: None  
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions. Upon successful completion of all welding courses in the Welding diploma program and the Welding Technology program, the student in the last semester will be allowed to take an A.W.S. D1.1 Structural Welding Code Test on Mild Steel Pipe in the 6-G position, for a nominal fee, within this course.

**WLD 221 Gas GMAW (MIG) Pipe**  
Prerequisites: WLD 110, WLD 122  
Corequisites: None  
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform GMAW welds to applicable codes on pipe with prescribed electrodes in various positions.

**WLD 231 Gas Tungsten Arc Welding (GTAW) (TIG) Pipe**  
Prerequisites: WLD 110, WLD 132  
Corequisites: None  
This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

**WLD 251 Fabrication II**  
Prerequisites: WLD 151  
Corequisites: None  
This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

**WLD 261 Certification Practices**  
Prerequisites: WLD 110, WLD 115, WLD 121, WLD 131, and WLD 141  
Corequisites: WLD 116  
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for prequalified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes. Successful completion of prerequisite courses allows students in the Welding Technology Program to take weld tests in accordance with AWS QC 10, and/or AWS D1.1, and/or AWS B2.1.

**WLD 262 Inspection and Testing**  
Prerequisites: WLD 110, WLD 115, WLD 121, WLD 131, WLD 141  
Corequisites: WLD 116  
This course introduces destructive and non-destructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and non-destructive testing processes.

**WLD 265 Automated Welding/Cutting**  
Prerequisites: CIS 110, WLD 110 and WLD 121  
Corequisites: None  
This course introduces automated welding equipment and processes. Topics include setup, programming, and operation of automated welding and cutting equipment. Upon completion, students should be able to set up, program, and operate automated welding and cutting equipment.
CPCC Computer Training Instructor
Mark Rizzo

704.330.4223
www.cpcc.edu
Corporate & Continuing Education
704.330.4223
http://www.cpcctraining.org

Build a balance in your life through professional and personal growth.

Today’s competitive business environment requires that organizations employ a highly skilled and productive workforce. Corporate & Continuing Education (CCE) provides courses and programs that are either customized for a specific business or industry’s workforce or targeted to an individual’s career attainment, upgrade, or enrichment.

The courses and programs offered by CCE often lead to a professional designation, continuing education credits, or certification. The use of pre- and post-assessment tools allows CCE to maximize product offerings to meet specific training needs. The end result is a highly skilled staff to help build a company’s competitive advantage.

Working with CPCC’s extensive network of instructors and training facilities throughout Mecklenburg County, CCE can tailor course parameters, content, and duration to meet the specific needs and goals of an organization at a reasonable cost. CCE can also send instructors to a company’s facility anywhere in Mecklenburg County.

Corporate & Continuing Education also offers programs that foster civic, cultural, and personal enrichment within the community. Personal interest courses, offered at convenient times and locations, give adults the opportunity to explore and develop new interests or hobbies. By utilizing the resources of the college and community, these programs help improve and enhance the lives of individuals.

Explore the following course offerings to determine how CCE can meet your needs.

Program Areas & Courses

Automotive Related Training
704.330.5480

The Transportation Systems Technologies Division at CPCC offers a variety of training courses related to the repair and operation of vehicles and small engines. New classes may be added during the year.

Auto Body Repair
- Automotive Restoration
- Pathways Estimation Training
- Airbrush Painting
- Basic Auto Detailing

Automotive
- ASE Test Preparation
- Automotive Servicing for Service Consultants
- Basic Car Maintenance

Forklift
- Forklift Operation Certification

North Carolina Safety and Emissions Inspection Certification
- Safety and Inspection Initial Certification
- OBD II Inspection Initial Certification
- Safety Inspection Re-certification
- OBD II Inspection Re-certification

Small Engine Repair Skills
- Small Engine Repair
- Small Engine Overhaul

Certification Programs
704.330.4223

The following Continuing Education certifications are offered:

Fitness Professionals

Personal Trainer National Certification

Become a CERTIFIED PERSONAL TRAINER and work with clients one-on-one in fitness facilities. Participants engage in lectures including anatomy, exercise physiology, nutrition, musculoskeletal injuries, health assessments and more. Must hold current CPR certification.

Professionals

Call Center Customer Service

This program was designed with input from the area’s best customer service call centers. The Call Center Customer Service certificate is designed for those seeking an entry-level position as a customer service representative. Prerequisites for the program include a high school diploma, and basic knowledge of the keyboard and of grammar. At the conclusion of the program, students will have improved typing skills, an understanding of the Microsoft Office suite of products, and will be able to utilize strategies for effectively delivering customer service.

The Team Manager Call Center certificate is designed for those with at least 2 years of call center experience who are interested in learning needed skills to manage a team of personnel. This program covers time schedules, coaching, and other things needed to succeed as a manager of a call center team.

Certificate in Human Resources

These five (5) courses have been determined as essential topics for entry into the field of Human Resources:
- Fundamentals of Human Resources
- Basic Employment Law
- Employee Relations
- Benefits Administration
- Effective Recruitment & Selection

Certified Payroll Professional

CPP Review courses are designed for payroll professionals who want to study for the CPP exam. It is necessary to have at least 3 years’ payroll experience to become certified.
- Primary Payroll Skills
- Essential Payroll Skills
- Advanced Payroll Skills

Human Resources PHR/SPHR Preparation Review (SHRM)

This preparation review course is designed for those interested in obtaining their PHR or SPHR certification in Human Resources.

Project Management Certification

This in-depth project management course is designed to provide the skills and experience needed to successfully manage projects from initiation to completion. Specific course topics include targeting end objectives, project staffing, the 9 skills of successful project management, project time management, project quality management, project accounting, advanced project management tools.
Six Sigma Green and Black Belt Certifications

CPCC is proud to offer a Green Belt Certification for people working on project teams and a Black Belt Certification for those project leaders pursuing this national designation. Related course offerings include Statistical Process Control and Minitab.

**Hospitality**

**Catering Certificate**

For more information, call 704.330.4639.

This certificate is designed for the future caterer. Successful completion of the following two courses will prepare the student to become successful in launching their catering business through planning, analyzing, marketing and menu planning. This certificate program is 67 hours.

- The Catering Operation
- The Passionate Caterer

**Cruise Sales Certificate for the Travel Consultant**

This certificate is designed for the future cruise professional. Successful completion of the course, Anchor’s Aweigh, will prepare the student to become capable of planning and arranging cruise vacations.

**Travel Professional Certificate**

This certificate is designed for the future travel professional. Successful completion of the following two courses will prepare the student for employment through travel agencies and airlines.

- Travel Reservations (with use of Apollo/Galileo system)
- Home-Based Travel Agent

**Travel Professional Certificate – On-line**

This certificate is designed for the future travel professional. Successful completion of the six online courses provides an overview of the travel industry, terminology, expansion of product knowledge to plan and book air, hotel and car reservations using Sabre®RTS®

**Vacation Specialist Certificate – On-line**

This certificate is designed for the future travel professional. Successful completion of the five online courses will provide the student with the knowledge to sell vacation packages. The five courses include: The Cruise Market, Developing Specialty Vacation Packages, Selling Vacation Packages and Tours, ASTA Family Travel Specialist, and ASTA Travel Marketing Specialist.

**Wine Certification**

For more information, call 704.330.4639.

CPCC and the International Sommelier Guild offer an array of courses suited for all knowledge levels. The introductory courses, Wine Fundamentals 1 and 2, meets for 12 weeks, held once a week for a total of 72 hours; the next level, the Sommelier Diploma Program is an intensive 6 month course held once a week for a total of 188 hours. The International Sommelier Guild is the only professional body that certifies Sommeliers by direct instruction.

**Computer Training**

**704.330.4223**

[www.cpcctraining.org/computertraining](http://www.cpcctraining.org/computertraining)

Computer courses are designed for all levels of proficiency, from the novice to the networking professional. Our introductory classes help students gain basic computing skills, while our advanced classes help prepare students to become information technology professionals or to gain industry certifications. Classes are primarily taught by those with industry experience to make course material more relevant.

**Basic Computer Skills**

- Keyboarding
- MS Windows

**Microsoft Office Applications**

- MS Office suite
- MS Outlook
- MS Project

**Business Technology**

- Crystal Reports
- eMarketing
- eBay

**Digital Lifestyle**

- Digital Camera

**Graphics and Publishing**

- Adobe Acrobat
- Adobe GoLive
- Adobe InDesign
- Adobe Illustrator
- Adobe Photoshop
- Adobe Photoshop Elements

**Networking and Hardware**

- A+ Certification Preparation

**Programming**

- Visual Basic.NET

**Oracle Certification Prep**

- Oracle (OCA/OCP)

**Web Development**

- HTML
- Dreamweaver
- Flash
- AutoCAD
  - CAD Level I and II
  - 3d Drawing and Modeling

**Construction Institute**

**704.330.4421**

**Brick Mason**

**MAS 7001  Bricklaying Basics**

A course covering the fundamental techniques and practice in the building of brick walls, steps, corners, chimneys, and other brick structures. Emphasis is placed on the correct use of the mason’s trowel, level, and plumb line.
MAS 7002   Introduction To Brick Masonry

Brick Masonry Training is an intensive program designed to teach participants the fundamental knowledge and skills necessary to enter and advance in the brick mason’s trade. Major emphasis is placed on participant’s mastery of the correct procedures, methods, and techniques utilized in laying brick and block. In addition to instruction in the correct use of equipment, materials, and tools, participants will have extensive practice in laying brick and block with individualized instruction in order to help them develop their skill proficiency and production speed. The different types and uses of concrete mixing and joints are also covered.

During the final weeks of the course, participants will have the opportunity to further develop their skills.

Building Codes

CNT 7011   Comprehensive Review of the NC Residential Building Code

This course is designed for construction supervisors and others currently working in the industry. It includes a comprehensive review of those sections of the North Carolina Residential Building Code applicable to Mecklenburg County residential construction. The class also includes a review of applicable state and local code interpretations, and Mecklenburg County’s code inspection procedures. A County Code Enforcement Officer(s) will observe each class, and will conduct an inspection field trip where students will observe an actual code inspection, and have an opportunity to ask questions regarding the inspection and to discuss their concerns.

Building Contractor Licensing

BPR 7002   Residential Blueprint Reading and Estimating

A course covering the fundamentals of reading and interpreting residential blueprints and estimating the quantities of materials and labor required to construct a house.

CAR 7101   Home Construction Methods and Details

A course designed to assist the inexperienced builder to identify and evaluate information and procedures pertaining to home construction such as lot surveys, drainage, excavation and foundation construction, foundation wall, floor, wall and roof framing; appraise prefabricated walls and roof trusses, various types of duct work, heating and plumbing rough-in, electrical wiring; compare and select exterior wall coverings, plumbing-lighting-electrical fixtures and devices and hardware.

CAR 7130   Residential Contractors Exam Review

This course is a review of the laws, codes, and procedures covered by the General Contractor’s License Examination for residential and light construction.

CAR 7131   Building/Commercial Contractors Exam Review

This course is a review of the laws, codes and procedures covered by the General Contractor’s License Examination for commercial construction.

Building Trade Skills

Carpentry

CAR 7040   Qualified Framer

The Qualified Framer Program (QFP) allows candidates to learn carpentry and framing skills in short term with this competency and worksite-based program. Through cooperation with the local construction industry, QFP students are taught the construction fundamentals cluster (CIX 7005) as well as floor, wall, ceiling, and simple roof framing techniques on live work site labs (70%) and in the classroom (30%). Competency testing is required for area certification and will be both written and practical.

Additional advanced carpentry certification may be attempted depending on schedule and student. Upon completion, graduates can use our Career Center registry of licensed local contractors and employers who have listed jobs for trained and certified graduates.

CIX 7005   Carpentry I

This course provides construction apprentices, current craftworkers, and others with a certification of competency in basic construction knowledge. Topics covered in one semester include safety practices, construction math, blueprint reading, handtool use, power tool use, building materials, fasteners, and adhesives. Competency testing is required for area certification and will be both in written and practical form. This course is a required prerequisite to taking any of CPCC’s Carpentry series courses. It is recommended to potential employees by the construction industry for pre-employment qualification as well as employed craftworkers as certified pre-qualification for advanced certification coursework in your craft. Those interested in becoming handy, or handier, will also find this course useful.

CIX 7006   Carpentry II

This course provides construction apprentices, current craftworkers, and others with a certification of competency in basic floor; wall, ceiling, and roof framing. Completion of CIX 7005 Carpentry I, Wheels of Learning Construction Core, or documented UBC Step 2 is a prerequisite. Competency testing is required for area certification and will be both written and practical. Topics include platform floor, cantilevers, well openings, decking, snap-out, plating, detailing, metal and wood studding, RO’s, flat, vault and coffered ceilings, gable rafters and trusses, etc. Completion and certification in this course will allow trainees to pursue Carpentry III and IV Level course modules.

CIX 7007   Carpentry III

This course provides construction apprentices, current craftworkers, and others with a certification of competency in several areas of advanced carpentry techniques. Completion of CIX 7006 Carpentry II, Wheels of Learning Carpentry I, or documented UBC Step 3 is a prerequisite. Competency testing is required for area certification and will be both written and practical. Topics will focus on exterior finishing operations. To include shingle roof application, cornice and siding application, vinyl siding, hardboard siding, cement board siding, and shake shingle siding. Completion and certification in this course allows trainees to pursue Carpentry Level IV.

CIX 7008   Carpentry IV

Using the NCCER Wheels of Learning format this course provides a certification or competency in the basic application and installation of “Residential Interior Trim Work”. Topics include safety practices; Plan Details: floors, walls, and ceiling moldings; Door and Window Trim; pre-hung doors, interior locks, and casework installations. Competency testing required for area certification and shall be both written and practical form. This course is recommended to potential employees by the construction industry for employment qualifications, as well as for the currently employed craft worker as certified qualifications for advancement.
CIX 7015  Carpentry I-Spanish and Carpentry II-Spanish
Este curso provee enseñanza para aprendices en carpintería; carpinteros y otros con certificación competente en conocimientos básicos de construcción. Los topicos que se enseñan en un semestre incluyen medidas de seguridad, materiales de la construcción, los usos de herramientas, y cómo se usan en construcción, lectura de planos, el uso de herramientas, materiales de construcción y primera ayuda. Un examen de competencia es requerido para cada área y va a ser escrito y práctico. Este curso es un pre-requisito para tomar cualquier otro de los cursos de carpintería que ofrece el CPCC. Es recomendado para los trabajadores que deseen trabajar en la industria de la carpintería para cualificaciones de pre-empleo como también para empleados ya certificados y pre-cualificados para cursos de carpintería avanzados. Este curso se enseña en español.

CIX 7016  Carpentry II-Spanish
Este curso puede proveer a carpinteros principiantes, artesanos de Madera y a otros interesados en una certificación de carpintero capacitado en el básico de la carpintería para armar o construir en casas, multifamiliares o condominios, pisos, techos, techos exteriores, puertas y ventanas, armaduras de techos e instalación de techos de puertas y ventanas, armaduras de terrazas exteriores, aplicaciones de los trabajos de la carpintería para cualificaciones de pre-empleo como también para empleados ya certificados y pre-cualificados para cursos de carpintería avanzados. Este curso se enseña en español.

CIX 7020  New Construction Employee Orientation
This course provides safety training, an overview of the construction industry and its various trades along with entry level construction skills necessary for entry level employment in the construction industry. Topics covered include 10 hour OSHA Construction Compliance; construction math; introductory blueprint reading; hand and power tool use; and additional safety training.

VSI 7000  Vinyl Siding Installation
This class covers articles 90 to 240 introduction, definitions, branch circuits, feeders, calculations, outdoor services, and overcurrent protection.

CIX 7022  Commercial Drivers License Preparation
This class is designed to present the materials in the North Carolina Commercial Driver License Handbook. It is a review of the materials covered on the Commercial Driver License (CDL) written test.

Construction Safety
CNT 7010  Ten-Hour OSHA Construction Compliance
OSHA 10-Hour Construction course provides compliance safety training to prepare all employees for the hazards found in all disciplines of construction companies. This course is the primary training program of the OSHA Outreach Training Program. Learn your rights and responsibilities.

CNT 7012  10-Hour OSHA Outreach Course For Masonry
OSHA 10-Hour Masonry Safety Construction course provides compliance safety training to prepare all employees for the hazards found in masonry construction companies. This course is primary training program of the OSHA Outreach Training Program. Learn your rights and responsibilities.

CNT 7013  10-Hour OSHA Outreach Course For Roofing
OSHA 10-Hour Roofing Construction course provides compliance safety training to prepare all employees for hazards found on job sites. Attendees will gain understanding of OSHA regulations as they apply to roofing construction and development. Learn your rights and responsibilities.

CNT 7014  10-Hour OSHA Outreach For HVAC/ Plumbing
OSHA 10-Hour HVAC/Plumbing Safety Construction course provides compliance safety training to prepare all employees for the hazards found in HVAC/Plumbing construction companies. This course is the primary training program of the OSHA Outreach Training Program. Learn your rights and responsibilities.

CNT 7015  10-Hour OSHA Outreach Course For Electricians
OSHA 10-Hour Electricians Construction course provides compliance safety training to prepare all employees for hazards found on job sites. Attendees will gain an understanding of OSHA regulations as they apply to electrician construction and development. Learn your rights and responsibilities.

CNT 7016  OSHA Scaffolding Competent Person
The federal OSHA regulation requires employers to ensure that each employee whose employment involves being on scaffolding is trained to recognize the hazards associated with the type of scaffold being used and to understand the procedures which must be followed to control or minimize those hazards. This course is designed to highlight the requirements of the regulation and to familiarize workers with the various types of scaffolding and how to construct them in a safe and usable manner.

CNT 7017  OSHA-Fall Protection
Program is designed to provide each participant with requirements and techniques for fall protection from one level to another. Each participant will receive a course manual, a copy of the pertinent OSHA standards, OSHA interpretations, and a checklist on fall protection.

CNT 7021  30-Hour OSHA Construction Training
This course provides compliance safety training to prepare all employees for the hazards found in construction companies. This course is the primary training program of the OSHA Outreach Training Program for those having safety responsibilities.

Electrical Code Courses
ELX 7050  National Electrical Code I
This class covers articles 90 to 240 introduction, definitions, branch circuits, feeders, calculations, outdoor services, and overcurrent protection.

ELX 7051  National Electrical Code II
This class covers articles 250 (Chapters 4, 5, 6, 7 and 8): grounding conductors, conduits, and all wiring methods.
PLU 7006  Basic Plumbing

This course provides an introduction to the basic methods, tools, and materials used to install plumbing pipe work and plumbing fixtures. Primary emphasis will be placed on plumbing systems for residential buildings.

PLU 7015  Backflow Valve Testing

This course will develop entry level skills and knowledge for backflow assembly field tester. A working knowledge of the causes and principles of backflow and backflow prevention will be demonstrated. Recognizing proper backflow prevention assembly application, installation, and operation is stressed. Record keeping and backflow program responsibilities are also covered. Student should have knowledge of hydraulic principles and laws, along with plumbing code requirements. Reading, math, and mechanical skills are also needed.

PLU 7016  Backflow Prevention Assembly and Tester Recertification

This course will focus on reviewing the basic skills and knowledge for a backflow assembly field tester. The student must have completed a CMUD (Charlotte Mecklenburg Utility Department) approved course in cross connection control and require recertification of original certificate.

PLU 8000  Residential/Commercial Plumbing Level I

This class provides plumbing apprentices and those entering the trade with a certificate of completion in basic plumbing. The topics covered include safety, construction math, hand and power tool use and blueprint reading with emphasis in each of these areas on plumbing. Competency testing is required and will be both in written and practical form. This class is the prerequisite for the plumbing series of classes.

Customized Training for Manufacturing & Information Technology Production

704.330.4657

Manufacturing and processing companies and those that design and program computers and telecommunications systems may request state funding assistance from CPCC. The state-funded program, Focused Industrial Training (FIT), is designed to assist companies with training needs assessment, development of customized training plans, and incumbent worker training.

The training or service assistance is intended to help these companies become more productive and more competitive. It is directed toward skilled and semi-skilled production employees and front-line leaders who need to update their skills and technical knowledge because of technological changes. Instruction is customized for specific training need and may accommodate small classes that cannot be conducted through other program areas. Typically, assessment and instruction is performed on-site at production facilities to better serve employer needs.
Health and Community Services

*Drug Screening, criminal background checks, immunization records, and medical physical are required in some healthcare programs.

Accelerated Job Training Programs

The following programs are short-term job training programs. These programs may be completed in one to two semesters. Certificates of completion are awarded at the end of the training programs. All courses are patterned on requirements by national or state certifying bodies, enabling participants to sit for state or national certifying examinations. These programs are recognized by local employers, who hire many trainees upon completion of course requirements.

- Dietary Manager
- Medical Office Administrative Procedures
- Medical Reimbursement Specialist
- Hospital Nursing Secretary
- Medical Transcription
- Phlebotomy Training
- Pharmacy Technician
- Assisted Living Administrator
- Healthcare Activity Directors for Nursing Homes
- Nurse Aide I
- Wastewater Treatment Certification Grades 1 and 2
- Wastewater Treatment Certification Grades 3 and 4

Upgrade Skills

The following courses are designed to help upgrade skills of healthcare professionals:

- Coronal Polishing for Dental Assistants II
- Radiographic Certification for Dental Assistants
- Radiology for Dental Assistants
- CFC Certification for HVACR Tech
- Certified Procedural Coder (CPC) Exam Review
- Advanced Coding
- Medical Keyboarding
- Exploring Medical Language
- Servsafe
- Advanced Transcription
- Medical Transcription Formatting/Editing

Institute for Entrepreneurship
704.330.4223

The Institute for Entrepreneurship expands the College’s role in supporting small business owners and in promoting entrepreneurship as a career option for students and the community. The Institute offers continuing education in business related topics with programming, activities and events for participants who want to start or grow a small business. The college serves students who gain skills and knowledge in curriculum programs, as well as those served through Corporate & Continuing Education.

The Institute is also a member of the statewide Small Business Center Network, a NC community college initiative with a vision to foster and support entrepreneurship, small business training and economic development in local communities across the state. Locally, the Institute is a member of the BizHub Network, a non-profit entity promoting linkages between regional service providers and small business clients.

Components of the Institute include:

- Continuing Education courses (non-credit) focused on critical “how to” skills with classes ranging from start up and financing to marketing and product development. Also offered is a certificate course in Entrepreneurship.
- Introductory seminars, workshops, forums to promote awareness and answer student questions
- Small business networking events to showcase small business owners, their services and products
- Resource Center and lending library collection as well as Web-based research stations, periodicals, templates, videos and more
- Individual counseling to assist those interested in starting a business and referrals for those who need additional skills or consulting

Language & Culture
704.330.4223

Continuing Education language courses are designed with a communicative approach strongly emphasizing listening and speaking skills. Beginning courses are offered in three levels: Level I requires little or no prior knowledge of the language; Level II requires communication in short sentences or phrases; Level III requires basic conversational skills. Intermediate courses are designed to be taught in the target language with little or no conversation in English.

- French: Beginning I, II
- German: Beginning I, II
- Italian: Beginning I, II
- Spanish: Beginning I, II or III; Intermediate Spanish I
- Beginning Chinese (Mandarin)

Customized occupational training for various businesses and professions is also available through consultation. CPCC’s Corporate & Continuing Education is a Licensed Official Registered Provider of Command Spanish® in Charlotte and Mecklenburg County. This program provides skills to enhance job-specific communication in a variety of industries. These courses range from 8 hours in length to 30 hours depending on need. Contact 704.330.4660.

Conversations in English

Conversations in English is a series of courses designed for adults who wish to become better speakers of the English language. These courses enhance personal skill and confidence in the expression of thoughts and ideas in English for speakers of other languages. It is designed for those who have already mastered basic English skills and are ready for developing additional vocabulary and expression to build fluency in English conversations. Visit http://www.cpcctraining.org/esl or call 704.330.4628.

Leadership, Management, and Professional Development
704.330.4223

These professional development courses provide workforce education and training to address specific skill areas. Our customer-driven and learning-centered approach focuses on developing and enhancing professional skills needed in today’s diverse and fast-paced business environment. Leadership and management offerings are customizable for delivery to businesses and organizations per consultation. Courses range from 3 hours to 90 hours in length.

APICS

CPM exam preparation review courses are designed for those professionals in operations and inventory management...
who would like to earn the Certified in Production and Inventory Management professional designation. A new weekend format allows a concentrated review of topics. Visit: http://www.cpcctraining.org/apics or call 704.330.4661.

- Basics of Supply Chain Management
- Master Planning of Resources
- Detailed Scheduling and Planning
- Execution and Control of Operations
- Strategic Management of Resources

**C.P.M.**

CPCC offers purchasing and supply management professionals training programs covering the full range of strategic purchasing and supply management skills. The C.P.M. exam preparation review courses are designed for those procurement and supply management professionals who aspire to earn the Certified Purchasing Manager designation. Visit http://www.cpcctraining.org/cpm or call 704.330.4628.

- Module 1: The Purchasing Process
- Module 2: The Supply Management Environment
- Module 3: Supply Management for Value Enhancement
- Module 4: Management

**Certified Business Manager**

The CBM program prepares participants to take the 4 part CBM exam to earn the CBM designation. The CBM Designation validates the mastery of business management knowledge, skills, and abilities. It provides a minimum level and common base of knowledge required of all business managers in functional areas in all industries worldwide. It is a masters-level professional certification based on an MBA curriculum. The CBM Exam consists of four parts:

- Part 1 The Core Exam
- Part 2 The Functional Exam
- Part 3 Integrated Exam
- Part 4 The Capstone Exam

**Lifetime Learning Institute**

**704.330.6624**

The Lifetime Learning Institute’s purpose is to advance the lifetime educational, personal, and career development of midlife and older adults consistent with their needs, interests, abilities and efforts. The institute offers workshops, seminars, courses, and conferences for those in midlife and beyond who are facing life and career transitions. These offerings are a blend of experiential and educational.

Aging boomers are going to revolutionize the face of aging in the next ten to fifteen years, and will be the age group that embraces the concept of lifelong learning and re-training. Retiring at 65 may not be an option for many aging boomers – not only because of financial constraints, but also because this will be a healthier older population than we have ever seen.

**Midlife Career Transitions**

Through self-exploration and career/work assessments, those in midlife can choose a series of workshops and seminars to address questions of what is next in life after a lay-off or perhaps another career transition.

**Life Transitions at Midlife**

Midlife and beyond bring many life transitions such as “empty nest”, downsizing living spaces, life planning for the reality of living longer. These courses offer ways to learn more about these transitions, and how to prepare for a longer and more productive life in the elder years.

**Looking Back to Move Forward**

History - personal, societal, and political - can inform our individual and collective futures. These courses give learners a time to reflect on where they have come from, and what they are moving towards in their lives. The institute offers lectures and lunch-and-learns with historians, as well as workshops and seminars using reflective writing and poetry to “take stock” of our lives.

**Exploring the Arts**

The institute offers seminars, discussion groups, and workshops that give learners an opportunity to experiment with possible vocations and avocations within the arts. The institute offers opportunities to meet local artists, attend theater productions, and go “behind the scenes” of the art world.

**Journeys**

The institute offers travel explorations with educational and experiential components.

**Holistic Health and Wellness @ Midlife and Beyond**

The focus of these offerings is a holistic approach to pursue preventive activities that educate learners about the aging process, and to incorporate healthy living into the second half of life.

**Logistics & Supply Chain Certificate Program**

**704-330-4628**

www.cpcctraining.org/logistics

This certification program is designed for those interested in developing a career in the logistics, distribution, or supply chain field. The core courses and electives in this program explore the process that is primarily concerned with the flow of products and information between supply chain member organizations (procurement of materials, transformation of materials into finished product, and distribution of that product to end customers). Essentially, supply chain management is planning the coordination and delivery of products and services to customers.

Courses include:

- **Required**
  - Logistics & Supply Chain Analysis
  - Project Management
  - Process Management
  - Business Ethics

- **Electives**
  - Six Sigma Green Belt Certification
  - Maintenance

**Manufacturing and Technical Skills**

**704.330.4660 or 4413**

These courses address specific skill sets and hands-on applications needed in an industrial production environment. Many are adapted from longer courses to fit individual, operational and safety requirements found in manufacturing. Often courses are customized with company-specific content and the course delivery is adjusted to meet production and shift schedules.

Some examples include:

- Basic shop practices
- Basic assembly and hand tools
- Blueprint reading
- Geometric Dimensioning and Tolerance
• Shop math and metrology
• Basic and advanced machining
• Basic electricity
• Maintenance training
• Welding
• Quality inspection
• Statistical Process Control
• Problem-solving techniques
• Team work and communication
• Lean Manufacturing
• ISO/QS Awareness
• Internal Auditor
• Plant Safety (First Aid/CPR, bloodborne pathogens, HazCom, lock out/tag out, ergonomics, powered lift truck and others)
• OSHA 501 General Industry 10-hour and 30-hour

New and Expanding Industry
704.330.4657

CPC actively supports economic development and job growth by offering training and services to new and expanding business and industry in Mecklenburg County. State resources allow CPC to customize, design and deliver workforce training at no cost to eligible companies. The state-funded program, New and Expanding Industry Training (NEIT), is nationally recognized for excellence and offers employers customized development and training for new hires.

The funding level for this new hire training is typically based on the number of jobs created, the skill and wage levels of the positions, and the level of capital investment. Employer eligibility includes growth by at least 12 new positions in a one-year period.

The program can support a full range of needs customized to each project. A sample plan funded by NEIT might include job task analysis, pre-employment, job orientation, safety, on-the-job training by in-house trainers, equipment, process and skill training, quality, problem-solving, leadership, and train-the-trainer. Projects may be funded for up to three years.

Notary Public
704.330.4223

Notary Public classes provide a thorough introduction to the statutes that regulate the acts of North Carolina notaries. The purpose of the education requirement is to enable the applicant to become a responsible, qualified candidate for Notary Public commission. Book must be purchased prior to class.

On-Site Training Solutions
704.330.4660
http://www.trainingmatrix.com/cpcc
and click the red box to access

If your organization is looking for training solutions, we offer many courses including Leadership, Customer Service, and Command Spanish®, which can be held on site or at one of our many campus locations. Please visit our online Training Matrix®, which allows you to search for courses by subject as well as key-word searches according to your specific training needs. We also offer assessments to help identify the most efficient and effective training solution possible.

Let CPCC be your one-stop training solution provider.

Personal Interests
704.330.4223

www.cpcctraining.org/personal_interest

Take time away from work and home to develop new and existing interests and create adventure in your life. Enroll in a Personal Interests course to enhance your physical, mental, social, professional, and personal well being.

Art

Develop new artistic interests and reveal talents by taking: Watercolor, Stained Glass, Basic Oil & Acrylic Painting, Colored Pencils, Painting with Pastels, Studio Painting, Portrait Drawing and Bead Jewelry Making.

Financial Planning


Home & Garden

Create your own unique living space with Home Decorating, Designing Your Dream Kitchen, Feng Shui, Flower Arranging, Wedding Flowers, Sewing, Quilting, Home Landscaping and Gardening.

Home Gourmet

The Charlotte Cooks program invites you into our newest kitchen and bakeshop to learn from highly qualified chef instructors. Here are samples of the courses we offer for all skill levels and enjoyment: preparing trifles in Chocolate Unrobed, how to chop and dice in Knife Skills, create Great Hors d’Oeuvres for your next party, become a grill master in the Art of Grilling, and bake tasty desserts in our Fresh Fruit Pie and Classic Cake classes.

Recreation & Leisure

Channel your energies into one of our many recreation courses designed to challenge your mind and lift your spirits. Aviation, Social Dance, Shag, Egyptian Belly Dance, Salsa, Pilates, Tai Chi, Yoga, Self-Protection for Women, Golf, Tennis, Kayaking, Motorcycle Riding, Boot Camp Fitness, and Cardio Kickboxing.

The Wine Cellar

The Charlotte Cooks program invites you into our classroom to gain practical wine knowledge in How to Taste Wine Like a Pro, learn the secrets to drink recipes in Bartending 101, and when you plan your next party take Let’s Entertain with Party Beverages where you will get help with drink recipes with a chart of amounts to purchase.

Travel and Cultural Arts

Simplify and maximize your travel experiences with How to Be a Smart International Traveler, what rail product to purchase in the Europe by Train course, gain knowledge about specific destinations before you travel and take Photographing the Iconic West for hints and tips on travel photography.

Writing

Uncover your hidden passion in a writing class: Publishing, Writing for Children, Writing for Magazines, Writing A Romance Novel, Creative Writing, Short Story Marathon, Poetry, and other selected topics.
Professional Development
704.330.4223

These professional development courses are designed to provide skill-building strategies in specific areas of interest.

- Getting Things Done — Managing Time
- Improving Communication Through Speaking and Listening
- Dealing with Difficult People
- Assertiveness Without Fear
- Punctuation and Grammar
- Business Writing

Professional Meeting Management Certification Program

This 72-hour certificate program is designed to prepare participants for the workforce as entry-level meeting and/or event planners. Participants will gain a thorough understanding of the meeting and event planning industry and required competencies through classroom study as well as practical application, guest lectures, and field trips. Specific course topics include: the state of the industry and upcoming trends, creating and managing an event plan, managing human resources, financial management, negotiation, managing vendor contracts, site selection, marketing, logistics and risk management, ethics, and the increasingly important role of technology in the meeting and event planning function. This program blends classroom instruction with required online assignments. Visit: www.cpcctraining.org/pmm

Public Safety

Continuing Education for Healthcare Providers

The following courses are designed to provide continuing education for healthcare professionals. Continuing Education Units are provided for all participants. Courses adhere to standards and guidelines of the American Heart Association, the American Academy of Pediatrics, and the National Association of EMS Physicians.

- Advanced Cardiac Life Support
- Advanced Cardiac Life Support Renewal
- Advanced Cardiac Life Support Instructor
- Advanced Medical Life Support
- Advanced Medical Life Support Renewal Instructor
- EMT Renewal
- EMT Methodology of Teaching
- Pediatric Advanced Life Support
- Pediatric Advanced Life Support Renewal

CPR and First Aid

American Heart Association Basic Life Support Courses (CPR) are available for healthcare providers, the general public and any business or industry. All CPR courses are sanctioned by the American Heart Association. Central Piedmont Community College is an American Heart Association Community Training Center. Any class may be arranged for business, industry or personal groups. The following courses may be provided individually or in any combination. For more information please call: 704.330.6508.

- CPR Adult/Infant/Child
- CPR Adult/Infant Child Renewal
- CPR Instructor
- Infant/Child First Aid & CPR
- Adult First Aid & CPR
- First Aid/CPR for Adult, Infant, Child

Quality Program
704.330.4223
http://www.cpcctraining.org/quality

Lean manufacturing

Experience first-hand the power of Lean Manufacturing in this fun 8-hour course and factory simulation developed by NCSU Industrial Extension Service. Learn, then apply principles and practices immediately in your organizations to reduce waste and remove non-value added activities. This course is especially relevant to front-line leaders, hourly production employees, and work teams.

Process Management

This course is designed to help participants develop a roadmap that will enable process owners and teams to identify, define, manage and improve their business processes. The class will address current and new processes and will help participants learn how to ensure they meet business performance objectives.

Real Estate/Appraisal/Mortgage Banking/Insurance
704.330.4223

The Real Estate Institute offers courses designed for the real estate, appraisal, and mortgage banking professional including pre-licensing education designed by the North Carolina Real Estate Commission, the North Carolina Appraisal Board and the North Carolina Banking Commission. New classes may be added during the year.

Appraisal

- Introduction to Real Estate Appraisal (R-1)
- Valuation Principles and Practices (R-2)
- Applied Residential Property Valuation (R-3)
- Uniform Standards of Professional Appraisal Practice (R-4) (USPAP)
- Introduction to Income Property Appraisal (G-1)

Insurance

Pre-licensing courses are offered for persons seeking licensure requirements with the North Carolina Department of Insurance and the National Association of Security Dealers (NASD).

- Life and Health Agent
- LUTC Designation
- Medicare Supplement/Long Term Care
- Property and Liability Agent
- Customer Service/Account Manager (Property & Liability)
- Claims Adjuster
- Series 6, 63, and 7

Mortgage Banking

- Introduction to Underwriting
- Introduction to Loan Origination
- Marketing for Loan Officers
- Introduction to Mortgage Lending
- Conventional Mortgage Loan Processing
- Self Employed Borrowers
- FHA/VA Financing
- Principles of Construction Lending
- Understanding Appraisals
- Understanding Credit
Professional Skills
• Becoming A Professional Real Estate Assistant

Real Estate Pre-licensing/Sales
• Fundamentals of Real Estate (Salesperson)
• 60-hour Real Estate Broker Course
• Real Estate License Examination Review (Salesperson or Broker)

Real Estate Sales/Broker Continuing Education
• Mandatory Real Estate Update
• Buyer Representation in Real Estate
• Environmental Issues in Your Real Estate Practice
• Ethics and Real Estate
• Fair Housing
• Property Management and Managing Risk
• Red Flags, Property Inspection Guide
• Risk Management

Teacher Education
704.330.4391
www.cpcc.edu/teacher
The Teacher Education program responds to the needs of educators offering a great variety of innovative and effective courses and programs designed to maximize student learning. Courses are offered online, at night, Saturdays, and during the day at any of our campus locations. They range from 10 to 30 hours in length and are not transferable. Each course offers continuing education units for renewal of a North Carolina Reaching Licensure. Program areas are:
• Teacher Education CEUs
• New Teacher CPCC-UNCC 2 Year Transfer
• Online CEUs
• Administrator Certificate

Detailed information about each program, text books or a current schedule of courses is available on the teacher education website at http://www.cpcctraining.org/teacher.

For information about NC license renewal process contact the North Carolina DPI at 1.800.577.7994.

Content Area Courses:
• Attention Deficit Disorder
• Block Scheduling Instructional Strategies
• Brain Based Learning
• Classroom Management Strategies
• Cooperative Learning
• Critical and Creative Thinking Skills
• Current Children’s Literature
• Differentiating Instruction in Mixed Ability Classrooms
• Discipline Strategies: As Tough as Necessary
• Gifted Education
• Integrating the Curriculum
• Interactive Writing
• Motivating Students
• Multiple Intelligences
• Reading in Elementary Classrooms
• Reading, Writing, and Technology in Upper Grades
• Spanish for Educators
• Strategies for Improving Academic Performance
• Strategies for Struggling Readers
• Successful and Effective Teaching
• Super Teaching Methods
• Using Music in the K-12 Classroom

Technology Courses:
• Introduction to Windows
• The Basics of Computers and Microsoft Office
• Integrating Technology into the Classroom
• Internet for Teachers
• Introduction to Excel for Teachers
• Introduction to Word for Teachers
• Introduction to PowerPoint for Teachers
• Microsoft FrontPage for Educators
For information about offering Teacher Education courses on-site for local schools, contact 704.330.4394.

Workplace Basic Skills
704.330.4554
These classes are set up for business and industry at company work sites.
• Math Upgrading
• Reading Improvement
• General Educational Development (GED) Preparation
• Writing Improvement
• Upgrading Your Grammar
• English as a Second Language (ESL) — Beginning, Intermediate, and Advanced
• Math for ESL Students
The NCCCS Enhanced Accountability Measures 2005-2006

In January 1999, the North Carolina Community College System responded to the special provision in Senate Bill 1366, Section 10.5. The following is a report on Central Piedmont Community College and its performance on the twelve accountability measures for 2005-2006.

1. Progress of basic skills students:
   Benchmark: 75% of Basic Skills students will progress within the level, complete the level or advance to the next level.
   76.6% of Central Piedmont’s 12,753 literacy students progressed, completed or advanced.

2. Performance of college transfer students:
   Benchmark: the percent of the combined community college cohort in good academic standing (GPA of 2.0 or greater) would be equal to that of native UNC rising sophomores and juniors.
   78.9% of CPCC transfer students were in good academic standing after transferring to a UNC school. 86.8% of the combined native UNC students were in good academic standing.

3. Passing rates for licensure & certification examinations:
   Benchmark: an aggregate institutional passing rate of 80% for all first-time test-takers plus no passing rate falling below 70% for any single exam.

<table>
<thead>
<tr>
<th>Exam Area</th>
<th># Taking Exam</th>
<th># Passing Exam</th>
<th>Percent Passing</th>
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<tr>
<td>Basic Law</td>
<td>16</td>
<td>15</td>
<td>91%</td>
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<tr>
<td>Enforcement</td>
<td>20</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>Physical Therapy</td>
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<tr>
<td>Assistant</td>
<td>12</td>
<td>9</td>
<td>75%</td>
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<tr>
<td>Emerg. Med.</td>
<td>186</td>
<td>179</td>
<td>96%</td>
</tr>
<tr>
<td>Tech (EMT)</td>
<td>26</td>
<td>23</td>
<td>88%</td>
</tr>
<tr>
<td>Nursing</td>
<td>224</td>
<td>206</td>
<td>92%</td>
</tr>
<tr>
<td>Real Estate - Sales</td>
<td>484</td>
<td>452</td>
<td>93.4%</td>
</tr>
</tbody>
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4. Passing rates of students in developmental courses:
   Benchmark: 70% passing rate for all developmental courses (grades A-C).
   For the 2004-2005 academic year, 75.8% of the College’s 9,341 course completers in developmental courses received a grade of A, B or C.

5. Success rate of developmental students in subsequent college-level courses:
   Benchmark: no significant difference in the college level course grades between those students who took developmental studies and those who did not (English, reading and math only).
   Students were divided into two groups by course, those who passed the college-level course and those who did not pass the college-level course. No differences occurred in grades in the subsequent college-level English, reading and math courses between those who took developmental English or math and those who did not.

6. Program enrollment:
   Benchmark: an average of 10 students annually over a three-year period for all programs.
   No programs had an annual average of less than 10 students that was not an intentional low enrollment program.

7. Student satisfaction of program completers and non-completers:
   Benchmark: 90% of the combined respondents (completers and non-completers) will report being satisfied with the quality of the college’s programs and services.
   Of the 870 completers and non-completers surveyed, 98% were satisfied with the quality of CPCC programs and services.

8. Goal completion of program completers:
   Benchmark: 95% of program completers and non-completers will report goal completion.
   Of the 604 completers surveyed, 100% reported full or partial goal completion.

9. Curriculum student retention and graduation
   Benchmark: 60% of students from a given fall term will persist (graduate or be retained).
   Of the 11,081 program declared students in Fall 2005, 62% graduated or returned in Fall 2006.

10. Employer satisfaction with graduates:
    Benchmark: 85% of employers will report being satisfied with the preparation of graduates.
    This survey was collected by the NCCCS. Of those who returned surveys, 49 were employers of CPCC graduates and of those, 100% were satisfied.

11. Employment status of graduates
    Benchmark: 95% of students will be employed.
    Of the 420 2004-5 graduates identified, 99.6% were employed within one year of graduating.

12. Business/industry satisfaction with customized training
    Benchmark: 90% of businesses surveyed will report being satisfied with the services they receive from their local community college (survey conducted by NCCCS).
    Of the 295 surveys from the Central Piedmont’s region, 96% were satisfied with customized training provided by CPCC.
Faculty and Professional Staff

CPCC Simulation and Game Development Instructor
Farhad Javidi

704.330.2722
www.cpcc.edu
### Faculty and Professional Staff
#### Full Time

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>ABERCROMBIE, ANDREA H.</td>
<td>Director Registrar, Enrollment and Student Services</td>
<td>B.S. 1994 and M.Ed., 1995 (Clemson University).</td>
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<tr>
<td>ADAMS, PAT, LD Counselor, Disability Services</td>
<td>B.A., 1977 (Bennett College); M.Ed., 1981 (Winthrop University).</td>
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<tr>
<td>ADAMS, PHIL, Program Coordinator and Instructor, Human Resources Development (HRD)</td>
<td>B.A., 1965 (Wofford College); M.S., 2004 (Adult Education NC A&amp;T State University).</td>
<td></td>
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<tr>
<td>ADDISON, MARCIA, Assistant Director Library Acquisitions, Library Services</td>
<td>B.A., 1986 (Winthrop University); M.L.I.S., 1999 (University of South Carolina).</td>
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<td>AEGURS, OSCAR, Instructor, Financial Services Institute, Corporate and Continuing Education</td>
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<tr>
<td>AJSUT, ANN AHU, Instructor, Information Technology</td>
<td>B.S., 1985 (Middle East Technical University); M.S., 1997 (Montclair State University); Oracle Certified DBA.</td>
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<tr>
<td>ALBANESI, J. MICHAEL, Instructor, Mathematics</td>
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<tr>
<td>ALEXANDER, LORI A., Associate Dean, Project Management, Office of Instruction</td>
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<td>ALEXANDER, THOMAS, Instruction, GM ASEP Coordinator, Automotive Systems Technology</td>
<td>A.A.S., 1995 (Central Piedmont Community College); A.S.E. Master Technician; A.S.E. :-1 Advanced Engine Performance Specialist.</td>
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<tr>
<td>ANDERSON, JOEY A., Instructor, Mathematics</td>
<td>B.S., 1992 (Clemson University); M.A.T., 1997 (South Carolina State University).</td>
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<td>ANTHONY, THOMAS E., Instructor, Mathematics</td>
<td>B.A., 1980 (Pfeiffer College); M.A. 1986 (Appalachian State University).</td>
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<tr>
<td>APGAR, DONNA G., Director of Language Learning Technologies, Foreign Languages and Academic ESL</td>
<td>B.A., 1964 (Tufts University); M.A., 1972 (Middlebury College).</td>
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<tr>
<td>ARCHER, ROBERT R., Instructor, GM-ASEP Coordinator, Transport Systems Technologies</td>
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<tr>
<td>ARMEN'TROUT, BRENDA BORROR, Instructor, Arts &amp; Communication</td>
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<tr>
<td>A'TTREY, JASPAL S., Instructor, Information Technologies</td>
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<td>AUSTIN, MARGARET L., Division Director, Public Safety</td>
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<tr>
<td>BAILEY, JAMES H., Telecommunications Specialist, CPCC TV &amp; Media Services</td>
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<tr>
<td>BAKER, DAVID, Director, Accounts Payable/Bank Reconciliation</td>
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<td>BAKER, MONA H., Program Coordinator, Workplace Basic Skills, Community Development</td>
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</table>
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BLACKMON, EDWARD TERRELL, Director, Financial Services Institute, Corporate and Continuing Education
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<tr>
<th>Name</th>
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<tr>
<td>BROWN, EMMA W.</td>
<td>Associate Vice President, Student Life</td>
<td>B.S., 1968 (Barber Scotia College); M.Ed., 1975 (University of North Carolina-Charlotte).</td>
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<tr>
<td>BROWN, DAVID A.</td>
<td>Instructor, Health &amp; P. E. &amp; Recreation</td>
<td>B.S., 1973 (University of Massachusetts); M.S., 1982 (Mankato State University).</td>
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<td>BROWN, PATRICIA</td>
<td>Instructor, Criminal Justice</td>
<td>B.S., 1982 (St. Augustine’s College); Department of Justice General Instructor Certification, North Carolina Certified Detention Officer.</td>
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<tr>
<td>BROOKS, DEBBIE</td>
<td>Director, Financial Aid/Veterans Affairs</td>
<td>A.B., 1974 (York Technical College); B.S., 1996 (Limestone College); M.S., 2000 (Pfeiffer University).</td>
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<td>BROOKS, MONIQUE</td>
<td>Counselor, Counseling Services</td>
<td>B.A., 1993 (University of North Carolina-Greensboro); M.A., 2000 (East Carolina University).</td>
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<td>BROWN, PATRICIA</td>
<td>Coordinator, Basic Skills Operations</td>
<td>B.A., 1979 (University of South Carolina).</td>
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<td>BRASWELL, MARTHA SANDERS</td>
<td>Instructor, Engineering Technologies</td>
<td>Bachelor of Architecture, 1961 (North Carolina State University).</td>
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<td>BRIGGS, PHILIP</td>
<td>Instructor, Applied Technologies</td>
<td>A.G.E., 1994; A.A., 1996 (Central Piedmont Community College); B.S., 1997 (Western Carolina University); Unlimited Electrical Contractors License.</td>
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<td>BRINNIER, WILLIAM D.</td>
<td>Instructor, Behavioral &amp; Social Sciences</td>
<td>B.S., 1977 (Union College); M.A., 1985 (Marist College).</td>
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<td>BROOKS, DEBBIE</td>
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<td>B.S., 1968 (Barber Scotia College); M.Ed., 1975 (University of North Carolina-Charlotte).</td>
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</table>
CHILDRESS, FAYE B., Instructor, Mathematics
B.S., 1969 (West Virginia Institute of Technology); M.Ed., 1975 (University of North Carolina-Charlotte).


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<th>Name</th>
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<tr>
<td>FAGAN, REBECCA BRAY</td>
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<td>FLORES, CATHERINE</td>
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<td>FRENCH, JANIE C.</td>
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<td>FRIAR, JEFFERY E.</td>
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<td>GALVAN, PEDRO A.</td>
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<td>Gauze, Jeane</td>
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<td>Gay, Melvin L.</td>
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<td>George, Kayla M.</td>
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<thead>
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<th>Name</th>
<th>Title and Institution</th>
<th>Degrees and Institutions</th>
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<tbody>
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<td>TAYLOR, DONALD F.</td>
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<td>Name</td>
<td>Position</td>
<td>Educational Background</td>
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Coleman, Geneva R
Conston, Marcia
Conway, Jennifer Lynn
Cox, Deborah S
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Derck, Amy Pritchard
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**Glossary**

The explanations below define words that are frequently used at Central Piedmont Community College.

**Academic Advisor:** A member of the faculty in a specified program who works with students in that program to help them reach their educational goals.

**Academic Intervention:** The status of students working for a degree, diploma, or certificate when their program GPA in any semester is below Standards of Progress required for the number of semester hours they attempted.

**Academic Suspension:** The status of students working for a degree, diploma, or certificate after they have been on Academic Probation their program GPA remains below Standards of Progress.

**Adult High School (AHS):** A program offered in cooperation with the public school system. A diploma is awarded upon program completion and passing of the North Carolina Competency Test.

**Advisement Week:** A week each semester, prior to registration, when students are encouraged to meet with their faculty advisors and program counselors.

**Associate Degree:** A document issued to a student signifying completion of a two-year curriculum/program.

**Associate in Arts (AA):** A degree granted for planned programs of study consisting of a minimum of 64 semester hours and a maximum of 65 semester hours of college transfer courses.

**Associate in Applied Science (AAS):** A degree granted for planned programs 64-76 semester hours course work to provide entry-level employment education. An AAS program must include a minimum of 15 hours of general education and a minimum of 49 hours of major courses with numbers 110-199 or 210-299.

**Associate in Fine Arts (AFA):** A degree granted for planned programs of study consisting of a minimum of 64 semester hours and a maximum of 65 semester hours of college transfer courses, with an emphasis on the arts.

**Associate in General Education (AGE):** A degree which is designed for the academic enrichment of students who wish to broaden their education, with emphasis on personal interest, growth and development. The program may include both university transfer and non-transfer courses.

**Associate in Science (AS):** A degree granted for planned programs of study consisting of a minimum of 64 semester hours and a maximum of 65 semester hours of college transfer courses, with emphasis on the natural sciences.

**Basic Studies:** Pre-college courses that include Adult Basic Literacy Education (ABLE), Adult Basic Education (ABE), Adult High School Diploma (HSD), Developmental Studies courses, General Educational Development (GED), Limited English Proficiency, and Workplace Basic Education.

**BioNetwork:** A statewide initiative that connects community colleges across North Carolina, providing specialized training, curricula, and equipment to develop a world-class workforce for the biotechnology, pharmaceutical, and life science industries.

**Business, Health, and Technology Programs:** Certificate programs (less than one year), diploma programs (one year), and Associate in Applied Science Degree programs (two years or more). Some completed two-year degrees may transfer to four-year colleges or universities. Consult with a faculty advisor or program counselor regarding transferability.

**Certificate:** A program comprised of 12-18 semester hours of courses designed to provide entry-level employment training.

**Chief Academic Officer (CAO):** The person at the local college level who bears the primary responsibility for all areas of curriculum programming.

**Classification of Instructional Programs Codes (CIP Codes):** Nationally recognized codes to classify instructional programs for educational research and funding purposes.

**Colleague:** A software package with enhancements and ancillary third-party products designed to interconnect the functions at the college level and to manage processes that are shared by the colleges and the System Office. Colleague will be phased in with cohorts of colleges being added each year through 2007.

**College Information System (CIS):** A two-part system to interconnect all facets of NCCCS records – commonly differentiated as Colleague and Data Warehouse.

**College Transfer Programs:** The programs intended for transfer to senior institutions including the Associate in Arts, Associate in Science, and Associate in Fine Arts.

**Common Core Courses:** Those courses that have been identified as part of a guaranteed transfer articulation with the University of North Carolina system. See Comprehensive Articulation Agreement.

**Common Core Curriculum:** The set of statewide uniform courses from which North Carolina community colleges must choose their curriculum course offerings.

**Continuing Education:** A part of the lifelong learning mission of NCCCS, these programs provide opportunities for specific job training or retraining, basic skills education and improved use of leisure time.
**Continuing Education Unit (CEU):** A unit of credit toward specific certification awarded for continuing education courses in collaboration with the certifying agency.

**Cooperative Education (Co-Op):** Cooperative Education is an academic program that integrates classroom studies with practical experience in business, industry, public and community agency work situations. The Co-Op experience is concurrent with or in alternation with academic studies, may be paid or unpaid, and awards students academic credit.

**Corequisite:** A course that must be taken during the same term as the course that required the corequisite.

**Corporate and Continuing Education:** A division of CPCC that offers continuing education and extension courses for local businesses, for upgrading skills, or for personal enrichment. These courses have 7000-8000 numbers; some offer C.E.U.’s.

**Course Description:** A brief description of what is taught in the course and what the student should be able to do upon completion. Classroom hours, laboratory hours, clinic or co-op hours, credits earned, and prerequisite/corequisite (if needed) are listed.

**Credit:** The number of units earned upon completing a curriculum course, measured in semester hours.

**Curriculum (also called a program):** A set of courses designed to prepare a student either to enter the workforce immediately upon completion or to transfer to a degree program at a four-year college or university. Depending upon the length of the program, a degree, diploma, or certificate is awarded upon completion.

**Curriculum Improvement Project (CIP Project):** A two-year project with state-wide representation to assess the current employer needs for a particular program area and revise courses and curriculum standards as required to meet the employer needs.

**Curriculum Review Committee (CRC):** A committee of academic officers and presidents that serves as an arm of the State Board of Community Colleges, with the specific purpose of maintaining the curriculum courses in the Combined Course Library. This committee is charged with the responsibility of keeping the curriculum courses in the Combined Course Library current while guarding against proliferation of course duplications.

**Data Warehouse:** A massive database that stores five years of raw data. Standard reports with a fixed “snapshot” of data at a given date are available through menu/standard command options. Ad hoc reports are based on data in the warehouse on the day extracted; consequently, Ad hoc results vary as colleges update records.

**Developmental Studies Courses:** Pre-college courses (identified with a beginning 0 digit) that prepare students for college-level courses.

**Diploma:** A program comprised of 36-48 semester hours, including a minimum of 6 hours general education, which provide entry-level employment training.

**Distance Learning (DL):** Organized delivery by means other than face-to-face classroom contact, such as via internet, information highway, or telecourse.

**Drop/Add:** A period during registration when students may change their class schedules without penalty. See Schedule Adjustment.

**Early College High Schools:** – Small autonomous schools where students earn an associate degree or two years of college credit.

**Elective Course:** A course that the student may choose to take to meet diploma/degree requirements, as distinguished from required courses. Some electives are specified within areas, such as Technical Electives, Humanities/Art Electives; others are Free Electives.

**Faculty Advisor:** A member of the faculty in a program who is assigned as an advisor to students in that program to help them meet their educational goals.

**Fall Break:** A short break in mid-fall semester when the College is open but classes are suspended.

**Final Examination Week:** A period of time at the end of each semester when instructors may schedule final examinations. The examination schedule is published with the Class Schedule so that students will know at the time of registration when the examination will be.

**Focused Industrial Training (FIT):** A program that allows colleges to work with local industries to assess a company’s employee training needs and to develop training that is uniquely designed to meet the needs of that particular employer.

**Full-Time Equivalency (FTE):** The number of hours equivalent to the hours one student is enrolled for the normal academic year of spring and fall terms. This method enables colleges to recognize the impact of part-time students as an aggregate.

**Full-Time Student:** A student enrolled for 12 or more credits during fall and spring terms and for 9 or more credits during summer term.

**General Education Courses:** These courses, required in all degree programs, ensure that graduates have the necessary general knowledge, abilities, and intellectual skills commensurate with their degrees.

**General Education Development (GED):** A program which provides instruction and testing for adults to complete their high school equivalency.

**General Occupational Technology (GOT):** A curriculum which is unique to an individual student’s particular needs for employability skills.

**Grade Point Average (GPA):** The total number of grade points earned (A=4; B=3; C=2; D=1; F=0) divided by the total number of semester hours attempted.

**Huskins Bill Courses:** Community courses delivered to high school students through a contractual arrangement with the local education agency.
In-State Student: A legal resident of North Carolina.

Lab Fee: An additional charge for some classes that have labs as part of the course structure. Lab fees are used exclusively by the division to purchase supplies and equipment for the lab to which the fees are applied.

Lateral Entry Teachers: Professionals who have a bachelor’s degree, have met State qualifications, and hold K-12 teaching positions while seeking initial licensure.

Learn and Earn: A new format for high schools, most of which are located on community college campuses. They offer the opportunity for graduates to leave after five years with not only a high school diploma, but also with either a college transfer associate degree or two years of transferable college credit. Early college high schools and middle college high schools are part of this initiative.

Middle College High Schools: Small autonomous schools where students take both high school and college credit courses, but are not guaranteed an associate degree or two years of transferable credit.

New and Expanding Industry Training (NEIT): A program of customized to provide training to employees of new and expanding industries in North Carolina.

North Carolina Administrative Code (NCAC): The administrative regulations that ensure compliance with North Carolina laws.

North Carolina Information Highway (NCIH): A network of interconnected sites to provide simultaneous interaction among those sites for classes, meetings, forums, etc.

Out-of-State Student: A legal resident of a state other than North Carolina, or a legal resident of a foreign country.

Part-Time Student: A student enrolled for fewer than 12 credits during fall and spring terms and for fewer than 9 credits during summer term.

Prerequisite: Any course that must be completed before enrolling in the course requiring the prerequisite.

Program: See Curriculum.

Program Description: Information about the program including the official definition, degree/diploma/certificate awarded, admissions processing, and a list of courses in that curriculum.

Program GPA: The grade point average of a student in the courses that are required for completion of a program. To remain in good academic standing, students must maintain a program GPA in accord with the hours for which they enroll, as prescribed by the CPCC Grading Policy. Students must have a final program GPA of 2.0 (C) in order to graduate.

Program of Study (POS): A listing of the exact courses that a college plans to offer to fulfill the requirements of a curriculum program.

Schedule Adjustment: A time during the first week of each term when students may drop or add classes without penalty.

Semester Hour Credits (SHC): Credit assigned to a course that represents the contact in a normal 16-week semester, based on formulas for class, lab, work, and clinical methods of instruction.

Spring Break: A short break in mid-spring semester when the College is open but classes are suspended.

Standards of Progress: Guidelines that are part of CPCC’s Grading Policy and include requirements for students in degree, diploma, and certificate programs to maintain good academic standing. These standards include completion of courses, minimum program GPA, and minimum semester GPA. When students do not meet these standards, they are placed on Academic Probation or Academic Suspension and they work more closely with their faculty advisor or program counselor in order to reach their educational goals.

State Board of Community Colleges (SBCC): The governing body of the North Carolina Community College System.

Transcript: A student’s official academic record.

Transferability: The acceptability for credit of a course or program by another college or university.

Transfer Advisory Committee (TAC): A committee comprised of community college and university representatives who administer the Comprehensive Articulation Agreement.

Transfer Programs: See College Transfer Programs.

Tuition: The amount of money a student must pay at the time of registration for each hour of academic credit based on the student’s residency classification.

Virtual Learning Community (VLC): A service of the North Carolina Community College System that provides courses for the colleges in the system to use for distance education.
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