A Message from the President

Welcome to Wake Technical Community College!

Welcome, students! You are here because you want more – more knowledge, better employment opportunities, higher earning potential, greater job satisfaction, broader interests, sharper skills, new adventures. Wake Tech’s administrators, faculty, and staff are committed to helping you achieve your goals and making your time at Wake Tech engaging and enriching. We think you’ll find it life-changing.

Wake Tech operates in accordance with its core values – respect, responsibility, critical thinking, communication, and collaboration. As part of our accreditation process with the Southern Association of Colleges and Schools, we have examined every aspect of the programs and services we provide with a focus on quality. We have established a system of excellence in which everyone is accountable and held to the highest of standards.

Our college-wide quality enhancement efforts have a common goal: helping students! We teach critical thinking skills along with course content in all subject areas, preparing students for whatever lies ahead by strengthening their abilities to analyze and evaluate. We continuously upgrade classroom and laboratory technology so that we can offer students the latest tools for success. We have structured our student services programs to be more responsive to changing needs. Our faculty and staff keep up with new instructional techniques and trends through innovative professional development and leadership training programs. Our community partnerships with other schools and organizations expand each year, bringing a wealth of new options and opportunities for our students as they take their next steps.

We’re glad you’ve chosen Wake Tech as the next part of your journey, and we think you’ve come to the right place. Whatever your destination, we want to help you get there.

Sincerely,

Dr. Stephen C. Scott
President
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<th>SERVICE/LOCATION</th>
<th>WEB ADDRESS</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Campus:</strong> 9101 Fayetteville Road (401 S), Raleigh, NC 27603</td>
<td><a href="http://maincampus.waketech.edu/">http://maincampus.waketech.edu/</a></td>
<td>919-662-3400</td>
</tr>
<tr>
<td><strong>Health Sciences Campus:</strong> 2901 Holston Lane, Raleigh, NC 27610</td>
<td><a href="http://healthsciencescampus.waketech.edu/">http://healthsciencescampus.waketech.edu/</a></td>
<td>919-231-4500</td>
</tr>
<tr>
<td><strong>Western Wake Campus:</strong> 3434 Kildaire Farm Road, Cary, NC 27518</td>
<td><a href="http://westerncampus.waketech.edu/">http://westerncampus.waketech.edu/</a></td>
<td>919-335-1000</td>
</tr>
<tr>
<td><strong>Business &amp; Industry Center:</strong> 3434 Kildaire Farm Road, Cary, NC 27518</td>
<td><a href="http://conted.waketech.edu/schedules/bic.php">http://conted.waketech.edu/schedules/bic.php</a></td>
<td>919-335-1001</td>
</tr>
<tr>
<td><strong>Northern Wake Campus:</strong> 6600 Louisburg Road Raleigh, NC 27616</td>
<td><a href="http://northerncampus.waketech.edu/faqs.php">http://northerncampus.waketech.edu/faqs.php</a></td>
<td>TBA</td>
</tr>
<tr>
<td><strong>Adult Education Center:</strong> 1920 Capital Boulevard, Raleigh, NC 27604</td>
<td><a href="http://basicskills.waketech.edu/AHS/index.php">http://basicskills.waketech.edu/AHS/index.php</a></td>
<td>919-715-3434</td>
</tr>
<tr>
<td><strong>State Personnel Development Center (SPDC):</strong> 101 West Peace Street, Raleigh, NC 27603</td>
<td><a href="http://www.osp.state.nc.us/train.htm">http://www.osp.state.nc.us/train.htm</a></td>
<td>919-733-2474</td>
</tr>
<tr>
<td><strong>GENERAL INFORMATION</strong></td>
<td><a href="http://www.waketech.edu/">http://www.waketech.edu/</a></td>
<td>919-662-3500</td>
</tr>
<tr>
<td><strong>CALENDARS/DEADLINES</strong></td>
<td><a href="http://calendars.waketech.edu/">http://calendars.waketech.edu/</a></td>
<td>919-662-3500</td>
</tr>
<tr>
<td><strong>ADMISSIONS</strong></td>
<td><a href="http://admissions.waketech.edu/">http://admissions.waketech.edu/</a></td>
<td>919-866-5420</td>
</tr>
<tr>
<td><strong>ADVISING</strong></td>
<td><a href="http://admissions.waketech.edu/askanadvisor.php">http://admissions.waketech.edu/askanadvisor.php</a></td>
<td>919-866-5474</td>
</tr>
<tr>
<td><strong>BASIC SKILLS</strong> (GED, Adult High School, etc.)</td>
<td><a href="http://basicskills.waketech.edu/">http://basicskills.waketech.edu/</a></td>
<td>919-866-5280 \ 919-715-3434</td>
</tr>
<tr>
<td><strong>CONTINUING EDUCATION</strong></td>
<td><a href="http://conted.waketech.edu/">http://conted.waketech.edu/</a></td>
<td>919-866-5800</td>
</tr>
<tr>
<td><strong>CURRICULUM EDUCATION</strong></td>
<td><a href="http://curred.waketech.edu/">http://curred.waketech.edu/</a></td>
<td>919-662-3500</td>
</tr>
<tr>
<td><strong>DISTANCE EDUCATION</strong></td>
<td><a href="http://distanceed.waketech.edu/">http://distanceed.waketech.edu/</a></td>
<td>919-866-5618</td>
</tr>
<tr>
<td><strong>DUAL ENROLLMENT</strong> (High School &amp; College at the same time)</td>
<td><a href="http://admissions.waketech.edu/dualenroll.php">http://admissions.waketech.edu/dualenroll.php</a></td>
<td>919-866-5425</td>
</tr>
<tr>
<td><strong>ITS Services and Support</strong> (Helpdesk/ EagleCruiser/WebAdvisor, etc.)</td>
<td><a href="http://its.waketech.edu/service.php">http://its.waketech.edu/service.php</a></td>
<td>919-866-7000</td>
</tr>
</tbody>
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Information subject to change -

F 07-07
# Wake Technical Community College
## Resources and Services

Department of Counseling Services... *promoting student success and progress towards attainment of educational goals*

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>MAIN (401 S) CAMPUS LOCATION</th>
<th>PHONE</th>
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<tr>
<td>Advising:</td>
<td></td>
<td></td>
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<tr>
<td>Pre-Curriculum</td>
<td>Student Services, Room 252 <a href="http://advising.waketech.edu/staff.php">http://advising.waketech.edu/staff.php</a></td>
<td>866-5471</td>
</tr>
<tr>
<td>Advising:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College/University Transfer</td>
<td>Student Services, Rooms 252 &amp; 254 <a href="http://advising.waketech.edu/staff.php">http://advising.waketech.edu/staff.php</a></td>
<td>866-5474</td>
</tr>
<tr>
<td>Advising:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer and Engineering, Business, and Applied Technologies</td>
<td>Student Services, Room 128 <a href="http://advising.waketech.edu/staff.php">http://advising.waketech.edu/staff.php</a></td>
<td>866-5420</td>
</tr>
<tr>
<td>Cashier's Office</td>
<td></td>
<td>866-5902</td>
</tr>
<tr>
<td></td>
<td></td>
<td>662-3400</td>
</tr>
<tr>
<td>Computer Labs</td>
<td><a href="http://students.waketech.edu/computerlabs.php">http://students.waketech.edu/computerlabs.php</a></td>
<td>662-3309</td>
</tr>
<tr>
<td></td>
<td>Note: Main Open Computer Lab located in Pucher-LeMay Hall Room 151: Main Campus (No Phone)</td>
<td>212-3836</td>
</tr>
<tr>
<td></td>
<td></td>
<td>662-3256</td>
</tr>
<tr>
<td>Counseling:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic, Career, and Personal</td>
<td>Student Services, Room 143 <a href="http://counseling.waketech.edu/">http://counseling.waketech.edu/</a></td>
<td>866-5460</td>
</tr>
<tr>
<td>Disability Support Services</td>
<td></td>
<td>866-5670</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>Student Services, Room 015 <a href="http://financialaid.waketech.edu/">http://financialaid.waketech.edu/</a></td>
<td>866-5417</td>
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<tr>
<td>Individualized Learning Center</td>
<td>Individualized Learning Center Building <a href="http://ilc.waketech.edu/">http://ilc.waketech.edu/</a></td>
<td>866-5276</td>
</tr>
<tr>
<td>Job Placement / Co-op Office</td>
<td></td>
<td>866-5693</td>
</tr>
<tr>
<td>Library</td>
<td>Library Education, First Floor <a href="http://library.waketech.edu/">http://library.waketech.edu/</a></td>
<td>866-5644</td>
</tr>
<tr>
<td>Photo I.D.</td>
<td>Student Services, Room 121F <a href="http://studentactivities.waketech.edu/idbadges.php">http://studentactivities.waketech.edu/idbadges.php</a></td>
<td>866-5405</td>
</tr>
<tr>
<td>Registration &amp; Records Services</td>
<td></td>
<td>866-5700</td>
</tr>
<tr>
<td>SGA (Student Activities)</td>
<td>Student Services, Room 121G</td>
<td>866-5942</td>
</tr>
<tr>
<td>Veteran’s Information</td>
<td>Student Services, Room 015</td>
<td>866-5401</td>
</tr>
</tbody>
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Information subject to change -

Edited for Catalog 7/07 JS/rvf

Wake Technical Community College

Volume XVIII No. 3 July 2007
PROFESSIONAL DEVELOPMENT FOR ENGINEERS
The North Carolina Board of Registration for Professional Engineers and Land Surveyors has approved the Engineering Technology Division to serve as an approved sponsor of Continuing Professional Competency activities for Professional Engineers and Registered Land Surveyors licensed by the State of North Carolina. Status as approved sponsors means that courses and programs offered by the Engineering Technology Division will be acceptable to the Board for Professional Development Hours (PDH).
SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS ACCREDITATION
Wake Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; Telephone number 404-679-4501) to award the associate degree.

Specific Program Accreditation

Automotive Systems Technology Accreditation
The college’s Automotive Systems Technology associate degree program is accredited by National Institute for Automotive Service Excellence (ASE). All eight areas meet the strict industry standards required for ASE MASTER certification. This is the highest level of achievement recognized by the National Institute for Automotive Excellence (ASE).

Criminal Justice Program Accreditation
The college’s Criminal Justice Technology program is accredited by the North Carolina Criminal Justice Education and Training Standards Commission.

Culinary Technology Program Accreditation
The college’s Culinary Technology program is accredited by the American Culinary Federation.

Dental Assisting and Dental Hygiene Programs Accreditation
The college’s programs in Dental Assisting and Dental Hygiene have received accreditation (without reporting requirements) status from the American Dental Association, Commission on Dental Accreditation. A copy of the appropriate accreditation standards and/or the Commission’s policy and procedure for submission of complaints may be obtained by contacting the Commission at 211 East Chicago Avenue, Chicago, IL 60611-2678, or by calling 1-800-621-8099, extension 4653.

Heavy Equipment and Transport Technology/Construction Equipment Systems Program Accreditation
The college’s Heavy Equipment and Transport Technology/Construction Equipment Systems Program is accredited by Accreditation Board of the Associated Equipment Distributors.

Medical Assisting Program Accreditation
Wake Technical Community College’s Medical Assisting Diploma program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Curriculum Review Board of The American Association of Medical Assistants Endowment (CRB-AAMAE).

Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL 33756 (Telephone number 727-210-2350).

National Accreditation Agency for Clinical Laboratory Sciences Program Accreditation
The National Accreditation Agency for Clinical Laboratory Sciences (NAACLS) is the accrediting agency for the Medical Laboratory Technology program and the approving agency for the Phlebotomy program. The NAACLS is located at 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631 (Telephone number 773-714-8880).

Radiography Program Accreditation
Wake Technical Community College’s program in Radiography is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The JRCERT is located at 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182 (Telephone number 312-704-5300).

Surgical Technology Program Accreditation
The college’s Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) on recommendation of the Accreditation Review Committee for Surgical Technology (ARC-ST).
American Association of Collegiate Registrars and Admissions Officers (AACRAO)
American Association of Community Colleges (AACC)
American Association of Medical Assistants Endowment (AAMAE)
American Institute of Architects (AIA)
American Massage Therapy Association (AMTA)
American Mathematical Association of Two-Year Colleges (AMATYC)
Association Community College Business Officials (ACCBO)
Association of Community College Facility Operations (ACCFO)
Association of Community College Trustees (ACCT)
Carolinias Association of Collegiate Registrars and Admissions Officers (CACRAO)
Chamber of Commerce - Apex
Chamber of Commerce - Cary
Chamber of Commerce - Fuquay-Varina
Chamber of Commerce - Garner
Chamber of Commerce - Holly Springs
Chamber of Commerce - Knightdale
Chamber of Commerce - Morrisville
Chamber of Commerce – Raleigh
Chamber of Commerce - Rolesville
Chamber of Commerce - Wake Forest
Chamber of Commerce - Wendell
Chamber of Commerce - Zebulon
College and University Professional Association For Human Resources (CUPA-HR)
College Transfer Program Association (CTPA)
A Cooperative for the Advancement of Community-Based Postsecondary Education (COMBASE)
Committee on Accreditation of Allied Health Education Programs (CAAHEP)
Community College Business Officers (CCBO)
Cooperative Education and Internship Association, Inc. (CEIA)
Council for Resource Development
International Council on Hotel, Restaurant, and Institutional Education (ICHRIE)
League for Innovation Community College Leadership Institute League Alliance Services
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
National Association of College and University Business Officers (NACUBO)
National Association of Colleges and Employers (NACE)
National Association Educational Buyers (NAEB)
National Association of International Educators (NAFSA)
National Association of Student Financial Aid Administrators (NASFAA)
National Council for Continuing Education and Training (NCCET)
National Fire Protection Association
National HEP Camp Association
National Organization for Associate Degree Nursing (N-OADN)
National Restaurant Association/NC Restaurant Association
National Institute for Staff & Organizational Development - The University of Texas at Austin (NISOD)
North Carolina Association of Colleges and Employers (NCACE)
North Carolina Association of Community College Trustees (NCACCT)
North Carolina Association of Coordinators of Veterans Affairs (NCACVA)
North Carolina Association on Higher Education and Disability (NC-AHEAD)
North Carolina Chapter - Colleges and Universities Personnel Association
North Carolina Citizens for Business and Industry (NCCBI)
North Carolina College and University Professional Association – Human Resources (NCCUPA-HR)
North Carolina Community College Student Development Personnel Association (NCCSDPA)
North Carolina Council of Officers for Resource Development (NC CORD)
North Carolina Hispanic Chamber of Commerce
North Carolina Museum of Art
North Carolina Technology Association (NCTA)
Public Relations Information Marketing Association (PRIMA)
Raleigh-Wake Human Resource Management Association (RWHRMA)
Regional Transportation Alliance
Society for Human Resource Management
Southern Association of Colleges & Schools
Southern Association of Collegiate Registrars and Admissions Officers (SACRAO)
Southern Association of Community, Junior, and Technical Colleges (SACJTC)
Student Leadership Institute
Triangle Area Hotel-Motel Association
Triangle Tomorrow, Inc.
US Chamber of Commerce
Wake AHEC/Triangle Nurse Appreciate Council
Wake Area Business Advisory Council (BAC)
World Future Society
Wake Technical Community College offers Equal Employment and Educational Opportunities to all employees, students, prospective employees, and prospective students.

Affirmative Action, Equal Educational Opportunities and compliance with the Americans with Disabilities Act are viewed by the Board of Trustees as an integral part of the mission and purpose of Wake Technical Community College.

Questions concerning this policy should be addressed to:

**STUDENT MATTERS**
Dean of Students
Wake Technical Community College
9101 Fayetteville Road
Raleigh, NC 27603-5696

**EMPLOYEE MATTERS**
Director of Human Resources
Wake Technical Community College
9101 Fayetteville Road
Raleigh, NC 27603-5696

Individuals with disabilities who need assistance or require special accommodations to access college activities should request such services in advance by calling Disability Support Services at 919-866-5670 or 919-779-0668 (TDD).

**STATEMENT OF POLICY**

The contact hours shown in this catalog are minimal. It is a policy of this institution to permit students to enroll in additional subjects and laboratory work beyond those shown in the catalog.

**CATALOG INFORMATION**

Wake Technical Community College issues this catalog for the purpose of furnishing prospective students and other interested persons information about the College and its programs. Announcements contained herein are subject to change without notice and may not be regarded in the nature of binding obligation on the College. Effort will be made to keep change to a minimum, but changes in policy by the Board of Trustees of Wake Technical Community College may make some alterations in curricula or fees necessary. Changes to catalog information that occur between printings will be posted on the College's web site (www.waketech.edu).

**CHANGES IN CURRICULUM, FEES, AND OTHER REQUIREMENTS**

The Board of Trustees and/or administration of Wake Technical Community College reserve the right to change at any time, without notice, graduation requirements; fees and other charges; curriculum, course structure, and content; and other such matters as may be within its control, notwithstanding any information set forth in this catalog. Course offerings approved after publication of this catalog are described in class schedules that are issued each semester.
2006-07 ACADEMIC CALENDAR

FALL SEMESTER

August 15 ......................... Deadline for dropping with full refund
August 16 ........................... Fall Semester begins, 1st Fall Mini-semester begins
August 22 ........................... Last day for late registration and adding course; payment deadline
August 25 ........................... 75% refund period ends for curriculum classes. Last day to drop.
September 4 ............... College Holiday - Labor Day
September 18 .................... Last day to withdraw without penalty from 1st Fall Mini-semester
October 5 & 6, 9 & 10* .... Fall break for students
October 17 ....................... 1st Fall Mini-semester ends; deadline for dropping with 100% refund for 2nd Fall Mini-semester
October 18 ....................... 2nd Fall Mini-semester begins
October 19 ....................... Last day for registration 2nd Fall Mini-semester; registration payment deadline
October 23 ....................... Deadline for dropping with 75% refund from 2nd Fall Mini-semester
October 27 ....................... 60% point of semester. Last day to withdraw from Fall Semester without penalty
November 20 ..................... Last day to withdraw without penalty from 2nd Fall Mini-semester
November 22 ..................... Break for students and faculty
November 23 & 24 ........... College Holiday - Thanksgiving
December 14 ................. Fall Semester evening classes end; 2nd Fall Mini-semester evening classes end
December 15 ..................... Fall Semester ends; 2nd Fall Mini-semester ends
December 16 - January 1 ...... Winter break for students

SPRING SEMESTER

January 3 ......................... Deadline for dropping with full refund
January 4 ........................... Spring Semester begins; 1st Spring Mini-semester begins
January 10 ....................... Last day for registration and adding course; late registration payment deadline
January 15 ....................... College Holiday – King’s Birthday observed
January 16 ....................... Deadline for dropping with 75% refund
February 7 ....................... Last day to withdraw without penalty from 1st Spring Mini-semester
March 1 ............................ 1st Spring Mini-semester ends
March 1 ....................... Deadline for dropping with 100% refund from 2nd Spring Mini-semester
March 2 ............................ 2nd Spring Mini-semester begins
March 5 ............................ Last day for registration 2nd Spring Mini-semester; registration payment deadline
March 7 ............................ Deadline for dropping with 75% refund from 2nd Spring Mini-semester
March 12 - 16 ................... Spring break for students
March 20 ....................... 60% point of semester. Last day to withdraw without penalty from Spring Semester
April 5 ....................... Annual Faculty Professional Development Conference – No classes for day students
April 6 ........................... College Holiday – Good Friday
April 13 ....................... Last day to withdraw without penalty from 2nd Spring Mini-semester
May 4 ............................ Spring Semester evening classes end; 2nd Spring Mini-semester classes end
May 7 ............................ Spring Semester ends; 2nd Spring Mini-semester classes end
May 8 – May 15 ........... Break for students

SUMMER TERM

May 15 ............................ Deadline for dropping with full refund
May 16 ............................ Summer Term begins
May 22 ............................ Deadline for dropping with 75% refund; last day for registration and adding course; late registration payment deadline
May 28 ............................ College Holiday - Memorial Day
June 27 ............................ 60% point of term; Last day to withdraw without penalty
July 4 ............................ College Holiday - Independence Day
July 25 ............................ All Summer Term evening classes end
July 26 ............................ Summer Term ends
July 27 ............................ Forty-fourth Annual Commencement Exercise

FIRST SUMMER MINI-MESTER

May 15 ............................ Deadline for dropping with full refund
May 16 ............................ First Summer Mini-semester begins
May 22 ............................ Last day for registration and adding course; Deadline for dropping with 75% refund
May 28 ............................ College Holiday - Memorial Day
June 6 ............................ Last day for withdrawing without penalty from first summer mini-semester
June 20 ............................ First Summer Mini-semester ends

SECOND SUMMER MINI-MESTER

June 20 ............................ Deadline for dropping with full refund
June 21 ............................ Second Summer Mini-semester begins
June 22 ............................ Last day for registration and adding course
June 23 ............................ Deadline for dropping with 75% refund
July 4 ............................ College Holiday - Independence Day
July 12 ............................ Last day for withdrawing without penalty from second summer session
July 26 ............................ Second Summer Mini-semester ends

*Subject to revision to meet changing conditions. Continuing Education schedule may vary. Consult the Schedule of Classes for applicable dates and deadlines.
BOARD OF TRUSTEES

Expiration of Term

Robert M. Zippay, Chair...............................................................................................................................June 30, 2007
Jim W. Perry, Vice Chair................................................................................................................................June 30, 2010
Gary B. Jordan .............................................................................................................................................June 30, 2010
R. Keith Shackleford .....................................................................................................................................June 30, 2010
Dr. William K. Atkinson ..............................................................................................................................June 30, 2009
Wanda W. Denning .......................................................................................................................................June 30, 2009
Dr. Benjamin D. Reese, Jr ...........................................................................................................................June 30, 2009
James E. Herbst ........................................................................................................................................June 30, 2008
Harvey L. Montague .....................................................................................................................................June 30, 2008
J. Anthony Penry .........................................................................................................................................June 30, 2008
Dr. Carl. D. Price .......................................................................................................................................June 30, 2007
President, Student Government Association ..........................................................................................Non-Voting Member

ADMINISTRATION

Dr. Stephen C. Scott
President

Mr. Gerald A. Mitchell
Executive Vice President
Office of the President

Vacant
Vice President
Continuing Education Services

Mr. Bryan K. Ryan
Vice President
Curriculum Education Services

Mr. Wendell B. Goodwin
Facilities Engineering Officer
Facilities Services

Dr. Robert E. Ireland
Vice President
Student Services

Mr. O. Morton Conleton
Executive Director
Wake Technical Community College Foundation, Inc.

Ms. Laurie Clowers
Director
Public Relations and Marketing

Ms. Clay T. Hines
General Counsel
Office of the President

Denise Wetli
President
Faculty Association

Ray Tims
President
Staff Council

Dr. Larry Appleton
Senior Vice President
Administrative Affairs

Dr. Darryl D. McGraw
Chief Information Officer
Information Technology Services

Mr. W. Ward Preston
Vice President
Financial Services

Stan Wood
Chief Business Officer
Business Services
# AREAS OF STUDY

## Associate Degree Programs

A degree is awarded for successful completion of a two-year program of study.

### General Education
- B Associate in General Education A10300

### College/University Transfer
- A Associate in Arts A10100
- B Associate in Science A10400
- B Associate in Science - Pre-Major: Engineering A1040D

### Business Education
- B Accounting A25100
- B Business Administration A25120
- * Business Administration/Electronic Commerce A2512I
- B Business Administration/Human Resources Management A2512C
- A Criminal Justice Technology A55180
- D Culinary Technology A55200
- B Early Childhood Associate A55220
- D Hotel and Restaurant Management A5240
- D Medical Office Administration A25310
- D Office Systems Technology A25360
- D Office Systems Technology/Legal A2636A

### Computer and Engineering Technologies
- B Advertising and Graphic Design A30100
- D Architectural Technology A40100
- D Civil Engineering Technology A40140
- B Computer Engineering Technology A40160
- B Computer Information Technology A25260
- B Computer Programming A25130
- B Database Management A25150
- B Electronics Engineering Technology A40200
- D Environmental Science Technology A20140
- B High Performance Computing A25230
- D Industrial Engineering Technology A40240
- D Industrial Pharmaceutical Technology A20180
- B Information Systems Security A25270
- D Landscape Architecture Technology A40260
- D Manufacturing Technology/Plastics A5032A†
- B Mechanical Engineering Technology A40320
- B Networking Technology A25340
- B Simulation and Game Development A25450
- D Surveying Technology A40380
- A Web Technologies A25290

### Health Sciences
- D Associate Degree Nursing A45120
- D Dental Hygiene A45260
- D Emergency Medical Science A45340
- B General Occupational Technology A65280
- B Human Services Technology A45380
- B Human Services Technology/Developmental Disabilities A4538A
- B Human Services Technology/Substance Abuse A4538E
- D Medical Assisting A45400
- D Medical Laboratory Technology A45420
- D Radiography A45700

### Vocational Technology
- D Air Conditioning, Heating and Refrigeration Technology A35100
- D Automotive Systems Technology A60160
- D Electrical/Electronics Technology A35220
- D Heavy Equipment and Transport Technology A60240
- D Heavy Equipment and Transport Technology/Construction Equipment Systems A6024B
- D Industrial Systems Technology A50300
- D Machining Technology A5030A
- D Machining Technology/Tool, Die, and Mold Making A5030A
- D Mechanical Drafting Technology A50340

### Diploma Programs

A diploma is a one-year course of study focusing upon marketable skills.

### Business Education
- B Early Childhood Associate D55220A
- B Office Systems Technology D25360A

### Computer and Engineering Technologies
- D Manufacturing Technology/Plastics D5032AB†
- B Simulation and Game Development D25450A

### Health Sciences
- D Computed Tomography and Magnetic Resonance Imaging Technology D45200
- D Dental Assisting D45240
- B Medical Assisting D45400
- D Surgical Technology D45740
- B Therapeutic Massage D45750

<table>
<thead>
<tr>
<th>Legend</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D = Day</td>
<td></td>
</tr>
<tr>
<td>E = Evening</td>
<td></td>
</tr>
<tr>
<td>B = Both Day &amp; Evening</td>
<td></td>
</tr>
<tr>
<td>* = Distance Education</td>
<td></td>
</tr>
<tr>
<td>A = All the above</td>
<td></td>
</tr>
<tr>
<td>† = Not open to new students</td>
<td></td>
</tr>
</tbody>
</table>
Certificate Programs

A certificate is a short course of study, often less than one year, providing skills in a specific area.

Business Education
B Business Administration: Customer Service C25120B
D Business Administration: Entrepreneurship C25120C
B Business Administration: Sales Development C25120A
E Business Administration/Human Resources Management C2512CA
B Culinary Technology C55200A
D Culinary Technology: Baking C55200B
E Early Childhood Associate C55220B
E Early Childhood Associate: Infant/Toddler Care C55220C
D Hotel and Restaurant Management: Hotel Management C25240A
D Hotel and Restaurant Management: Restaurant Management C25240B
E Medical Office Administration: Medical Billing and Coding C25310B
A Medical Office Administration: Medical Office Specialist C25310A
E Medical Office Administration: Medical Transcription Specialist C25310C
E Office Systems Technology: Integrated Office Systems C25360D
A Office Systems Technology: Office Publications Certificate C25360E
B Office Systems Technology: Office Specialist I C25360F
B Office Systems Technology: Office Specialist II C25360C
B Office Systems Technology: Word Processing C25360B
E Office Systems Technology/Legal C2536AA
E Real Estate C25400A
E Real Estate Appraisal C25420

Computer and Engineering Technologies
B Advertising and Graphic Design: Graphics and Design C30100A
B Advertising and Graphic Design: Web and Graphic Design C30100B
B Architectural Technology: Architectural CAD C40100A
B Automation Engineering Technology: PLC Programming C40120B
B Automation Engineering Technology: Robotics: C40120C
D Civil Engineering Technology: Civil Design C40140A
B Computer Engineering Technology: C Programming – Open Source Development C40160B
B Computer Engineering Technology: Linux Kernel Development C40160E
B Computer Engineering Technology: Pentium System Architecture C40160D
B Computer Information Technology: Computer Forensics C25260J
B Computer Information Technology: Hardware Troubleshooting (A+) C25260G
B Computer Information Technology: IT Support Management C25260L
B Computer Information Technology:: IT Support Technician (MCSD) C25260K
B Computer Information Technology: Microsoft Office Specialist C25260A
B Computer Information Technology:: Spreadsheet Management C25260E
B Computer Programming: C++ Programming C25130C
B Computer Programming: Computer Science C25130E
B Computer Programming: JAVA Programming C25130A
A Database Management: Oracle DBA Programming C25150B
A Database Management: Oracle Developer C25150A
B Electronics Engineering Technology: Basic Electronics C40200A
B High Performance Computing: Bioinformatics C25230B
B High Performance Computing: Linux/Red Hat Administration C25230C
B Industrial Engineering Technology: Advanced Quality Assurance C40240C
B Industrial Engineering Technology: Industrial Management C40240A
B Industrial Engineering Technology: Quality Assurance C40240B
B Information Systems Security: Network Security Admin. C25270A
D Landscape Architecture Technology: Landscape Architecture C40260A
D Manuf. Tech./Plastics: Engineering Materials C5032AH
D Manuf. Technology/Plastics: Manufacturing Practices C5032AG
D Manuf. Technology/Plastics: Plastics Ext. C5032AC
D Manufacturing Technology/Plastics: Plastics Injection Molding C5032AF
B Mechanical Engineering Technology: Mechanical Design C40320B
B Mechanical Engineering Technology: Thermal Mechanics C40320C
B Networking Technology: Cisco Certified Associate C25340C
B Networking Technology: Cisco Certified Network Professional (CCNP) C25340I
A Networking Technology: Microsoft Certified Systems Engineer (MCSE) C25340A
D Surveying Technology: Surveying C40380A
B Web Technologies: E-Commerce Programming C25290B
B Web Technologies: Web Designer C25290C
B Web Technologies: Web Developer C25290A

Health Sciences
* Computed Tomography Technology C45200A
B Human Services Technology/Substance Abuse C4538EA
* Magnetic Resonance Imaging Technology C45200B
B Nursing Assistant C45480
B Phlebotomy C45600

Vocational Technology
B Air Conditioning, Heating, and Refrigeration C35100B
B Basic Law Enforcement Training C55120
B Construction Management Technology C35190B
B Electrical/Electronics Technology: Commercial Wiring Methods C35220C
B Electrical/Electronics Technology: Residential Wiring Methods C35220B
B Heavy Equipment and Transport Technology: Fuel Injection, Electrical, and Electronics C6024BC
B Heavy Equipment and Transport Technology: Hydraulics, Engines, and Transmissions C6024BB
B Industrial Systems Technology C50240B
B Machining Technology C50300B
B Machining Technology: CNC Machining C50300C
B Machining Technology/Tool, Die, and Mold Making: Mold Making C50300A
B Mechanical Drafting Technology C50320B
D Plumbing Applications and Diagrams C35300A
D Plumbing: Modern Plumbing Codes and Blueprint Reading C35300B
B Welding Technology C50420B
Other Programs

Cooperative Agreement Programs
A Cooperative Agreement program is one in which a student is concurrently enrolled in high school and Wake Tech.
- Concurrent (Dual) Enrollment T90980
- Huskins Bill T90970

Transitional Programs
Transitional programs are designed to allow students to move from one stage of development to another.
- Associate in General Education (undecided) A10300ZU
- English as a Foreign Language (EFL) A10300ZQ

CONTINUING EDUCATION PROGRAMS

Basic Skills
- Adult Basic Education
- Grades 0-4 Program
- Grades 5-8 Program
- GED/High School Diploma Equivalency
- Adult High School Diploma
- Academic Improvement
- Adult High School Diploma Program
- Courses of General Interest
- Compensatory Education
- English as a Second Language

Business and Industry Services
- Apprenticeship Training
- Focused Industrial Training
- Human Resources Development
- New and Expanding Industry Training
- Management Development Program
- Small Business Center

Evening and Weekend Programs
- Occupational Training and Upgrading
- Wake County Community Schools Program
- Evening Curriculum Program
- Lateral Entry Program

Public Safety and Service Occupations
- Corrections Education
- Fire Service Training
- Health Education Training
- Public Safety and Homeland Security
- Service Occupations

Education Services Technology
- Continuing Education Registrar
- Grants & Special Projects
- Continuing Education Records
- Continuing Education Human Resources Development
- Non-Credit & Weekend Computer Education and IT Related Services
- Human Resources Development
General Information

HISTORY
Wake Technical Community College is a tax-supported, public, nonprofit educational institution under the control of a Board of Trustees. It is an institutional member of the North Carolina Community College System, State Board of Community Colleges. Authority for the establishment of the College is found in Chapter 115D of the General Statutes of North Carolina and the amendments thereto.

The College was chartered on April 3, 1958, as the Wake County Industrial Education Center. Operation actually began October 7, 1963, with 34 curriculum students on campus and 270 enrolled in the various industrial training programs.

On January 8, 1964, the Center was formally dedicated as W.W. Holding Industrial Education Center. Operation actually began October 7, 1963, with 34 curriculum students on campus and 270 enrolled in the various industrial training programs.

On March 3, 1966, W.W. Holding Industrial Education Center was granted approval by the State Board of Education as W.W. Holding Technical Institute and licensed to award the Associate in Applied Science degree. The name was changed to Wake Technical Institute in September 1974 and to Wake Technical College on March 1, 1980. The name was changed to Wake Technical Community College on December 1, 1987.

On December 3, 1970, the College was accredited by the Southern Association of Colleges and Schools.

MISSION STATEMENT
The mission of Wake Technical Community College is to help improve and enrich lives by meeting the lifelong educational, training, and service needs of its diverse community. The College is committed to promoting individual success in the workplace and higher education and to promoting cultural, social, and economic development.

In pursuit of its mission, this public two-year comprehensive postsecondary educational institution adheres to an open-door policy by offering quality accessible and affordable educational opportunities to all adults regardless of age, sex, socioeconomic status, ethnic origin, race, religion, or disability. To meet the needs of its community, the College focuses on providing support services, resources, community outreach, and partnerships; programs in basic skills development; vocational, technical, and occupational training; and college/university transfer preparation.

Our Vision
At Wake Technical Community College, our vision is a college that exceeds the expectations of its stakeholders for effective lifelong education and workforce training by providing world-class programs, services, and resources through an approach that models and teaches the core values of respect, responsibility, critical thinking, communication, and collaboration.

Core Values
The College has set out to provide a model for other institutions of higher education and an example for its students through its commitment to its core values.

- Respect—Respect is a prerequisite for enhancing learning. Community members who respect themselves and others help create a safe, yet open, climate of learning.
- Responsibility—Responsibility is the root of success. Students who assume personal responsibility for their education will reach their goals. Responsible students also make contributions to their communities.
- Critical Thinking—Critical thinking is the fundamental purpose of higher education. The ability to solve problems through the application of the appropriate skills is critical to all disciplines.
- Communication—Communication is increasingly the key competency for living and working in the information age. Communicating effectively in oral and written forms through traditional and new media is a powerful tool for personal and career success.
- Collaboration—Collaboration, by bringing together individual knowledge and talents, creates teams that are greater than the sum of their parts. Such teamwork maximizes benefits to individuals and the community.

COLLEGE GOALS

Student Success
Provide a dynamic learning environment to ensure successful achievement of students’ goals by administering sound policies, curricula, instruction, and support services.
Workforce Development
In collaboration with Regional Economic Development Partnerships, identify the workforce needs of emerging jobs in rural and urban economies in North Carolina. Develop and implement the educational and training programs necessary to meet the workforce needs of each community college service area in North Carolina and promote recruitment, retention, and development of high quality faculty and staff necessary to achieve the educational and training objectives of the community college system and provide North Carolina with a world-class workforce.

Diverse Populations Learning Needs
Provide North Carolina citizens with the opportunity to develop essential skills for lifelong learning. Upgrade and retrain North Carolina learners for the workplace through flexible, accessible, and customized educational and training programs within their communities.

Resources
Continuously research, analyze, and secure the resources necessary to fulfill the mission of the North Carolina Community College System and develop processes for measuring the effectiveness of resource allocations and utilization, within the North Carolina Community College System.

Technology
Encourage and support North Carolina Community College faculty and staff in the effective and efficient uses of instructional technology and administrative computing systems to improve the delivery of academic programs to North Carolina citizens.

Community Services
Provide courses and support service activities for the enrichment of the community’s civic, economic, and cultural needs.

PROGRAMS AND SERVICES
The College translates its mission, vision, values, and goals into action through clearly defined programs and services. Specifically, the College
• provides occupational career enhancement programs for individuals and support for economic development to businesses, industries, and agencies. Basic skills education, English as a Second Language and a wide variety of continuing education courses and programs for personal enrichment are offered on campus and throughout the county. The College further serves its constituents by providing a broad range of community services, partnerships, and outreach programs.
• provides a wide range of support services designed to assist students in successfully fulfilling their education and occupational goals. These services, developed to meet the diverse needs of individual students, begin with their initial contact with the College and continue throughout their enrollment and job placement or transfer for further study.
• practices sound fiscal management and systematic planning to provide facilities, equipment, and state-of-the art technology to ensure quality education opportunities at secure facilities accessible to Wake County citizens.

WAKE TECHNICAL COMMUNITY COLLEGE FOUNDATION, INC.
Wake Technical Community College Foundation solicits private support from corporations, foundations and individuals.

Gifts are used for emergency financial aid and student scholarships, equipment, recognition awards, professional development, facility improvements, and a variety of other purposes outside the scope of traditional college funding sources. The Foundation also enables the College to meet emergency funding needs as well as special opportunities that improve Wake Tech’s ability to serve the community.

All private gifts to Wake Technical Community College should be directed to the Wake Technical Community College Foundation, a tax-exempt, 501(c)(3) nonprofit corporation, operating exclusively for the benefit of the College and Wake Tech students.

Donors or advisors should send correspondence to:

Executive Director
Wake Technical Community College Foundation
9101 Fayetteville Road
Raleigh, North Carolina 27603-5696
919-866-5926
mcongleton@waketech.edu
2006 Critical Success Factors

Twelve Performance Measures for Accountability

Based on requirements established by the North Carolina General Assembly in 2000, Wake Technical Community College is required to publish performance data on the twelve critical success factor measures annually in its electronic catalog and in its printed catalog.

1. Progress of Basic Skills Students:
   (Performance Standard: 75%) (2004-2005)

<table>
<thead>
<tr>
<th>Total FTE</th>
<th>Total Served in Literacy</th>
<th>Completed a Level or Goal</th>
<th>Progressing Same Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,377</td>
<td>7,807</td>
<td>6%</td>
<td>49%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exit Non-Completers</th>
<th>Moved to a Higher Level</th>
<th>Composite Progress Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%</td>
<td>26%</td>
<td>81%</td>
</tr>
</tbody>
</table>

2. Passing Rates on Licensure and Certification Examinations
   (Performance Standard: Aggregate = 80%; Individual Exams = 70%) (2004-2005)

<table>
<thead>
<tr>
<th>Total Number of Test Takers</th>
<th>Total Number Passing</th>
<th>Aggregate Institutional Passing Rate</th>
<th>Number of Exams with a Passing Rate Less than 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>387</td>
<td>95%</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Basis Law Enforcement Training</th>
<th>75</th>
<th>95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Hygiene</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>Emergency Medical Tech: (EMT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT</td>
<td>126</td>
<td>94</td>
</tr>
<tr>
<td>EMT-I</td>
<td>29</td>
<td>86</td>
</tr>
<tr>
<td>EMT-P</td>
<td>14</td>
<td>93</td>
</tr>
<tr>
<td>Nursing (Registered Nursing)</td>
<td>101</td>
<td>91</td>
</tr>
<tr>
<td>Radiography</td>
<td>24</td>
<td>100</td>
</tr>
<tr>
<td>Real Estate (Sales)</td>
<td>61</td>
<td>67</td>
</tr>
</tbody>
</table>

3. Goal Completion of Completers
   (Performance Standard: 95%)
   Percent of Completers who report meeting their goal for attending a community college (2004-2005)

<table>
<thead>
<tr>
<th>Number</th>
<th>% Completed Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>635</td>
<td>99</td>
</tr>
</tbody>
</table>

4. Employment Status of Graduates
   (Performance Standard: 95% adjusted)
   Percent of 2003-2004 Graduates Employed within One Year of Completion

<table>
<thead>
<tr>
<th>Percent of 2003-2004 Graduates Employed Within One Year of Graduating</th>
<th>Number of Graduates (Minus inmates and missing students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.44%</td>
<td>887</td>
</tr>
</tbody>
</table>
5. **Performance of College Transfer Students**  
(Performance Standard: 87.1% System Total [>=2.0])

Percent of 2003-2004 College Transfer Students with a GPA of greater than or equal to (>=) 2.0 after two semesters at a UNC Institution

<table>
<thead>
<tr>
<th>24 or more semester hours</th>
<th>Associate Degree Recipient</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Percent&gt;=2.0</td>
<td>Number</td>
</tr>
<tr>
<td>296</td>
<td>88.2%</td>
<td>113</td>
</tr>
</tbody>
</table>

6. **Passing Rate of Students in Developmental Courses 2004-2005**  
(Performance Standards: 70%)

<table>
<thead>
<tr>
<th></th>
<th>Reading</th>
<th>Math</th>
<th>English</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># Completed</td>
<td>% Passed</td>
<td># Completed</td>
<td>% Passed</td>
<td># Completed</td>
</tr>
<tr>
<td>693</td>
<td>95%</td>
<td>3,018</td>
<td>82%</td>
<td>1,011</td>
</tr>
</tbody>
</table>

7. **Success Rate of Developmental Students in Subsequent College Level Courses 2004-2005**  
(Performance Standard: No statistical significant difference in the performance of Developmental Students as compared to Non-Developmental Students)

<table>
<thead>
<tr>
<th></th>
<th>Developmental</th>
<th>Non-Developmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Took</td>
<td>% Passed</td>
<td>Number Took</td>
</tr>
<tr>
<td>705</td>
<td>84%</td>
<td>3,510</td>
</tr>
</tbody>
</table>

8. **Satisfaction of Program Completers and Non-Completers 2004-2005**  
(Performance Standard: 90%)

<table>
<thead>
<tr>
<th></th>
<th>Completers</th>
<th>Non-Completers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>% Satisfied</td>
<td>Number</td>
<td>% Satisfied</td>
</tr>
<tr>
<td>641</td>
<td>96</td>
<td>441</td>
<td>93</td>
</tr>
</tbody>
</table>

9. **Curriculum Student Retention and Graduation 2004-2005**  
(Performance Standard: 60%)

<table>
<thead>
<tr>
<th></th>
<th>Total Cohort</th>
<th></th>
<th></th>
<th>% Graduated</th>
<th>% Returned</th>
<th>% Graduated or Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cohort</td>
<td>10,803</td>
<td>23%</td>
<td>47%</td>
<td>69%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Performance Standard: 85%)

<table>
<thead>
<tr>
<th># of Employers Surveyed</th>
<th>Response Rate</th>
<th>% Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>786</td>
<td>31</td>
<td>95%</td>
</tr>
</tbody>
</table>

11. **Client Satisfaction with Customized Training 2004-2005**  
(Performance Standard: 90%)

<table>
<thead>
<tr>
<th># of Survey Respondents</th>
<th>% Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,774</td>
<td>100</td>
</tr>
</tbody>
</table>

12. **Program Unduplicated Headcount Enrollment 2004-2005**  
(Performance Standard: Three-year average annual enrollment must not be less than ten students)

Number of Programs with a three-year average annual enrollment of less than ten students (2004-2005) = 0.
Mission and Goals
The mission of Student Services of Wake Technical Community College is to support the educational goals of the institution and contribute to the cultural, social, intellectual, and physical development of students, regardless of age, sex, socioeconomic status, ethnic origin, race, religion, or disability.

To accomplish its mission, Student Services has established the following continuous goals.

A. To interpret and distribute to the public, prospective students, and students the College’s objectives, policies, and educational opportunities.
B. To assist the student to select, enter, progress within, and complete a course of study, whether associate degree, diploma, certificate, upgrading, basic education, or cultural in nature.
C. To provide a professionally competent and continuing counseling program to assist students with academic, vocational, personal, and socioeconomic problems, as well as to assist in transfer to a senior institution.
D. To serve as the advocate for students in their dealings with the administration of the College.
E. To record, maintain, protect and make available to authorized persons information accurately reflecting the efforts and achievements of the College’s students.
F. To provide a comprehensive program to remove as many financial barriers to education as possible for those unable to pay.
G. To provide educational and growth opportunities through a comprehensive program of student government and other student activities and events.
H. To promote and encourage programs related to the health, safety, and physical welfare of the students.
I. To report properly student data to appropriate agencies.
J. To work cooperatively with the Institutional Effectiveness and Research Office and the Grants Development.
K. To provide employment opportunities for students and alumni and to provide access to employers in meeting their workforce needs.
L. To continuously evaluate and improve Student Services.

Campus Security and Safety
The Board of Trustees of Wake Technical Community College has adopted policy statements in compliance with the dictates of the Federal Crime Awareness and Campus Security Act of 1990, the Federal Campus Sexual Assault Victims Bill of Rights Act of 1992, and the Higher Education Amendments of 1998. Full text copies of those policies are maintained by the College and are available upon request.

The College’s Security Manager is primarily responsible for developing rules and regulations to implement these policies. Crimes on the main campus are reported to the Wake County Sheriff’s Department (or other appropriate law enforcement agency), which investigates on-campus murder, criminal sexual assault, criminal sexual abuse, robbery, aggravated assault, aggravated battery, burglary, motor vehicle theft, liquor law violations, drug abuse violations, weapons possession, and other emergencies on campus considered to be a threat to safety. Crimes on the Adult Education campus and the Health Sciences campus are reported to the Raleigh Police Department. Timely reports of such occurrences are made to employees and students. In the event the perpetrator of a violent crime is subject to discipline by the College, the victim of the crime shall, at the discretion of the College’s administration, be permitted to obtain results of the disciplinary proceeding.

The College prepares, publishes, and distributes statistical reports that identify the occurrence of campus crimes and the number of campus arrests involving liquor law violations, drug abuse violations, and weapons violations. The policy statements and statistical reports are available upon request to students and employees as well as prospective students and the higher education community.

Security patrol and traffic control matters are handled by a private security company under contract with the College. This company is responsible to the College’s Security Manager, whose office is in Holding Hall, and whose telephone number is 866-5532. The Security Manager also can be contacted by dialing the College’s main switchboard number, 662-3400 (from off-campus or from a coin telephone), or by dialing “0” from a school telephone. Students, employees, and visitors are encouraged to report criminal activity and other emergencies on campus at 866-5911.
Students and employees are prohibited from bringing onto campus or using alcohol or illegal drugs on campus or during any College activity. Limited exceptions to this policy may be granted by the College’s President or designee. The College has a Drug and Substance Abuse Council, which offers help to students and employees in seeking counseling and/or assistance programs.

From time to time workshops and seminars are conducted on campus relating to the following subjects:

- Crime and Safety
- Self-Defense
- Drugs and Alcohol
- Date Rape

Other information is periodically published in the campus *News and Views* and the student newsletter, *The Eagle’s Eye*. The student newspaper, *The Student Voice* discusses and debates health, safety, self-defense, etc., issues.

Campus safety means protecting people and property. People working together can take the bite out of crime. Report suspicious persons, vehicles, and activities to the Security Patrol Officer or the Security Manager.

Students attending classes in the evenings should walk in well-lighted areas with someone or near other people. Extra precaution should be taken by using sidewalks and crosswalks and by avoiding isolated areas. Personal valuables should be marked and NOT left unattended. Vehicles should be parked in a well-lighted area and locked.

When students or instructors arrive for a class and the classroom or building is locked, the appropriate instructor should call a security officer at 866-5911 (before 8 a.m.) or 662-3400 (after 8 a.m.) to ask that the classroom or building be opened. This action should only be taken if it is 30 minutes or less before the scheduled class.

**Presentations by Local Law Enforcement Personnel**

Presentations are conducted by the Wake County Sheriff’s Department, Raleigh Police Department, SBI, and the N. C. Highway Patrol concerning robbery, motor vehicle theft, and drugs and alcohol.

**Annual Report of Criminal Offenses**

The Crime Awareness and Campus Security Act of 1990, revised by Congress in 1998, requires publication of criminal activity in the following categories. The figures shown encompass all three campuses of Wake Technical Community College.

<table>
<thead>
<tr>
<th>Category</th>
<th>Calendar Year 2005</th>
<th>Calendar Year 2004</th>
<th>Calendar Year 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murder</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sexual Offenses</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Robbery</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aggravated</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Assault</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Burglary</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Theft</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Manslaughter</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Arson</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hate/Prejudice</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Crime</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The following are statistics regarding arrests on campus in the listed categories:

**Use of the Student Lounge**

The purpose of the Student Lounge is to allow students to meet with individuals or in small groups, relax between classes, play chess or checkers, and participate in educational activities, workshops, and other student related events. Therefore, with these purposes in mind, the following guidelines must be observed in the Student Lounge:

- No loud noises (voices or electronic devices). If using electronic devices earphones must be used.
- No musical instruments unless authorized.
- No profanity.

**Dining is not allowed in the Student Lounge.** All foods should remain in the cafeteria except for vending machine snack foods (crackers, chips, candy bars, etc.), which are allowed.

It is each person’s responsibility to keep the lounge area presentable. Furniture is not to be moved or abused in any manner. Trash is to be placed in receptacles.

Failure to comply with these guidelines will result in the loss of Student Lounge privileges for one week. A second offense will result in loss of privileges for one semester.

- Card playing is not permitted inside any building of the College except the Student Lounge.
- Shirts and shoes must be worn at all times.

**Cleanliness and Proper Dress**

Personal cleanliness is an expectation in the College environment. This includes making use of the disposal containers in the halls and in all areas of shops, classrooms, lounges, and cafeteria. Littering is not allowed. Students are expected to dress appropriate to their major area of study. Students are not allowed in any campus facility without shoes and shirts. Caps and hats should not be worn in any classroom.

In the areas of study that require special clothing, students will attire themselves accordingly. Safety equipment such as goggles, shields, helmets, etc. is available and, in some instances, is required for student purchase and use in shop and laboratory activities.

In cases where a student’s dress or hygiene interferes with the learning process, the instructor shall conduct initial counseling with student. Repeated occurrences will result in referral to the Dean of Students Office or designee.
**Indebtedness**

Student financial obligations at the college including past due tuition and fees, bookstore debts, library fines, returned checks, parking fines, and financial aid repayments must be satisfied before a student is eligible to register for future semesters, graduate, receive transcripts or have access to other college services. A student may also be dropped from classes that are not paid for, or that a check has been returned for.

**Solicitation**

Solicitations occur in numerous forms, formats, and techniques. "Solicitations," as they relate to this section of the Handbook, shall be deemed to include, among other activities, attempts to address all or portions of the College community to express social, political, or religious views, to disseminate written materials, or to solicit, accept, or collect donations or contributions. The general policy of the College is that any individual, organization, agency, or cause that desires to solicit on any property which is owned, leased, or operated under the jurisdiction of the College, is required to obtain the prior approval of the Office of the College President in writing. Specific policies are stated below:

A. **Distribution of Written Materials**

Pamphlets, publications, written materials, advertisements, and any other such materials may not be distributed through any form of the College's internal mail system. Such materials may, however, be distributed by hand at such time(s) and at such location(s) as may be designated in writing by the College President, upon written application submitted in accordance with paragraph E below. Any individual, organization, agency, or cause that distributes written materials on any property which is owned, leased, or operated under the jurisdiction of the College shall reimburse the College for any of the College's internal or external clean-up costs associated with the distribution of such materials.

B. **Posting of Messages or Materials**

It is expressly prohibited for any individual, agency, organization, or cause, not officially affiliated with the College to use any surface such as wall, bulletin board, tree, or the like that is located on any property which is owned, leased, or operated under the jurisdiction of the College to display any written or otherwise visual materials.

C. **Commercial Use of Bulletin Boards**

The College provides some bulletin board space for its students and employees to advertise or request goods and services. Other than such limited use by the College's students and employees, bulletin boards located on any property that is owned, leased, or operated under the jurisdiction of the College may not be used for commercial purposes.

D. **Donations and Contributions**

Only individuals, organizations, and groups that have registered with the Department of the Secretary of State under Chapter 131F of the General Statutes of North Carolina, or individuals, organizations, and groups that are exempt from these registration requirements, may solicit, accept, or collect donations or contributions for any purpose on any property which is owned, leased, or operated under the jurisdiction of the College. Prior to engaging in any such activities, those individuals, organizations, and groups who desire to solicit, accept, or collect donations or contributions shall request permission in writing from the Office of the College President in the manner provided in paragraph E below for “Other Solicitations.” If made in compliance with this policy, such requests to solicit shall be allowed, although the solicitations will be subject to the same conditions, limitations and restrictions as provided in paragraph E below for “Other Solicitations.”

E. **Other Solicitations**

**Goods and Services**—Students who desire to solicit on any property that is owned, leased, or operated under the jurisdiction of the College to provide goods or services should make their request in writing to the Dean of Students. The request must contain a full description of the activity as to time, benefit, etc., in order to be considered. The decision as to whether such request should be allowed or denied and any conditions attached thereto shall be within the Dean's discretion. The Dean shall respond to all such requests in writing within **five (5) working days** from the date the request is received. All other individuals, organizations, agencies, or causes are prohibited from canvassing, selling, offering for sale, soliciting, or promoting the sale or advancement of any goods or services on any property which is owned, leased, or operated under the jurisdiction of the College.
**Other Solicitations**—No individual, agency, organization, or cause that desires to solicit on any property which is owned, leased, or operated under the jurisdiction of the College may engage in any such solicitation without first making a request in writing to the Office of the College President and then receiving written permission from the President or the President’s designee. The request must contain a full description of the activity, material to be distributed, benefit, dates and time, etc., in order to be considered. The College President or the President’s designee will mail a response to the request within five (5) working days from the date the request is received. If made in compliance with this policy, such requests to solicit shall be allowed, although the solicitations will be restricted by the President or the President’s designee to a designated area on campus, and be limited to a maximum of two (2) hours per day, one (1) day per week on such days and at such times as are designated by the President or the President’s designee. No sound amplification devices shall be permitted. The President or the President’s designee may require that the party soliciting cease the solicitation and leave the property if the party soliciting uses language or techniques that would be considered offensive to persons of ordinary sensitivities or would have a tendency to incite a breach of the peace, if the party soliciting is overly loud or otherwise disruptive to classes or the normal administration or operation of the College, or if the party soliciting otherwise fails to comply with the College’s solicitation policy. Gross, multiple, or continued violation of this solicitation policy may additionally result in the soliciting party’s loss or suspension of future solicitation privileges on property which is owned, leased, or operated under the jurisdiction of the College. Any party adversely affected by a decision or determination of the College or any of the College’s employees made pursuant to this policy shall have the right to appeal the decision or determination in accordance with the grievance procedure contained in the College’s Student or Employee Handbook.

**Visitors and Children on Campus**

Visitors are always welcome to the campus. Visitors should register at the receptionist desk in Holding Hall so that information and directions can be given to make the visit a beneficial one. The College does not encourage non-official visits. Individuals who are loitering or who have not registered at the receptionist desk will be asked to leave the campus.

Under no circumstances will visitors be allowed in classrooms or laboratories at on- or off-campus sites without appropriate approval.

Children and any other persons not registered for a class are not allowed in laboratories or classrooms at any site unless authorized by the appropriate vice president. Children must not be left unattended in any area of the College. At community school sites, only persons attending college or school activities are permitted on the premises. Students who violate these regulations at any of Wake Tech’s class locations will be subject to having their enrollment terminated.

**Pets**

Pets, such as but not limited to dogs and cats, create several conditions the College is not equipped to handle. Pets may carry and spread parasites. Pets of any type may not be brought on campus. This policy is in no way intended to restrict access to the campus of specifically trained animals to aid individuals with disabilities.

**Telephone Calls**

Public telephones are conveniently located on all campuses for students desiring to make telephone calls. Students are not permitted to use office telephones for personal calls.

Since the College does not have access to an intercom system or a messenger service, staff members will not deliver a message to a student unless it is determined to be an emergency. In an emergency, an individual who calls for a student must state the nature of the emergency; someone in Student Services will look up the student’s schedule and attempt to contact him/her immediately.

Contact the Evening Dean’s office for emergencies involving students attending evening classes.

**Cell Phones**

Students may not engage in any activity that is disruptive to orderly classroom instruction, without limitations to the use of cell phone or pager calls; students are therefore required to disengage all such devices when in a classroom.

**Media Coverage of College Activities**

As a public, tax-supported community college, Wake Technical Community College complies with public information law and works with news media to provide coverage of news about the College. Occasionally, media representatives may visit College classrooms to interview and photograph students.

The College welcomes these opportunities and respects the rights of students who may not wish to be interviewed or photographed. Students may be excused from classroom activities, without question, while photographs or video images are recorded.

**Class Schedule Publications**

Class schedules for upcoming terms are made available approximately two to three months prior to the start of the term.

- **On-line class schedules** are available on WebAdvisor at [http://webadvisor.waketech.edu](http://webadvisor.waketech.edu). Printed copies of the class schedules are not prepared. However, students may choose to download the entire class schedules via a PDF on www.waketech.edu.
- A “Registration Guide” booklet is available for enrolled and prospective students. This booklet is available on the Wake Tech website at www.waketech.edu and is also available on Main Campus, Health Sciences Campus, Adult Education Center, Western Wake Campus, community school sites, Wake County libraries, and most chambers of commerce.
Inclement Weather Schedule
Information regarding the closing of the College because of inclement weather will be announced on local radio and television stations and is posted on Wake Tech’s website. In the event that bad weather occurs after the opening of the College, announcement of the dismissal of classes will come from the administrative officer in charge at that time.

When Inclement Weather Hits:
- If the College is closed, all classes at all sites are cancelled.
- If evening classes are cancelled, all classes at all sites are cancelled.
- If the College is open but Wake County Public Schools (WCPSS) are closed, Wake Tech classes scheduled at Wake County Public School sites are cancelled.
- Wake Tech classes scheduled at the following sites will be held even when classes at WCPSS sites are cancelled:
  - Main Campus
  - Health Sciences Campus
  - Adult Education Center
  - Western Wake Campus
- You can determine if your classes are cancelled by:
  - Checking the Wake Tech website [www.waketech.edu](http://www.waketech.edu)
  - Calling the college switchboard at (919) 662-3400, or
  - Check the local media stations (radio or television) for the latest information.

Drug Abuse Prevention Program
The College has materials relating to drug abuse prevention available to all students, faculty, and staff. Interested individuals are encouraged to make use of the materials, which are located in the library on the Main Campus and the library on the Health Sciences Campus.

Emergency Exit Procedures
If the need should ever arise to evacuate a building because of fire or other impending danger, a general alarm will be sounded. When such an alarm is sounded, individuals should leave the building by way of the nearest exit. Individuals should become familiar with posted evacuation routes.

Smoking
Wake Technical Community College, in compliance with the Wake County Smoking Rules adopted June 23, 1993, by the Wake County Board of Health, does not allow smoking in any of its facilities. Smoking is allowed outside of buildings; however, smokers are not to congregate near entrances to buildings and are required to deposit cigarette butts in the appropriate containers provided for this purpose. It is the responsibility of each student and employee to encourage individuals who smoke to do so only in those areas listed above.

Smoking at community school locations is prohibited by the Wake County Public School System. This includes buildings, school grounds, and parking lots.

Food and Beverages
Food and beverages are not permitted in classrooms, laboratories, shops, learning centers, libraries, or in any instructional area. All food is to be consumed in the cafeteria or vending machine areas. This policy applies at all Wake Tech campuses, community school locations, and other facilities.

Health and Safety

Insurance and Accidents
The College cannot assume the responsibility for injuries or losses sustained on or off campus by any student. Accident insurance is included in the Student Administration fee for all curriculum students.

All students covered by the insurance policy are responsible for reading the Student Accident Insurance Brochure (Policy) and following the claim procedures. After the accident has been reported and logged with campus security, the student may present a copy of any itemized medical bills to the Office of the Registrar, to receive an Accident Insurance Claim form. The Office of the Registrar will not release an Accident Insurance Claim form until notified via a copy of the accident report from campus security. The accident claim must be filed within 90 days of treatment for any injury.

The College requires each person enrolling in a Health Sciences curriculum to have student malpractice liability insurance coverage in the amount of $1,000,000/ $3,000,000. This type of professional liability insurance may be purchased from most local insurance agencies or through a blanket liability insurance program at the College. Proof of coverage must be presented at the time of registration by providing the actual insurance policy or certification of insurance. In the absence of proof of coverage, students enrolled in a Health Sciences curriculum are required to purchase professional liability insurance through the College’s blanket liability insurance program at the time of registration.

Students participating in sports activities are required to have accident insurance.

Program Responsibility
The responsibility for the organization, supervision, personnel training, and evaluation of an institutional program of health and safety has been assigned to the Facilities Engineer or her designee.

Notification of Accident
Notification procedures for all accidents involving students and visitors are as follows:
- Students and visitors should notify campus security of all accidents that occur on any Wake Technical Community College campus facility.
• Campus security will complete an incident report for all accidents and forward documentation to the appropriate service areas for accident insurance, facility maintenance, etc.

First Aid
The College has first-aid kits in appropriate locations throughout the various facilities.

Administering of First Aid
From time to time students, employees, or visitors could be injured during the course of regular College activities. In the event of minor scratches and skinned areas, employees of the College who are responsible for the areas in which the first aid kits are located can administer first aid. Only the supplies in the kits should be used, and in no circumstances should any medication be provided for oral consumption. If no first aid kit is available contact security and they will administer first aid.

When persons are injured more severely, 911 should be called and then contact campus security at 866-5911. Campus security will come to assist the injured person and set up for the arrival of emergency medical personnel. Security will fill out an incident report and forward to the Security Manager for appropriate action to be taken.

Students attending the Health Sciences Campus should contact the receptionist at 231-4500 (HEB). The receptionist will locate the Security Officer on duty.

The decision to call the rescue squad or other medical personnel rests with the Facilities Engineer or her designee and the injured party. The College will make appropriate telephone calls in an effort to arrange transportation for the sick or injured student, employee, or visitor. The College will not transport nor will it assume the responsibility for transporting a sick or injured person.

Transportation
Wake Technical Community College provides bus service for students between downtown Raleigh and the Main Campus. A schedule can be obtained from the receptionist in Holding Hall, the receptionist in Student Services, or a coordinator in the Individualized Learning Center.

Lost and Found
The College’s “Lost and Found” depository is located in the Student Services Building, Room 121F.

Skate Boarding/Roller Skating
Skate boarding and roller skating are not allowed on the Wake Technical Community College campus and/or its rented facilities.

Student Photo ID
It is important that every curriculum student on the Main, Western Wake, Health Sciences, and North Campuses receive and have with them at all times the Wake Technical Community College Student ID. ID’s will be required for student’s use of the Student Lounge, ILC, Library, and certain Continuing Education classes. Student IDs may be obtained on the Main and Health Science Campuses. Hours of operation are 8:00 a.m. to 5:00 p.m., Monday through Friday.

The initial Student ID will be free while a duplicate ID will be issued for $5.00.
Facilities

Use of Campus Facilities
Students have a right to use all of the resources and facilities of the College during normal operating hours with the proper authorization. Students may not utilize the resources or the facilities of the College after hours without prior official approval and without faculty supervision. The security personnel must be notified under these unusual circumstances.

Off-Campus Sites
Many credit and non-credit courses are scheduled at community schools and other locations county-wide. All rules and regulations of Wake Technical Community College apply at off-campus sites in addition to any rules and regulations specified by those sites.

The News and Observer Adult Education Center
The Basic Skills program is housed in The News and Observer Adult Education Center located at 1920 Capital Boulevard, Raleigh. Basic Skills is designed primarily to help adults learn to read; improve math, reading, and writing skills; earn a high school or GED diploma; and learn English as a second language.

The Basic Skills program is also designed to help underemployed/unemployed persons prepare for employment or further education, developmentally disabled persons achieve their potential, and families strengthen literacy skills and family bonds.

No tuition is charged; however, books and supply charges may apply.

Basic Skills classes are offered at community sites as well as the Main Campus and the Adult Education Center. Placement and orientation for community classes are conducted at the class site. To pre-register for classes on the Main Campus, call the Individualized Learning Center at (919) 866-5276.

To schedule an appointment for the Adult Education Center or to learn more about Basic Skills programs and their locations, individuals should call the Adult Education Center, 715-3434.

Business and Industry Center at Western Wake Campus
3434 Kildaire Farm Road, Cary, NC,
or call (919) 335-1000

The Business and Industry Services Division provides customized employee training for area businesses. Training can be designed for industrial, clerical, supervisory and management occupations. It includes the following areas:

Apprenticeship - Customized apprenticeship programs in various trades
Professional Development and Corporate Training - Personal development programs customized to meet the needs of participating businesses and individuals
Focused Industrial Training - Technical knowledge, job upgrading or other on-site skill training for small groups of workers
New and Expanding Industry - Cooperative program with new and expanding industries in the area, with the purpose of providing a supply of trained personnel
Small Business Center - Technical and managerial assistance to prospective and current business owners and operators through a variety of seminars, study courses and one-on-one assistance

Student Centers
The Student Center on the Main Campus is located in the Student Services Building, Room 121. The Center houses T.V. recreation areas, Lost and Found, and the Student Photo ID Office (SS121F).

The Student Center on the Health Sciences Campus is located in the Health Sciences building. The center houses a food service (vending machine) area, TV area, and study and lounge areas.

The operational policies are posted on the bulletin boards at both centers.

Information Technology Services
The mission of Information Technology Services at Wake Technical Community College is to support Student Learning, Faculty Teaching, and College Operations through the use of Information Technology.

Information Technology Services is located in Room 116 of the Pucher-LeMay Building. Hours of operation are 7:30 a.m. to 10 p.m., Monday through Friday; and 7:30 a.m. to 5 p.m. on Saturday.

The College makes every effort to provide state-of-the-art hardware and software for students to use. No smoking, eating, or drinking is allowed in the computer labs. Students should conduct themselves professionally at all times. To insure quality service, students should report any problems immediately to their instructor.
Wake Tech Internet Policy
At Wake Technical Community College, Information Technology Services has provided equipment and access for students, faculty, and staff to connect to the Internet. The College wants the internet to be an effective resource that adheres to the mission of the College. Users of Wake Tech’s computer services are expected to abide by the following policies, which are intended to preserve the utility of the system, to protect the privacy and work of students, faculty, and staff, and to preserve the right to access the international networks to which the College systems are connected.

General Usage Policy
1. Faculty, staff, and students with permission from College officials may use the College’s computing facilities for scholarly purposes and official College business so long as such use does not violate any laws or College policy and does not result in commercial gain or private profit.
2. The College prohibits accessing internet services that do not further educational interests. This specifically includes, but is not limited to, subjects pertaining to pornography. Accessing or distributing pornographic materials is a violation of this policy that will result in disciplinary action, up to and including, termination or expulsion.
3. Use of electronic mail and other network communications facilities to harass, offend, or invade the privacy of other users of the network is prohibited. The College reserves the right to access files that it has reason to believe violate College policy. Data, including email stored on College systems, is the property of the College.
4. Students are not permitted to use the College’s name or any association with the College in websites they create. Faculty and staff members are not permitted to use the College’s name or any association with the College in websites they create that reflect negatively on the College or violate any of the policies contained herein.
5. Violation of any of the above provisions will result in disciplinary action, up to and including termination or expulsion.

To report a problem in a computer lab, please go to http://helpdesk.waketech.edu and enter a service request, or call 886-7000 to speak to someone at the Wake Tech Help Desk. If you are on campus, you can reach the Help Desk by dialing extension 357.

Instructional Technology Department
The department provides media services to Wake Technical Community College administration and instructors on all campuses and at community schools locations.
Audiovisual equipment can only be checked out by an instructor of the College and other authorized College personnel.

Students requiring any audiovisual services must make arrangements through their instructors with the approval of their department head. The department supports telecommunications via a down-link satellite receiving station for teleconferences and telecourses.

Instructors frequently use the audiovisual studio to improve communications, advertising, and sales skills of their students. The audiovisual department hours are Monday through Friday, from 7:30 a.m. to 5:00 p.m. For assistance with audio-visual requests, please submit a work order with the Wake Tech Helpdesk. This can be done online at http://helpdesk.waketech.edu

Bookstore
www.waketechbookstore.com
Students are encouraged to take advantage of online ordering and home delivery.

Students may purchase from the College Bookstore necessary books, supplies, and other items such as stationery, aspirin, class rings, and pins. Normal hours of operation are Monday - Thursday, 8 a.m. - 8 p.m., and Friday, 8 a.m. - 4:30 p.m. Special hours of operation are posted on the Bookstore door as needed.

Students should be aware of the following operational policies of the Bookstore:
Required textbooks for a particular term are available through the drop/add period. Immediately following the tenth academic day of a semester, most of the unsold books are returned to the publishers.
Cash refunds for returned books will only be authorized with presentation of the Bookstore cash register receipt. Books returned for refund must be new and in undamaged condition containing no writing or marks. Requests for refund for books must be made during the first ten academic days of the semester.

A special order for a book may be placed through the Bookstore by furnishing the title, author, edition, and publisher of the book. A cash deposit is required. The book must be purchased within 30 days after being received by the Bookstore or the deposit is forfeited. Students may purchase books online at www.waketech.edu. Select the “Student Resources” link.

Libraries
Wake Technical Community College operates two libraries, as well as providing student resources through a library website at http://library.waketech.edu.

Combined resources for these libraries include over 75,000 books, 500 periodical subscriptions, 7,000 audiovisual items, and access to a variety of databases, including the state consortium NC Live. The use of library resources requires registration with the library: students must present a valid student ID card; Wake County residents must show a valid driver’s license. Reference materials, reserves, periodicals, and newspapers are restricted to library use only.
Both libraries have coin-operated copiers. Howell Library has seating for more than 300 people and offers group study rooms, a media center, and an assistive technology room equipped for various needs. Howell Library also has over 40 computers available for education and research purposes, as well as a classroom training area and a collection of maps and atlases, some available for checkout.

The Health Sciences Library has seating for over 100 people and includes 25 computers for educational and research purposes, including a lab for instructional activities. The library also has audio-visual viewing equipment for use with its video collection as well as a collection of anatomical models.

Librarians and staff are on duty to assist with reference or research needs and to answer general questions. If you need assistance or have questions about finding, accessing, or using resources, please see a library staff member.

The library website is a portal for information and resources, including the online catalog, access to NC Live and NC Knows (virtual reference), subject guides, and links to other useful resources in specific subject areas. Also available on the website are library statistics and hours of operation and information about reserve books, tutorials, and distance learning.

The libraries may be contacted at 866-5644 (Howell Library) or 212-3836 (Health Sciences Library).

**Individualized Learning Center**

Services are available at Main Campus, Health Science Campus, and on-line for Distance Learning tutorials.

The Individualized Learning Center (ILC) offers study opportunities geared to an individual's personal needs or interests that include:

- One-on-one tutoring
- On-line support for distance learning students
- Computer-assisted instruction
- Videocassettes, programmed texts
- Instructor-directed workshops

ILC services are free, and any Wake Tech student or employee may use the center at his or her convenience. All users must complete a data form and use the timekeeping system.

The **Skills Centers** are designed to offer support services to curriculum students. Instructors can refer students to the Computer Center, the Math Center, the Study Skills Center, the Foreign Language Help Center, or the Writing Center for tutorial assistance.

The **Computer Center** offers assistance with word processing, keyboarding, Windows applications, programming, web designs, and other course-related software. Videos, tutorial, books and basic user guides are available for student use. The Computer Center offers workshops for Windows and word processing. Instructors can also request introductory tours.

The **Math Center** offers tutorial assistance for students taking traditional math classes, chemistry, physics, or any class with a math component. The Math Center also has computers, videos, slide and cassette programs, books, and other supplementary materials for student use. Excel, TI-84Plus, TI-86, and TI-89 calculator workshops are offered each semester.

The **Study Skills Center** offers one-on-one tutoring and a variety of workshops and videos which focus on three major areas: identifying individual learning styles, improving study skills, and improving reading skills. The center supports all curricula at Wake Tech.

The **Foreign Language Help Center** opened in August 2005 and provides one on one tutoring and resources to support French and Spanish courses. In addition to tutoring, the Center offers workshops, dictionaries, guided study groups, oral practice, assistance with compositions and oral presentations, and handouts and worksheets for additional grammar, vocabulary, oral, and written practice.

The **Writing Center** stresses an across-the-curriculum philosophy. Tutorials are conducted on a one-on-one basis with the student’s writing serving as the focal point of discussion. In addition, the Writing Center offers workshops on grammar, the writing process, documentation, and literary analysis; online help to students enrolled in distance education courses; and revision assistance to students writing at the computer. Walk-in appointments are available morning and early afternoon hours; appointments may be reserved for evenings and Saturdays.

The goal of the **Basic Skills Center** is to assist students in improving fundamental skills that lead toward mastery and achievement of its program goals. Ability to benefit from the program is a prerequisite for entering and continuing in the program. The ABE/GED preparation program is designed to assist adults who want to learn reading, writing, math (Adult Basic Education), and/or who want to complete a high school equivalency (GED) diploma. Instruction is individualized and materials are self-paced. Students may enroll at any time. Those under age 19 must provide special paperwork and students must attend a placement test session.

**Basic Skills/GED Program Hours:**

Day: Monday – Friday
9 a.m. – 2 p.m.

Evening: Monday, Tuesday, Thursday
5 p.m. – 9 p.m.

**Additional Services** are available in the ILC. Please inquire ahead to receive information on how to take advantage of these services:

- Admission preparation for students desiring to prepare for the Wake Tech placement tests
- Basic algebra and chemistry to meet Wake Tech entrance requirements
- Basic mathematics, algebra, intermediate algebra, college algebra, and trigonometry videos
ILC locations and hours of operation:

401 S Campus: Room 113
Individualized Learning Center Building (formerly ETA Bldg)

Health Science Campus: Suite 203 – Health Science Annex

Monday – Thursday
8 a.m. – 9 p.m.
Friday
8 a.m. – 5 p.m.
Saturday
9 a.m. – 1 p.m.

Telephone
866-5276

Tuesday – Thursday
12 – 6 p.m.

Telephone
250-4241

Hours may vary within each skills center. Please call ahead to check availability.

ILC website: http://ilc.waketech.edu

ILC Distance Learning Website: http://ilc.waketech.edu

English as a Foreign Language
The English as a Foreign Language (EFL) department offers academic English courses designed for individuals whose native language is not English and who wish to study at the college and university level in the United States. These courses comprise an intensive English language program that focuses on language for academic purposes; courses are offered on four proficiency levels in grammar, composition, reading, and listening/speaking.

This program meets the requirements for those students who have a student visa. Prospective students who wish to obtain a student visa should go to the International Student website at http://international.waketech.edu. Tuition is the same rate as for any other curriculum class offered at the college. The EFL office is located in the Technical Education Building, Room 109. Prospective students can call 866-5426 for more information.

The EFL department also offers supplemental instruction through its EFL Lab, where there are materials for self-study, individual tutoring, and small group work. Students needing additional assistance in their non-EFL classes are also encouraged to seek help in the lab; workshops on a variety of topics are offered periodically. Multi-level materials focus on listening comprehension and pronunciation, and a limited number of instructional software packages are available in the computer area of the lab.

Students in EFL and foreign language classes can also benefit from the Conversation Partners Program that is sponsored through the lab. The academic EFL Lab is located in the Technical Education Building, Room 110, on the Main Campus. Basic Skills English as a Second Language classes are offered through The News and Observer Adult Education Center at 1920 Capital Boulevard, Raleigh, NC.

Housing
The College does not have housing facilities, but students should have no difficulty in locating satisfactory housing. Some places provide room and board at moderate rates. Students and landlords should have a complete understanding with regard to rental conditions so that there will be no misunderstanding concerning such details.
Wake Technical Community College offers students three options for distance education instruction: Internet courses, hybrid courses, and telecourses. These alternatives to traditional seated classes allow students to take courses at times convenient to their schedules. Each course is facilitated by a qualified, competent instructor who develops the course so that the learning outcomes are comparable to a traditional seated class, who serves as a resource to the students, and who provides a syllabus and course guidelines. Costs and credits earned are the same as on-campus courses, and students have access to equivalent services and resources. Students interested in taking a distance education course should go to the College’s website, www.waketech.edu, and click on the “Distance Education” link.

Internet Courses
Students registered for Internet courses may be offered the opportunity to attend an orientation or other meeting at the College, but generally the subject matter is presented online and distributed through the College's Blackboard server, http://dist-ed.waketech.edu. Students must have an e-mail account and access to a personal computer with an Internet connection and browser software. Wake Tech faculty develop and teach online courses.

Before enrolling in an Internet course, students should:
1. Preview the Internet course, http://DistanceEd.waketech.edu/preview.htm
2. Participate in the online student orientation, http://DistanceEd.waketech.edu/internet/orientation.html
3. Take the self-assessment entitled “Are You Prepared for an Online Course?”; and
4. Review the frequently-asked questions on the distance education website, http://DistanceEd.waketech.edu

Hybrid Courses
Hybrid courses combine regular classroom meetings with Internet instruction, reducing the number of hours a class meets on campus during the semester. The instructor determines the class schedule, which is published in print and online. Students must have an e-mail account and access to a personal computer with an Internet connection and browser software.

Before enrolling in a hybrid course, students should:
1. Preview the hybrid course, http://DistanceEd.waketech.edu/preview.htm; and
2. Review the online student information posted on the distance education website, http://DistanceEd.waketech.edu/

Telecourses
Instruction for telecourses is offered via videocassettes, which students view at a time and location of their choosing; they are, however, required to attend a certain number of on-campus meetings as indicated by the instructor, including an orientation. In addition, exams are taken in the Distance Education Testing Center on the main campus during a time period specified by the instructor. Telecourse videos are obtained from commercial producers.

At the beginning of each semester, students are loaned a complete set of telecourse tapes and are required to sign an agreement indicating their understanding of the charges for tapes that are not returned at the end of the semester. Students are charged a fee of $5 per tape for any missing tapes ($65 for the entire set) and registration will be blocked until either the tapes are returned to the College or the fine is paid in full.

Before enrolling in a telecourse, students should:
1. Read the telecourse information at http://DistanceEd.waketech.edu/tele/info.html
2. Take the self-assessment entitled “Are You Prepared for a Telecourse?”; and
3. Review the frequently-asked questions on the distance education website, http://DistanceEd.waketech.edu

Testing Center
Telecourse and online instructors may require students to take tests on the main campus. The Distance Education Testing Center is located in Room 15 of the Library Education Building. Hours are posted online at http://DistanceEd.waketech.edu/testcnt.html or students may call (919) 866-5618.

Library Resources
To maintain a sound-learning environment, students enrolled in distance education courses have access to the Howell Library on the main campus and the Health Sciences Library on Sunnybrook Road near Wake Medical Center. Although traditional library services are available to all students, the College has expanded its services to accommodate distance learning. The library's website, http://library.waketech.edu is available to on-campus, off-campus, and distance education students. The website provides information on interlibrary loans, loan periods, hours of operation, and electronic and print databases. The website has links that provide access to other libraries, resources, search engines, and services such as NC LIVE.
Counseling
Counseling Services provides academic, personal, and career development services designed to promote student success and progress toward attainment of educational goals. Professional staff work closely with students to strengthen decision-making, critical thinking, goal setting, and other skills that empower students to achieve their potential and be responsible for their own success. Counselors coach students in setting a career path, defining a plan of study, and selecting initial courses appropriate for fulfilling their academic objectives. They are also available to counsel students regarding academic pressures, stress or frustration, adjustment concerns, and other social or personal matters. Additionally, counselors may make referrals when necessary to appropriate resources.

Counselors assist students in developing the strategies, attitudes, and discipline needed to make or maintain satisfactory progress in academic coursework and toward achievement of goals. In individual conferences, group settings or classroom workshops, counseling staff present information and conduct activities designed to maximize retention and student success. Workshops offered include, but are not limited to, topics on stress management, time management, test anxiety, career interest and preparation, relationship-building and practical college survival strategies.

Hours of operation are 8 a.m. to 5 p.m., Monday through Friday. Evenings are available by appointment.

Faculty Advising
The purpose of the faculty advising system is to help provide the most effective, helpful educational environment possible. Every curriculum student is assigned a faculty advisor. Students in the A.A. or A.S. College/University Transfer programs are assigned to the College/University Transfer Advising Center. All other students who place into Pre-Curriculum courses are assigned to the Pre-Curriculum Advising Center. The advisors are available to students through regularly scheduled office hours to counsel students concerning problems they may have. Students have the responsibility for planning their programs of study with the help of their faculty advisor. This involves (1) keeping up to date with College and division curriculum requirements; (2) keeping informed of academic deadlines and changes in academic policies; and (3) consulting with the faculty advisor at each pre-registration period and at other times as needed.

Career Center
Career Center counselors provide assistance to Wake Tech students in defining goals and establishing a career path. Enrolled students may receive guidance in self-discovery, exploring and evaluating career options, and planning educational programs that reflect their interests or career goals.

The Career Center provides an educational setting for students who wish to enhance their understanding of career trends in today’s labor market. A valuable resource room, it contains useful reference materials that include The Occupational Outlook Handbook, The ONET, The Complete Guide for Occupational Exploration, Vocational Biographies, state and national career guides, as well as a variety of career videos and websites. Occupational computer software includes the Internet, NC Careers, Sigi 3, and Discover. Catalogs, applications, and videos highlighting senior institutions are also available. Students may also access all career development services through our interactive web pages at http://counseling.waketech.edu.

Hours of operation are 8:00 a.m. to 5:00 p.m. Monday through Friday and evenings by appointment.

Photo ID
It is important that all curriculum students on the Main, Western Wake, Health Sciences, and North Campuses obtain and carry at all times their Wake Technical Community College Student ID. IDs will be required in order for students to use the Student Lounge, ILC, Library, and certain Continuing Education classes. Student IDs may be obtained on the Main and Health Science Campuses, between 8:00 a.m. and 5:00 p.m., Monday through Friday. The initial Student ID will be free; a duplicate ID can be obtained for $5.00.

Disability Support Services
The mission of Disability Support Services (DSS) is to adapt the College’s general services to the specialized, individual needs of otherwise qualified students with disabilities, for the purpose of providing equal access to all programs and facilities.

Consistent with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, Wake Technical Community College is committed to equality of educational opportunity and ensures that no qualified person shall by reason of a disability be denied access to, participation in, or the benefits of any program or activity operated by the College. Each qualified person shall receive reasonable accommodations to ensure equal access to educational opportunities, programs, and activities in the most integrated setting appropriate.
Students requesting disability accommodations from the College must self-identify to Disability Support Services. Students are required to submit current documentation of their disability to DSS to determine eligibility prior to the implementation of services. Students requesting accommodations from the College must have a disability as defined by Section 504 and the ADA. Self-identification and providing documentation can be initiated at any time; however, the student must allow reasonable time for accommodations to be implemented.

To obtain additional information or to request documentation guidelines and/or DSS Policies and Procedures, please contact the DSS office at (919) 866-5670 (TTY 779-0668).

**Cooperative Education Program**

Wake Technical Community College was the first college in North Carolina to offer its students the benefit of participation in Cooperative Education. Wake Tech students have enjoyed this extra benefit since 1966. Students who graduate from curricula that offer the cooperative education component begin their job search with several months of work experience in addition to their degree. In a highly competitive job market, an associate degree or a diploma plus actual work experience related to the chosen curriculum is highly desirable and gives the Wake Tech graduate an advantage over other job applicants.

Because of the intrinsic value of Cooperative Education for the student, Wake Tech requires participation in Cooperative Education in many of its technical and vocational curricula. The College reserves the right to implement, change, or discontinue the Cooperative Education component in any of its curricula.

To become eligible for Cooperative Education, students must meet the following criteria:

- Be enrolled in one of the A.A.S. degree or Diploma programs approved for Cooperative Education credit.
- Be recommended in writing by the student’s faculty advisor.
- Satisfactorily complete the equivalent of one semester with 14 semester-hour credits at Wake Technical Community College of the major curriculum (unless otherwise specified by the program).
- Apply for participation with the Co-op office.
- Maintain a grade-point average of 2.0 or better. Students enrolled in the degree or diploma Early Childhood Associate curricula must maintain a 2.5 GPA. Students who have a low GPA or have not completed the required number of courses will not be accepted for Co-op. After improving his/her grade-point average and/or completing the required courses, a student may re-apply for Co-op.
- Attend seminars or scheduled meetings conducted by the Cooperative Education staff.
- Demonstrate satisfactory personal appearance, attitude, and the ability to work.

- Meet standard health requirements for any Co-op job.
- Be legally authorized to work in the United States. Students should be prepared to produce a social security card, a birth certificate, and/or a driver’s license.
- Certain academic programs may have additional specific requirements for eligibility.
- Meet employer requirements before starting work experience which may include background and credit checks, and drug testing.

Additionally, whether or not a student is eligible to be placed in a co-op job will be determined by the Coordinator of Cooperative Education, based upon selected criteria such as the student’s prior work experience, academic performance, attitude, appearance, health, and position availability. Once the determination has been made that the student is eligible for a co-op placement, it will be necessary for the student to satisfactorily complete all co-op orientation sessions, seminars, and assignments in order to graduate. After determination of co-op eligibility, the student will begin the process of interviewing with employers for a co-op job. Every effort is made to place all eligible students in a co-op job; however, job placement cannot be guaranteed.

The program is designed to be as flexible as possible to accommodate individual career plans. Students may choose from among several methods to conduct their work experience depending on employer’s needs. Those plans include part-time and full-time work assignments.

Cooperative education is required for graduation in many of the curricula that offer it as a component. In some cases, cooperative education credit may be applied to satisfy electives or other requirements.

By its name, “Cooperative Education” is an activity involving the cooperation of Wake Technical Community College, Wake Tech students, and participating businesses and industries. Therefore, the program is managed through the utilization of certain guidelines and procedures to which all parties must subscribe. The benefits of cooperative education are numerous:

**Benefits to Student**

- Increases motivation
- Relates theory to practice
- Participates in the work world
- Relates abilities and interest to actual work
- Acquires occupational information
- Develops understanding of human relations
- Earns an income (earnings vary with job and employer)
- Acquires valuable job experience (usually means a higher starting salary)
- Develops sense of responsibility
- Acquires increased maturity
- Graduates with classmates
- Acquisition of Job Search Skills (resume preparation, interviewing skills, etc.)
Benefits to Employer

- Reduces training costs
- Reduces recruiting costs
- Increases performance as a permanent employee
- Improves employee retention
- Provides recruiting pool of experienced graduates
- Provides opportunities for employer input to College programs

Job Placement
The Job Placement Office assists students in seeking full-time, permanent employment upon graduation, as well as finding part-time, temporary employment while they attend school. Job development within each curriculum is promoted at Wake Tech as an ongoing function. The services provided by the Job Placement Office are available to any curriculum student currently enrolled at Wake Tech and to all graduates within the last five years. The Job Placement Office coordinates all on-campus job/military recruiting. The College does not guarantee employment to any student or employees to any employer. There is no charge to industry or to students for placement services.

International Students
The International Student Office assists international student applicants who wish to apply for a student (F-1) visa or other non-immigrant visa holders who want to convert to F-1 status. It also provides on-going assistance for F-1 visa students in their communication with the Citizenship and Immigration Services (CIS), including but not limited to: application for appropriate employment authorization, extension of I-20 expiration date, transferring an I-20 to another college or university, travel abroad, and re-entry procedures and documentation of F-1 status. In addition, international students may seek advice and referral information on all aspects of living and studying in the United States. All international (F-1) students are required by CIS regulations to have a current record of their local and foreign addresses on file with the College.

Special Students
Special students are those who are enrolled in one or more curriculum courses, but are not working toward a degree, diploma, or certificate. Special students must meet all course prerequisites or receive approval from the instructor before registering for a course. Special students who decide to earn a degree, diploma, or certificate must complete the admissions requirements for regular students. They should declare a major prior to completing 16 credit hours in a specific program.

Advanced Standing

Transfer of Credits
Wake Technical Community College will consider, for transfer credit, courses from other colleges or collegiate institutions accredited by a commission whose responsibility is accrediting degree-granting institutions classified as collegiate, and be a commission housed in a regionally accrediting agency. Only those courses with a grade of “C” or higher will be considered for transfer credit and must be equivalent in content and credit hours to the course(s) within the curriculum that the student is entering. Transcripts from accredited institutions will be reviewed and transfer credit recommended by the Enrollment and Records Services Division, as directed by the curriculum education deans. The decisions as to whether any transfer credit will be allowed, and if so, how much transfer credit will be allowed and how such transfer credit will be applied, are discretionary on the part of the College. The College will determine whether to award credit for courses taken three or more years prior to transferring to Wake Technical Community College.

Challenge Examinations
Students seeking credit for non-transferable learning experiences for any course, except College/University Transfer and Pre-Curriculum, may request a challenge examination. Subject matter for which credit is sought must be equivalent to the course(s) being challenged. Challenge examination requests will not be accepted for incomplete or failed course work. Requests must be made with full justification to the division dean or dean’s designee. Students who successfully challenge a course will receive credit for the course with a grade of “X.” The course will not enter into grade-point average computations, but will count toward the total hours earned. Students must register and pay tuition for courses to be challenged and must submit requests for challenge examinations after registering for the course(s) to be challenged. In order to get credit on the transcript record, it is necessary to remain registered for a class that has been challenged successfully. ENG 111, 112, 113, and 114, and all other College/University Transfer courses may not be challenged; instead, students may take the appropriate CLEP, AP, or DANTES exam.

FRENCH AND SPANISH NATIVE SPEAKERS ARE NOT ELIGIBLE TO RECEIVE CREDIT FOR 100 LEVEL FOREIGN LANGUAGE CLASSES
Students who think that their language skills will earn them credit for more than one course and want to get as much credit as quickly as possible should take the CLEP exam. For specific information on CLEP testing, please visit the web site for www.collegeboard.com

Students may take the Language Placement Exam in a given foreign language only once. They may not take the test once they are taking or have taken a foreign language course at Wake Tech. If a student believes he/she may have been placed into a too low or high level class, he/she needs to contact Melania Aguirre-Rabon, Foreign Language Department Head, PLM 204H, miaguirr@waketech.edu

Foreign language faculty reserve the right to request that a student take the Language Placement Exam.

Inasmuch as some divisions have adopted more restrictive challenge examination procedures, students should make every effort to start the challenge examination process as soon as they register for the course(s). Students must take all challenge examinations no later than the 10-percent point of the semester or term. Students may obtain information on the results of their examination by inquiring at the Enrollment and Records Services Division. Positive photo identification will be required. Results of challenge examinations will be mailed after the exams have been graded and results forwarded to the Enrollment and Records Services Division.

Most challenge exams are administered within the appropriate department, however, a select number of courses including BUS 110, 121, 137, 147, 153; ENG 101; MAT 070, 080; PSY 101, 110, and 118 may be taken in the Individualized Learning Center (ILC) on main campus.

Students challenging these select courses must obtain approval from the Division Dean and contact the ILC (866-5276) to schedule an appointment to take the exam. Both the Division Dean approved form # 610 and student photo identification is required for ILC administered challenge exams.

AARTS (Army/ACE Registry Transcript System)
The AARTS transcript is an American Council on Education approved method of presenting military experience for academic credit. Students possessing an AARTS transcript for military educational experience after 1981 may submit the transcript for credit evaluation in any program except College/University Transfer and Health Sciences. In order to obtain a copy of their AARTS transcript, students may write: Manager, AARTS Operations Center, Ft. Leavenworth, KS 66027-5073.

Advanced Placement (AP) Credit
The College Entrance Examination Board (CEEB) sponsors an advanced placement program that enables high school students to complete college-level courses while still in high school, to demonstrate college-level achievement through examinations, and to receive college course credit when they matriculate to an institution of higher education. The CEEB examinations are offered in the high schools by the Educational Testing Service (ETS).

Carolinas Associated General Contractors Articulation Agreement
Articulation is the delineated process that awards college credit for certain courses completed elsewhere. The college will award college credit for specific CAGC training courses in partial fulfillment of program requirements leading to an Associate in Applied Science degree, diploma or certificate in Construction management Technology. Official transcripts will be reviewed and transfer credit recommended by the appropriate academic division deans.

Certified Professional Secretary® (CPS®) and Certified Administrative Professional® (CAP®) Credentials
Students applying for entry into Office Systems Technology (A25360), Office Systems Technology/Legal (A2536A), Medical Office Administration (A25310), Business Administration (A25120), and Business Administration/Human Resources Management (A2512C) and Business Administration/Electronic Commerce (A2512I) will be granted credit for some courses upon showing proof of having earned the CAP or CPS rating within the past six years. Additional credits in keyboarding, word processing, spreadsheets, databases, business presentations, and computer literacy may be earned at Wake Tech based on the successful completion of challenge exams in these skill areas.

College Level Examination Program (CLEP) Credit
CLEP is a program that offers the student the opportunity to earn college credit for knowledge acquired outside the conventional classroom. College-level competency may have been acquired through personal reading, formal study, job experience, non-credit course work, television-taped courses, correspondence courses, military training, adult courses, and advanced studies in high school. For information regarding the CLEP Testing Program, contact the College Board at www.collegeboard.com/clep.
DANTES Standardized Subject Tests (DSST)
The DANTES Program (Defense Activity for Nontraditional Education Support) is a testing service conducted by Educational Testing Service (ETS). DANTES, an agency of the Department of Defense, was created to help service members obtain credit for knowledge and skills acquired through nontraditional educational experiences. Since World War II, DANTES has sponsored and administered tests that provide qualified military personnel with the opportunity to obtain academic credit. DANTES Subject Standardized Tests provide a way for military personnel to obtain credit by examination for knowledge of material commonly taught in college courses.

Dental Hygiene Program
Advanced standing is considered for students enrolled in the Dental Hygiene program if they previously have attended a Dental Assisting or Dental Hygiene program accredited by the American Dental Association, Commission on Dental Accreditation (ADA, CDA). Direct credit may be granted or a challenge exam taken for select courses within the program. More specific criteria are noted within the department’s student handbook, which is provided once admitted to the program.

Emergency Medical Science Advanced Placement through Certification
Students may receive advanced standing in the EMS prefix classes through certification. Other EMS courses may be challenged by the student based on experience at the discretion of the EMS Department Head. The student must score 78 percent or better to receive challenge credit. Challenges of EMS courses to gain higher certification are not allowed.

Associate Degree Nursing
Advanced Placement for LPNs
Students may receive advanced standing in the Associate Degree Nursing program by holding a current unrestricted license to practice nursing as a practical nurse in North Carolina. Students are required to take Nursing Assessment, NUR 133, prior to enrollment in the NUR course sequence. Students are advanced to 3rd term in the Program of Study. All prerequisite courses for 3rd term must be completed with a grade of C or better to be advance placed. Below is a basic guide for advanced placement for the student with a current unrestricted LPN license. Students should contact the Admissions Department and the Associate Degree Nursing Department Head for questions about advanced placement.

Navy Articulation Agreement
Articulation is a delineated process that awards college credit for certain courses completed elsewhere. Per the Articulation Agreement between Wake Technical Community College and the United States Navy, Wake Technical Community College will award college credit for specific Naval training courses in partial fulfillment of program requirements leading to an Associate in Applied Science degree in Industrial Systems Technology. Completion of both portions of the college coursework – preliminary studies at Wake Technical Community College and success through formal Navy Training curricula and job experience, as accredited by the American Council on Education (ACE), is required before the student is eligible to receive the associate degree from Wake Technical Community College.
Veterans Educational Benefits (G.I. Bill)

Most of the programs offered by the College are approved for training veteran students, Ready Reservists, North Carolina National Guard members, and the spouses and children of deceased or 100-percent disabled veterans. Veterans desiring to train using the benefits of the G.I. Bill must first establish their eligibility with the Department of Veterans Affairs (VA). Veterans separated from service within the last ten years who hold an Honorable Discharge usually qualify for G.I. Bill training. In general, 36 months of full-time training is provided.

Certain military personnel on active duty are also eligible for schooling under the G.I. Bill. Interested servicepersons should contact their duty station Education Officer for details prior to applying for admission to the College.

Veterans attending Wake Technical Community College under the G.I. Bill receive a monthly reimbursement from the Department of Veterans Affairs. The course load taken determines the amount; for example, to receive the full VA benefit, the veteran must be enrolled for a minimum of 12 credit hours. A veteran carrying half a full-time course load would receive half the benefit. Veterans should contact the College VA certifying official (Registrar) for detailed information.

Veterans are accorded the same rights and must meet all academic requirements and maintain the same academic standards as any student attending Wake Technical Community College. Veterans will not be certified to the VA until all entrance/admissions criteria, including high school and college (if applicable) official transcripts, are in the student’s file. All transfer credit from prior college experience that has been evaluated and granted must also be on file.

Veterans must meet the grade-point average (GPA) standards established in “Academic Probation and Suspension.” A veteran failing to meet GPA standards at the end of a term will be placed on academic probation. A veteran failing to meet the GPA standards at the end of the next term in attendance will have his enrollment certification to the VA terminated. Certification of enrollment to the VA will not be restored until GPA standards are met, and then only upon request by the veteran.

Veterans dropped from a course by the College for missing all scheduled class meetings in any ten consecutive academic day period will be immediately reported to the VA, and adjustments, as appropriate, will be made in G.I. Bill payments.

Policy for Veterans to Enroll in Non-Traditional Study Courses Such as Telecourses, Internet, Videocassette, and Independent Study

- In order to maintain a high quality of educational and academic excellence, all VA students receiving educational benefits from the Department of Veterans Affairs will meet the following criteria before enrolling in non-traditional course(s).
- The veteran must first meet with the VA certifying official before registration, so that proper information and procedures can be discussed.
- The veteran should review the Distance Education Student Self-Assessment on the Wake Tech website or in the class schedules publication to determine if he/she is suited to this style of learning.
- The veteran must have completed any remedial work needed as determined by the College’s placement test.
- The course must be required in the veteran’s current program.
- The veteran must pass each non-traditional course attempted in order to enroll in a subsequent study course.

No additional charge is required for enrolling in non-traditional course(s).

Clinical Assignment Policy

It is the policy of Wake Technical Community College that no student engaged in a Health Sciences curriculum may refuse any clinical assignment considered normal clinical duty by the host provider. Refusal of a clinical assignment by a student will be considered grounds for the immediate termination of the student from his/her curriculum. The student will not be accepted into any other health-related curriculum.

Residency Qualifications

To qualify for in-state tuition, a legal resident must have maintained his or her domicile in North Carolina for at least the 12 months immediately prior to his or her classification as a resident for tuition purposes. To be eligible for such classification, the individual must establish that his or her presence in the state during such 12-month period was for the purpose of maintaining a bona fide domicile rather than for purposes of mere temporary residency incident to education.
Aliens are subject to the same considerations as U.S. citizens in the determination of residency status for tuition purposes except that holders of B, C, D, F, J, M, P, Q, or S visas may not be considered residents for tuition purposes and their dependent relatives are not eligible for a tuition rate less than the out-of-state rate. Holders of E, H, L, O, or R visas may (under certain circumstances) be eligible for the in-state tuition rate.

Regulations concerning residency classification for tuition purposes are set forth in detail in *A Manual to Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes*. Each enrolled student is responsible for knowing the contents of this Manual, which is the controlling administrative statement of policy on this subject. Copies of the Manual are available for student inspection in the Enrollment and Records Services Division.

Determination of student resident status for tuition purposes:

1. Upon applying for admission to the College, each prospective student is classified as a resident or non-resident of North Carolina for tuition purposes, according to the student’s declaration at the time of application.

2. In the case of an individual who is originally classified as non-resident and later requests reclassification to resident status, the individual will be asked to complete a “Residency and Tuition Status Application.” Along with the completed application, two proofs will need to be provided in order to support a claim for in-state status. This form is available on the College’s website. An Assistant Registrar will review the application, make a determination as to the individual’s residency/non-residency status, and then will advise the individual in writing of the decision.

Procedures for Hearing Appeals

In the event an individual disagrees with the Assistant Registrar’s ruling on his/her residency status, the ruling may be appealed to the College Residency Committee, which has been established by the President of Wake Technical Community College. The appeal must be made in writing to the Vice President of Student Services.
Admissions & Registration Information

Wake Technical Community College follows the Open Door Policy established by the State Board of Community Colleges. This policy provides for the admission of any person who has reached the age of 18 or whose high school class has graduated. This policy is based on the belief that the College has something to offer at all educational levels and that through effective guidance a person can find his or her place in the proper educational program.

Application
Any individual wishing to apply to Wake Technical Community College should contact the Information Center at 919-662-3500 to request an application. Each applicant must submit a properly completed application to the Office of Admissions. The application form should reflect the student’s classification. Classification of applicants:

► A **curriculum applicant** is any person who is pursuing admittance into a degree, diploma, or certificate program. Curriculum applicants should complete the standard (WTCC Form 66) Application for Admission.

► A **special applicant** is any applicant who is planning to enroll in one or more curriculum courses, but who is not pursuing admission into a degree, diploma, or certificate program. Special students may complete the standard Application for Admission (WTCC Form 66) or the Special Student Application. Special students must meet all course prerequisites or receive approval from the instructor before registering.

**NOTE:** Generally, the special credit status is limited to 16 semester hours. Special credit students are not eligible for financial aid or veterans’ benefits, nor are they permitted to earn any degree, diploma, or certificate awarded by the College. Students wishing to change from special credit to curriculum status **must** complete the standard application (WTCC Form 66) and submit all necessary transcripts.

► A **concurrently enrolled** applicant is any currently enrolled private, home, or public high school student who wishes to take concurrent classes at Wake Tech. Concurrently enrolled applicants should use a standard application (WTCC Form 66) and also must submit a permission form obtained from their school. Home and private school applicants may request this form from the Information Center. Applicants must be 16 years of age by the first day of the semester. (The 2005 Session of the North Carolina General Assembly enacted House Bill 583 to allow a student under the age of 16 to enroll in a community college if the president of the college or the president’s designee finds that the student is intellectually gifted and has the maturity to justify admission to the college. Students wishing to pursue this option should contact the Director of Admissions for specific criteria and procedures.)

Transcripts
Each applicant **must** request that official copies of transcripts of all previous high school and college (if any) work be submitted directly to Wake Tech. Transcripts become the property of the College upon receipt and may not be copied for student use. Faxed copies are **NOT** considered official transcripts. **Acceptance by Wake Tech is conditional based upon receipt of final official transcripts.**

► **High School:** Those who are high school seniors should have their school submit a transcript showing work through the first semester of the senior year as soon as possible after the semester has ended and a supplementary transcript showing graduation at the close of school.

► **GED:** Applicants who have a high school equivalency certificate should request that a copy be sent directly to Wake Tech.

► **College:** Official transcripts of previous education in other colleges and universities should be submitted to Wake Tech. Applicants presenting transcripts of **completed** associate degrees, or higher, will **not** need to submit high school transcripts, **except** in Health Sciences curricula where ALL transcripts are required.

Placement Inventories
The ASSET or the COMPASS placement examinations are administered to each applicant pursuing a degree, diploma, or certain certificate programs to determine the individual’s skill level and readiness. Placement inventory results will be used to determine the need, if any, for developmental instruction. Applicants who have taken the SAT or ACT should have their scores sent to the College. Acceptable SAT or ACT scores may eliminate the need for placement testing. SAT or ACT math scores will not be used to waive the math placement test for applicants to the Associate in Science program. Also, one transferable course (grade of “C” or better) each in college-level mathematics and English will exempt the applicant from placement testing, except in competitive admission programs. (See Limited Enrollment Programs.)

Applicants who have been notified that they need placement testing may make an appointment online at [http://testingcenter.waketech.edu](http://testingcenter.waketech.edu) or call (919) 866-5461 to schedule an appointment. In preparation to perform their best on this computerized placement test, applicants should:
1. Read through “Chart Your Success on the COMPASS” available at the Wake Tech Library or purchased as a study guide.
2. Obtain a referral form from a counselor for placement test preparation at our Individualized Learning Center (ILC) prior to testing.

**CURRICULUM FRENCH AND SPANISH PLACEMENT EXAMS**

The following students MUST take the Wake Tech PLACEMENT EXAM to determine at what level they should continue their foreign language studies:

- Native speakers. (Students who received their primary literacy education in French or Spanish.)
- Heritage learners. (Students who have not received their primary literacy education in French or Spanish. Language skills acquired vary by household. May not have reading and writing skills in that second language.)
- Students who have earned a grade of B (87) or better on each of the THREE years of high school study of the same language.
- Students who have lived or have studied in a Spanish or French speaking country.
- Incoming transfer students returning to the study of French or Spanish begun in high school, but not previously pursued at the college level.

**Placement Requirements**

**Associate Degree Programs**

- High school diploma or equivalent.
- Sufficient mathematics and science to meet specific program requirements.
- Educational aptitude as determined by standard tests. Placement inventories will aid in student selection, placement, and guidance.
- Medical examination for certain Health Sciences programs.

**Diploma Programs**

- High school diploma or equivalent.
- Educational aptitude as determined by standard tests. Placement inventories will aid in student selection placement and guidance.
- Medical examination for certain Health Sciences programs.

**Certificate Programs**

- Demonstrated ability to benefit from the training.
- Some programs have additional minimum requirements (contact the admissions counselor at 919-662-3500 for specific information).
- Medical examination for certain Health Sciences programs.

In some instances, licensing or employment within certain fields may be limited by an individual’s prior criminal record. Prospective students should check with an admission counselor or appropriate academic department head to determine if such sanctions apply to them.

**Limited Enrollment Programs**

There are some limited enrollment programs that have more applicants than available space. Applicants must meet additional requirements, including sufficient math and science courses, clinical site visits, attendance at mandatory orientation, CPR certification, physical (medical) examination, etc. Some programs require the applicant to remove any academic deficiencies before consideration for the program. Applicants may also be ranked according to the published criteria for placement into one of the competitive programs. This ranking may include performance in specific course work at the postsecondary level, related work experience, and/or specific professional certifications. The requirements for placement in specific limited enrollment programs are published in each program’s Student Policy Handbook.

Applicants to limited enrollment programs should contact the Admissions Office. Many limited enrollment programs have different application deadlines and requirements that are subject to change.

**Limited enrollment programs include:**

- Air Conditioning, Heating, and Refrigeration Technology
- Associate Degree Nursing
- Automotive Systems Technology
- Basic Law Enforcement Training
- Computed Tomography and Magnetic Resonance Imaging Technology
- Dental Assisting
- Dental Hygiene
- Emergency Medical Science
- Medical Assisting
- Medical Laboratory Technology
- Phlebotomy
- Radiography
- Surgical Technology

**Personal Interview** - A personal interview is beneficial to both the applicant and to the Admissions Counselor. The applicant has an opportunity to ask questions about the College and its programs while the Admissions Counselor assists in evaluating the applicant’s interest in, and capability to pursue, the program of study for which he or she applied.

All correspondence concerning enrollment and placement should be addressed to the Admissions Office.
Registration

Students who are admitted to a curriculum degree, diploma, or certificate program will receive course planning and registration information from either an admissions counselor or an Advising Center advisor. Based on the student’s program of study, course planning and registration information after the initial enrollment is obtained from either a faculty advisor or Advising Center advisor.

Special students (those who have not declared a program of study) are not assigned a faculty advisor, Advising Center advisor, or admissions counselor. However, special students may seek course planning from the Admissions and Counseling Office as needed.

Registration is conducted online (on the web) via WebAdvisor. WebAdvisor is accessed through our student portal Eagle Cruiser by typing http://eagle.waketech.edu in your web browser URL address block. WebAdvisor requires that your computer have cookies enabled. After Eagle Cruiser has loaded, select the WebAdvisor tab at the top of the page. Click log in, if you are a current student. Then select Express Registration under the Registration heading. More detailed information regarding the use of WebAdvisor can be accessed by clicking on the How to Use WebAdvisor link at the top of the WebAdvisor page.

The ability to access the registration system may be blocked if the student has any type of financial or academic hold. In some cases, special permission may be required by the curriculum deans to register for a specific class. Visit Wake Tech’s website (www.waketech.edu) or WebAdvisor (http://eagle.waktech.edu) for more information on courses being offered, registration procedures, and other information you need.

Registrations will be deleted if payment is not received by the payment deadline listed for the registration period in which you registered. Students are responsible for paying the amount due for all scheduled classes, by the published due date. Wake Tech no long mails invoices. The amount due and date due can be obtained from Web Advisor. Students may pay tuition and fees by credit card at the time of registration and avoid waiting in line at the cashier window. Students are strongly encouraged to use this option.

Students are notified through Eagle Cruiser and email of upcoming registration periods. The student is responsible for scheduling an appointment with his advisor.

Course Load

The maximum course load is 20 credit hours per term. To carry more than the maximum load, students pursuing a degree, diploma, or certificate must obtain an electronic override permission from the dean or the dean’s designee. Special studies students must obtain the approval of the Registrar, Associate or Assistant Registrars.

Registration Changes

Adds

A student may change his registration by adding a course through the last day to add, as published in the academic calendar. A student who finds it necessary to add a course should confer with his advisor. Adds may be completed via WebAdvisor until the end of the published registration period. Adds after the registration systems close must be submitted in person to the Enrollment and Records Services Division on a completed Request for Registration Override form signed by the dean.

Drops

A student may change his registration by dropping a course prior to the 10-percent (subject to change) date of the semester/term. A student who finds it necessary to drop a course should confer with his advisor. Drops may be completed via WebAdvisor until the end of the published registration period.

Drops after the 10-percent date of the semester/term and on or prior to the 60-percent point of terms are considered withdrawals and must be submitted to the Enrollment and Records Services Division on a Student Course Withdrawal form. A drop during this time frame will result in a grade of "W."

A student who drops a class is advised that this may affect his financial aid. Financial aid students may contact the Financial Aid office to determine whether funds will be affected.

Audits

Registration (including tuition charges) for courses to be audited is the same as for courses to be taken for credit. Audit courses carry no credit hours and earn no grade points. The student must submit a Request to Audit form to the Enrollment and Records Services Division no later than the last day to add. Departmental approval to audit is not required to audit at this point.

Students who would like to be considered for audit after the last day to add must obtain the signature of the instructor and dean or dean’s designee on the Request to Audit form before submitting it to the Enrollment and Records Services Division. Audit requests will not be accepted after the mid-point of the term.

Student Classification

A full-time student is a person enrolled for twelve or more semester hours of credit in the fall or spring semesters.

A part-time student is a person enrolled for less than twelve semester hours of credit pursuing a degree, diploma, or certificate program in the fall or spring semesters.

A special student is any student who is enrolled in a credit course, but is not working toward a degree, diploma, or certificate.

For financial aid purposes only, full-time status is 12 hours credit or more each semester.
Tuition
Tuition is established by the State Board of Community Colleges and is subject to change without notice.

**North Carolina Students**
- 16 credit hours or more: $672.00 per term
- Less than 16 credit hours: $42.00 per credit hour

**Out-of-State Students**
- 16 credit hours or more: $3,732.80 per term
- Less than 16 credit hours: $233.30 per credit hour

Fees
Fees are established by the Trustees of the College and are subject to change without notice.

**Student Administration Fee**
- $10.00 per term

**Campus Access Fee** – for registrations at Main, Health, Western Wake, or North Campuses.
- $5.00 per term

**Computer Use/Technology Fee**
- $1.00 per credit hour per term ($16.00 maximum)

**Professional Liability Insurance**
- Health Sciences Students: $6.00 per term

**Graduation Fee**
- Diploma/Degree Student: $35.00
  - Graduation fee includes:
    - 4 Graduation Announcements
    - Purchase of Cap and Gown
    - Purchase of Diploma or Degree

**Official Transcript Fee**
- Per request: $5.00 each

**Facility Fee**
A Facility Fee of $25 per class will be charged to students attending classes at community schools locations. Fees will be collected by Wake Technical Community College at time of registration. Community school fees are established by the Wake County Public School System and are subject to change without notice.

**Textbooks** are purchased by the student as they are needed. Costs of textbooks vary, depending upon the curriculum in which the student is enrolled.

Effective July 1, 2007
Attendance Policy
Absences from class are a serious deterrent to good scholarship. The College, therefore, stresses regular class attendance, but recognizes that students should have an opportunity to develop personal responsibility and should have some discretion in attendance to meet the demands imposed by other responsibilities.

Students anticipating absences should notify their instructor in advance. If prior notification is not possible, the student should contact the instructor immediately upon returning to the College to determine the next course of action.

Students are expected to be in attendance at least 90 percent of all scheduled class hours. In the event that a student's absences in a class exceed 10 percent and the absences are not justified to the satisfaction of the instructor, the instructor will submit Student Course Withdrawal Form to the Financial Aid Office to document the last date of attendance. The Financial Aid Office will forward the form to the Enrollment and Records Services Division for appropriate recording.

Student Course Withdrawals received for students with a last day of attendance prior to or on the 60-percent point of the term will result in a grade of "W." A grade of "WF" indicates that the student was failing at the time of withdrawal and will count the same as a "W" grade in the grade-point average calculation.

Student Course Withdrawals received for students with a last day of attendance after the 60-percent point of the term will result in a grade of "WF" or "WP" as indicated by the faculty. A grade of "WF" indicates that the student was failing at the time of withdrawal and will count the same as an "F" grade in the grade-point average calculation. A grade of "WP" indicates that the student was passing at the time of withdrawal and will count the same as a "W" grade in the grade-point average calculation.

Withdrawal Policy
A student who finds it necessary to withdraw from a course(s) or the College must complete a Student Course Withdrawal Form. The form must be presented to the instructor of each course from which the student is withdrawing. The instructor must note the student’s last date of attendance on the form. The student must also obtain signatures of Financial Aid staff or Veterans’ Affairs staff if receiving financial aid or veterans’ benefits. The student should then submit the completed form to the Registration and Student Records Services Division for grade processing.

When the student’s last date of attendance is on, or prior to, the 60-percent point of the term, the student will receive a grade of "W." A grade of "W" does not affect the grade-point average. Withdrawal forms should be submitted to Enrollment and Records Service Division within two weeks after the last date of attendance instead of being held until the end of the semester.

When the Withdrawal Form is submitted after the 60-percent point of the term, the student will receive a grade of "WF" or "WP" as indicated by the course instructor. A grade of "WF" indicates that the student was failing at the time of the withdrawal and will count the same as an "F" grade in the grade-point average calculation. A grade of "WP" indicates that the student was passing at the time of the withdrawal and will count the same as a "W" grade in the grade-point average calculation.

Students enrolled in courses offered at times other than the standard sixteen-week semester and the regular summer term should consult the Curriculum Education Credit Class Schedules booklet to determine the last day to withdraw and receive a grade of "W."

Refund Policy
Curriculum Classes
Refunds are processed under the North Carolina Community College System (state) refund policy.

Tuition refunds are automatically processed based on deadlines and drop dates and are mailed to the student address on file in the College’s records. Therefore, it is very important that students submit address changes to the Enrollment and Records Services Division as soon as they occur.

Refund checks are only written after the 10-percent date in the term. Checks are mailed from the Accounting Office within four (4) weeks after the 10-percent date. This date is published in all class schedules and registration information each term. All refunds are paid by check.

Tuition
Tuition is charged on a per-credit-hour basis up to a maximum of 16 credit hours per term. There is no additional tuition charge for registration in excess of maximum credit hours. Students will be eligible for refunds when course drops or withdrawals result in enrollment for less than maximum credit hours and meet the applicable conditions described below.

Regular-schedule classes that begin the first week (seven calendar days) of the semester:
1. A 100-percent refund shall be made if the student drops the class prior to the first day of the academic semester as published on the College calendar.
2. A 75-percent refund shall be made if the student drops the class on or after the first day of the semester and prior to or on the official 10-percent point of the semester, as published in the College calendar.

Classes that begin at times other than the first week (seven calendar days) of the term:
1. A 100-percent refund shall be made if the student drops the class prior to the first class meeting.
2. A 75-percent refund shall be made if the student drops the class prior to or on the 10-percent point of the class.
Cancelled classes:
A 100-percent refund shall be made if the class in which the student is officially registered is cancelled by the College.

Registration Fee – Self-Supporting Classes
The registration fee for self-supporting classes is charged separately from (“in addition to”) the tuition charges. Therefore, refunds for these classes are also calculated separately. Otherwise, the policies and deadlines listed prior also apply to self-supporting classes.

To be eligible for a refund a student must officially drop the class, using WebAdvisor or via the Registration Change Request form if the registration system has closed for the term, by the deadlines indicated.

Fees
When the student withdraws entirely and the tuition refund is approved by the College as set forth above, student administration, community schools, and graduation fees will be refunded in total. Refund will be made for vehicle registration if the registration decal is returned with a written request for a refund of the campus access fee.

Death of a Student
In the event of a student’s death, all tuition and fees the student had paid for that term may be refunded to the estate of the deceased.

Books
Books will be accepted for full refund when the student withdraws from the College or drops a class on or before the 10-percent point in the semester, provided the books have not been marked in or otherwise defaced. Requests for book refunds are to be presented with the sales receipt by the student to the Bookstore Manager, who is authorized to accept or reject the request for refund.

Readmissions
Any student who withdraws from the College for reasons other than academic or administrative can be considered for readmission at any subsequent semester. Applicants who have not attended for one year or more must submit a new application. A student who has been dismissed for academic or administrative reasons for one semester or more may re-enroll upon approval by the Dean of Students after a review of the student’s situation with the division dean. The decision as to whether a former student will be allowed readmission to the College and any conditions or restrictions attached to such readmission are discretionary on the part of the College.

Health Sciences curricula may have readmissions policies that are different from the general policies of the College. These policies will be given to each student enrolled in a Health Sciences curricula in the Student Policy Handbook for each program.

Change of Program
Any student desiring to change from one curriculum to another must initiate the change through the Office of Admissions. Students receiving VA educational benefits must also file a change of program request (VA form 22-1995) with the College VA certifying official (Registrar).

Grading Policy
Students are graded according to the following grade-point system in all courses, except Pre-Curriculum.

Grade Points

<table>
<thead>
<tr>
<th>Grade</th>
<th>Per Credit</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>Very Good</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>Poor</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Failing</td>
</tr>
<tr>
<td>W</td>
<td>0</td>
<td>Withdrawal (prior to 60%)</td>
</tr>
<tr>
<td>WF</td>
<td>0</td>
<td>Withdrawal – Failing (after 60%)</td>
</tr>
<tr>
<td>WP</td>
<td>0</td>
<td>Withdrawal – Passing (after 60%)</td>
</tr>
</tbody>
</table>

Students in Pre-Curriculum courses are graded according to the following system.

Grade
A
B
C
F
W
WF
WP

Explanation
Excellent
Very Good
Satisfactory
Failing
Withdrawal (prior to 60%)
Withdrawal – Failing (after 60%)
Withdrawal – Passing (after 60%)

Pre-Curriculum courses do not earn grade points.

Students in Real Estate Fundamentals (RLS 112) are graded according to the following system. The North Carolina Real Estate Commission requires a higher minimum passing score than Wake Tech.

Grade
A
B
F
W
WF
WP

Per Credit
4
3
0
0
0
0

Explanation
90 – 100
80 - 89
Below 80
Withdrawal (prior to 60%)
Withdrawal – Failing (after 60%)
Withdrawal – Passing (after 60%)
The following grades will not be used in computing the grade-point average.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>Audit</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete (Incomplete)</td>
</tr>
<tr>
<td>IP</td>
<td>In Progress (Pre-Curriculum and Multi-entry/multi-exit classes only)</td>
</tr>
<tr>
<td>NA</td>
<td>Never Attended</td>
</tr>
<tr>
<td>P</td>
<td>Pass (Cooperative Education Only)</td>
</tr>
<tr>
<td>W</td>
<td>Withdraw</td>
</tr>
<tr>
<td>WP</td>
<td>Withdraw Passing (after 60%)</td>
</tr>
<tr>
<td>T</td>
<td>Transfer Credit</td>
</tr>
<tr>
<td>X</td>
<td>Credit by Examination</td>
</tr>
</tbody>
</table>

A grade of Incomplete (I) will be given only when circumstances justify additional time for the completion of a course. An Incomplete must be removed by the end of the fifth full academic week of the term immediately following that in which the Incomplete was incurred. If it is not removed by this date, the Incomplete will be recorded as an “F” in the student’s permanent record.

The grade awarded for participation in Cooperative Education will be either “P” (Pass) or “F” (Fail). These grades are not used in computing the grade-point average. Grades are available online approximately two business days after the deadline for faculty to submit final grades. To view grades, access WebAdvisor. Click on Current Students and select Grades under Academic Profile. Grades are mailed at the end of the semester only to students who complete a Request for Official Grade Mailing. Information regarding grade appeals is listed within the Student Rights and Responsibility section.

Example of Grade-Point Average Computation

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hour Credit</th>
<th>Grade Received</th>
<th>Per Semester Hour</th>
<th>Grad Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Physics</td>
<td>3</td>
<td>D</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>F</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Psychology</td>
<td>3</td>
<td>C</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td></td>
<td></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Thirty grade points divided by 17 hours attempted equals a 1.76 grade-point average for work attempted in this example. A GPA of 2.0 constitutes a “C” average. Hours attempted and grade points earned in previous terms should be included in the above procedures to determine the cumulative grade-point average.

Grade Posting by Faculty

The Family Policy Compliance Office (FPCO), which is responsible for the administration of Family Educational Rights and Privacy Act (FERPA) at schools and colleges, has issued a technical letter stating that grades may not be posted by Social Security Number (SSN), or part thereof, without the written consent of the student.

Wake Tech faculty are neither required nor are they prohibited from posting grades. However, they may exercise this option only with the student written consent to post grades. A FERPA Consent to Post Grades form should be distributed by the instructor of each class for which he or she will be posting grades. Only the grades of those students who give consent should be posted, and even with consent, the full student social security number should never be used. The complete form should be given to the instructor’s dean with their final grade report at the end of the term for filing for a period of no less than 3 years. After that time they may be destroyed if no litigation, claim, audit, or other official action involving the records has been initiated. If official action has been initiated, destroy grade report in office after completion of action and resolution of issues involved. (Item 45550, Records Retention and Disposition Schedule Amendment, as amended August 1, 2002)

For faculty who utilize Blackboard technology, written consent is not required to post a student’s grade to the section of the student site where only the student can access via a secure password (i.e. individual grade books). However, faculty may not post a listing of grades to their Blackboard site where all class members have access because that would be disclosing personally identifiable information without student consent.

Faculty may not send individual grades to students via email because the FPCO has ruled that e-mail messages are not secure.
This directive includes even those emails that generate from the student to the instructor. This may change once the college starts issuing college email addresses to students with the full implementation of Colleague/Web Advisor/Campus Cruiser option because students will log into the portal with a login ID and password. The FPCO considers the combination of these two elements (Blackboard grade book or College email address) to be more secure and acceptable.

Grade Forgiveness
A student who has not been enrolled in curriculum courses in the college for 60 consecutive months (5 years) may submit a Grade Forgiveness request to Enrollment and Records Services Division. Under this policy, the student may request that his or her previous grades of “WF” or “F” not be used in calculating the cumulative grade point average. However, the grades will remain on the transcript, but they are not included in the GPA. This may not have any bearing on how another institution calculates the student’s GPA.

Prior to re-evaluation, the student must be readmitted to the college, register for courses, and complete at least 12 credit hours of course work, at the 100 level or above, with a minimum quality point average of 2.0. A student may only request grade forgiveness once in his or her academic career at the college. Re-evaluation will be processed weekly, and the student will be notified of the results in writing to the student’s address on file.

Satisfactory Academic Progress
At the end of each academic term, each student’s cumulative and semester grade-point averages are computed. Students who fall below the required cumulative grade-point average, based on credit hours attempted, will be placed on academic probation. Students will be notified of their academic probation status by letter from the Vice President of Curriculum Education Services. Students on academic probation are prohibited from registering for the next term unless:

1. The student obtains a Permit to Register/Plan of Action form signed by his/her advisor, or
2. The student achieves the minimum cumulative grade-point average, based on credit hours attempted.

<table>
<thead>
<tr>
<th>Credit Hours Attempted/Degree</th>
<th>Required Cumulative GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 40</td>
<td>1.60</td>
</tr>
<tr>
<td>41 – 50</td>
<td>1.80</td>
</tr>
<tr>
<td>51 or more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours Attempted/Diploma, Certificate</th>
<th>Required Cumulative GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 20</td>
<td>1.60</td>
</tr>
<tr>
<td>21 – 30</td>
<td>1.80</td>
</tr>
<tr>
<td>31 or more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Satisfactory Progress in Health Sciences Curricula
In the Health Sciences curricula there are certain policies relating to student progress that are different from the general policies of the College. These policies will be given to each student in a health-related curriculum.

Satisfactory Progress in Pre-Curriculum Courses
The objective of the Pre-Curriculum program is to assist students in obtaining those academic skills necessary to succeed in a curriculum program. Therefore, a student taking required Pre-Curriculum courses must earn a grade of “C” or better in order to progress to the curriculum program or to the next Pre-Curriculum course level. A grade of “F” requires the student to repeat the course.

President’s List
The College publishes a “President’s List” at the end of each academic term. The list is composed of students who have achieved a grade-point average of 3.50 at the end of that particular term based on a minimum of 12 credit hours attempted in the Fall and Spring semesters; a minimum of 8 credit hours must be attempted for the Summer term.

Dean’s List
The College publishes a “Dean’s List” at the end of each academic term. The list is composed of students who have achieved a minimum grade-point average of 4.0 at the end of that particular term based on a minimum of 12 credit hours attempted in the Fall and Spring semesters; a minimum of 8 credit hours must be attempted for the Summer term.

President’s Award for Excellence
The President’s Award for Excellence is the top academic award presented by Wake Technical Community College. This award recognizes students who excel in academic achievement, attitude, attendance, and motivation.

Seven students (one from each academic division) are selected to receive the President’s Award for Excellence during each calendar year. Division deans and instructors select award recipients.

Each recipient receives a personal plaque of commendation, presented by the College President. Recipients’ names are engraved on a trophy that is permanently displayed in the College’s trophy case.

Who’s Who Among Students in American Junior Colleges
Each spring, second-year students are nominated for Who’s Who Among Students in American Junior Colleges based upon the student’s scholarship ability; participation and leadership in academic and extracurricular activities; citizenship and service to the College; and potential for future achievement.
Graduation Requirements
In order to be eligible for graduation, a student must complete all prescribed courses for the curriculum in which he/she is enrolled. Students must have a cumulative grade-point average (GPA) of 2.0 in their program of study. Grade-point averages are calculated by dividing the total number of grade points earned by the total number of credit hours attempted. Courses used in this calculation are those completed at Wake Technical Community College that are listed in the student’s curriculum outline as minimum requirements and any additional courses approved by the appropriate academic dean.

Students must complete a minimum of 25 percent of hours required for a degree, diploma, or certificate in residence at Wake Technical Community College. Final course work required for a degree, diploma, or certificate in residence have any outstanding indebtedness to the College.

In order to graduate, each student must fulfill all financial obligations to the College, including graduation fees. Graduation fees are to be paid at the time of registration for the term in which graduation requirements will be completed.

Note: Students pursuing a degree or diploma are not normally eligible to receive a certificate in the same program. Requests for exceptions will be considered when a specific and immediate need exists for purposes of employment or promotion. Students pursuing a degree or diploma who find it necessary to scale down their objective to a certificate should contact the Enrollment and Records Services Division to determine if they may be eligible for a certificate.

Graduation
Graduation exercises are held at the end of summer term for all students who have completed degree or diploma requirements since the last graduation. Prospective graduates must request a graduation clearance by submitting an “Application for Graduation” form to the Enrollment and Records Services Division. The deadline for submitting this application is the last day of registration of the term in which the student will complete the requirements for the degree, diploma, or certificate.

Persistence toward Graduation
Information concerning the rate of persistence toward graduation for Wake Technical Community College may be obtained from a member of the counseling staff.

Transcripts of Academic Record
Transcripts will be issued upon written authorization from the student.

Official copies of transcripts are available at a cost of $5.00 per copy. Student copies of transcripts are available at no charge. However, transcript requests will not be processed, under any circumstances, for students who have any outstanding indebtedness to the College.

Transcript requests may be made in person to Enrollment and Records Services Division, mailed to the division or online via WebAdvisor. The form may be downloaded from the College website for mail or fax requests. One copy of a transcript will be provided per request. Transcript requests are normally processed daily. Transcripts requested by 12 noon may be picked up after 3:30 p.m. on the same day unless otherwise posted. Transcripts to be mailed are dispatched the next day. Transcripts requested after noon will normally be ready after 3:30 p.m. the next day. A photo I.D., such as a driver's license, is required for pickup of transcripts.

Fax or Web Requests for Transcripts
Students may request transcripts by fax or web for pickup or mail. The fee structure described in Transcripts of Academic Record applies to transcripts requested by fax and web.

The processing of faxed or web requested transcripts will conform to the time frame described in Transcripts of Academic Record. A Transcript Request Form can be downloaded from the College’s website www.waketech.edu.

Course Repetition
A student may repeat any course twice; each attempt will be recorded on the student’s official academic record. The best grade earned in all the attempts is calculated in the GPA. The dean responsible for the supervision of the course being taken may approve exceptions to this policy.

Change of Name, Address
Changes of name, address, telephone numbers, or e-mail must be reported, in writing, to the Enrollment and Records Services Division immediately upon change.

Annual Notice to Students of Their Rights under The Family Educational Rights and Privacy Act of 1974
Annually, Wake Technical Community College informs students through the publication of the Student Handbook of the Family Educational Rights and Privacy Act of 1974, as amended. This act, with which the College intends to comply fully, protects the privacy of educational records, establishes the rights of students to inspect and review their educational records, and provides guidelines for the correction of inaccurate or misleading data through informal and formal hearings. To the extent consistent with the Act, students who seek the correction of inaccurate or misleading data or who otherwise have complaints should follow the grievance procedure contained in this Handbook. Students also have the right to file complaints with the Family Educational Rights and Privacy Act Office concerning alleged failures by the College to comply with the Act.
Wake Technical Community College’s policy establishing its intent to comply with the Act is published in the College catalog. Procedures implementing the provisions of the Act are published in the Student Handbook. Questions concerning the Act and Wake Technical Community College’s policy should be referred to the Enrollment and Records Services Division.

Care of Records: Policies and Procedures
Wake Technical Community College, in the execution of its responsibilities to students, maintains accurate and confidential student records. The College staff recognizes the rights of students to have access to their educational and personal records in accordance with College policy and the Family Educational Rights and Privacy Act of 1974.

Definition of Term “Educational Records”
These regulations as defined under the provisions of the Act include files, documents, and other materials that contain information directly related to students and that are maintained by an educational institution or an authority on behalf of the institution.

The term “educational record,” under the provision of the law, does not include the following:
1. Records of institutional, supervisory, and administrative personnel that are in the sole possession of the maker and that are not accessible or revealed to any other person except a substitute for the above named personnel.
2. Records and documents of security officers of the institution that are kept apart from such educational records.
3. Records on students that are made or maintained by a physician, psychiatrist, psychologist, counselor, or other recognized professionals or paraprofessionals acting in their official capacity and that are made, maintained, or used only in connection with a provision for treatment of the student and not available to anyone other than persons providing such treatment, except that such records can be personally reviewed by a physician or other appropriate professional of a given student’s choice.
4. Financial records of the parents of the students or other information therein contained.
5. Confidential recommendations if a given student has signed a waiver of the student’s rights of access, provided that such a waiver may not be required of the student.

Control Provisions on Student Records and Student Information
The official student file shall not be sent outside the Admissions Office, Enrollment and Records Services Division, Financial Aid Office, Placement Office, or Cooperative Education Office except in circumstances specifically authorized in writing by the President or appropriate vice president.

Students have the right to inspect their own records covered by the Act whether recorded in hard copy, electronic data processing media, or microfilm. The Registrar has been designated by the College to coordinate the Inspection and Review Procedures for Student Education Records. Requests to review records must be made in writing, specifying the item or items of interest. Records will be made available for review within forty-five (45) days. Upon inspection, students are entitled to an explanation of any information contained in the record.

Students may have copies of their records except:
1. When a financial “hold” exists.
2. When the copy requested is a transcript of an original or source document that exists elsewhere.

A fee of $.50 per page will be charged for copies of records other than the student’s transcript(s) of academic records.

Transcripts and other information, except as provided by the Act, are released only with the written consent of the student. Such written consent must:
1. Specify the records or the data to be released, to whom it is to be released, and the reason(s) for release.
2. Be signed and dated by the student.

Disclosure of Information without the Student’s Consent
Educational records must be disclosed without written consent of students to properly identified and authorized representatives of the Comptroller General of the United States; the Secretary of Education; state educational officials; and the Department of Veterans Affairs, for audit and evaluation of federal and state-supported programs, or in connection with enforcement of the federal or legal requirements that relate to such programs. Routine requests for student data from agencies such as the Department of Education, OEO, research agencies, and state-reporting agencies may be honored without prior approval of the student only in formats where students are not identified.

Confidential information requested by other than federal or state agencies as specified above will be released only under the following conditions:
1. An official order of a court of competent jurisdiction.
2. Subpoena. (Students will be notified immediately by registered mail that their records are being subpoenaed.)
3. To parents of students upon the parent providing a certified copy of the parent's most recent Federal Income Tax Form in which the student is identified as a dependent.

Requests for confidential information will be honored without prior consent of the student in connection with an emergency, if the knowledge of such information by appropriate persons is necessary (in view of a responsible person) to protect the health or safety of the student or other persons.
Faculty and administrative officers of the College who demonstrate a legitimate educational need will be permitted to look at the official student file for a particular student.

The College may make the following “Directory Information” available to the public unless the student notifies the Registrar in writing by the end of the first week of the term that such information is not to be made available.

1. Student's name
2. Date of birth
3. Email address
4. Major field of study or program
5. Dates of enrollment
6. Degrees, Diplomas, or Certificates received
7. College honors

Any release of student information for public use or use by the media except that specified above must have prior written approval by the student(s) involved.

Record of Who Has Access
A record of access to the official student file will be maintained within the file itself. This record will show the name, address, date, and purpose of the person who has been granted access. All persons who have access will be included in this record except those institutional employees who, because of the nature of their duties, have been granted access.

Student Financial Aid

Financial Aid Mission Statement
The Wake Tech Financial Aid program exists to ensure that no qualified student will be denied the opportunity to continue his or her education because of economic disadvantages. Through a program of scholarships, grants, work-study, and loans, students enrolled at the College are able to supplement their own resources and those of their families to complete a course of study.

Available Financial Aid Programs

Grants
A grant is a gift that does not have to be repaid.

Federal PELL Grants
PELL is an entitlement program, which means that all students who are eligible will receive PELL Grant awards. Applicants must be U.S. citizens or eligible non-citizens carrying at least a half-time (six credit-hours) course load. The amount of the grant is determined by the Department of Education.

Student's Rights to Question Contents of Official Files
A student has the right to view his official records maintained by the College. Furthermore, a student may question any inaccurate or misleading information and request correction or deletion of that data from the official files.

All such requests will be sent to the Registrar and will become a part of that student's file.

All requests for correction of a student file will be acted upon within 45 days of receipt of that request. If the custodian can verify that such data is, in fact, in error, appropriate corrections will be made and the student will be notified in writing when the correction has been completed. In the event the Registrar fails to resolve the student’s requests to the student’s satisfaction, the student may prosecute the grievance further through compliance with the grievance procedure contained in this Handbook. If the outcome of the grievance is in agreement with the student’s request, the student will be permitted to review his file to verify that the change has been made correctly. If the student’s request is denied, he will be permitted to append a statement to the record in question, showing the basis for his disagreement with the denial. Such appendages will become a permanent part of the record.

Academic Competitiveness Grants
To qualify, a student must be PELL-eligible, a U.S. citizen, and enrolled full-time in a degree-granting program. Academic Competitiveness Grants will be given to first- and second-year students who have taken a rigorous high school curriculum and have not been enrolled previously in an undergraduate program. First-year grant recipients must have graduated high school after January 1, 2006, and second-year grant recipients graduate after January 1, 2005. Second-year grant recipients must also retain, at least a 3.0 overall GPA.

Federal Supplemental Educational Opportunity Grants (FSEOG)
Federal SEOG awards range from a minimum of $100 to a maximum of $4,000 a year. This federal program does not require employment or repayment. Due to limited funding, the maximum award at Wake Tech is $800 per academic year.
Federal Work Study Program
The purpose of this program is to extend part-time employment opportunities to students, particularly those from low-income families, who are in need of financial assistance to pursue a course of study. Students generally work 10-15 hours per week. Awards are based on available funding. Complete the Free Application for Federal Student Aid (FAFSA).

Be enrolled in an eligible program of study (diploma or associate degree program, U.S. and non-eligible citizens must be enrolled at least half-time. International students are required to be enrolled full-time during fall and spring semesters and at least half-time during Summer term.
- Earn and maintain a cumulative grade-point-average of at least 2.0
- Meet all satisfactory academic progress guidelines for federal student aid.

North Carolina Community College Grant Program
The North Carolina Community College Grant is a state grant program available to the neediest students whose (a) Federal Pell Grants are less than the "required educational expenses" and (b) estimated income tax liability (according to federal guidelines) is too low for the family to be eligible for the Federal Tax Credit. Students must complete the Free Application for Federal Student Aid to be considered for this grant.

North Carolina Student Incentive Grant Program (NCSIG)
The North Carolina Student Incentive Grant is a state and federal grant program available to exceptionally needy students. It is administered jointly by the College Foundation, Inc., and the College Financial Aid Officer. Students must be North Carolina residents and must apply by March 15 of each year for the upcoming fall semester.

Loans
Federal Family Educational Loan Programs (FFELP)
- Federal Subsidized Stafford Loan Program - To qualify for these loans, students must demonstrate financial need as a result of filing an FAFSA. Eligibility for this loan is determined by the institution, but funds are actually provided and repayments are collected by outside lenders who participate in this program. The amount that may be borrowed per year is set by the federal government and ranges from $2,625 to $5,500 for undergraduates, depending on the student's grade level. The interest on this loan is paid by the government while the student is enrolled on at least a half-time basis. The student becomes responsible for the interest and principal payments six months after graduating or dropping below half-time enrollment.
- Federal Unsubsidized Stafford Loan Program - The only difference between this loan and a Subsidized Stafford Loan is that the Unsubsidized Stafford Loan is not need-based, and students are charged interest on these loans from the date of first receipt of loan funds. Although students must complete an FAFSA to qualify for an Unsubsidized Stafford Loan, eligibility is not determined based on need but on the cost of attending minus other expected financial aid. Annual maximums, interest rates, and repayment provisions are the same as Subsidized Stafford Loans. Applications are available in the Office of Scholarships and Financial Aid, or may be obtained from several participating lenders. Repayment starts as soon as funds are disbursed.
- Federal PLUS Loan for Parents - Parents of a dependent undergraduate student may apply for a PLUS loan to help meet the student's costs of attendance not covered by other financial aid. Interest rates and repayment provisions on PLUS loans are generally more favorable than other consumer loans available for educational expenses. A FAFSA need not be completed, but parents must submit a PLUS Request form to the Financial Aid Office for certification of the student's cost of attendance as well as other anticipated financial aid. PLUS applications are available in the Financial Aid Office or may be obtained from several participating lenders. Repayment starts as soon as funds are disbursed.

Loan Program for Health, Science, and Mathematics
In an effort to encourage and provide financial assistance to North Carolinians desiring career opportunities in the health, science, and mathematics disciplines, the General Assembly makes available appropriations for loans for the instructional programs cited:

Health: Allied Health; Health Sciences

Science: Computer and Information Science, Engineering and related technologies Life Sciences and Physical Science.

Mathematics: Mathematics (General, Pure, and Applied)

North Carolina Community College Loan Program
The North Carolina Community College System Office makes allocations to each community college for short-term loans to assist students who demonstrate financial need. Each community college administers the Loan Program according to its policies and procedures. Students should:
- Present their needs to the financial aid director
- Complete an NCCC Loan Program Application

Maximum loans at Wake Technical Community College are $400 and must be repaid within 60 days from the first day of the semester.
Scholarships

Scholarships are available to students in vocational, technical, and college/university transfer programs. These scholarships are awarded annually in varying amounts by civic clubs, professional organizations, industrial groups, and hospital organizations. Although scholarships are awarded primarily upon the basis of financial need, a student applying may have to meet certain defined requirements to qualify for specific awards. Evidence of scholastic potential, achievement, and good character may be required. Applications and further information may be obtained from the Financial Aid Office.

How Do I Apply For Financial Aid?

To apply for financial aid you must complete the Free Application for Federal Student Aid (FAFSA). The application can be obtained from the WTCC Financial Aid Office or your local high school guidance counselor. The application may also be completed online at www.fafsa.ed.gov.

Financial Aid Deadlines

The table below lists the deadline dates that a Financial Aid file must be completed, as well as recommended dates that one should apply by for financial aid for a given semester:

<table>
<thead>
<tr>
<th>In order to register during:</th>
<th>You should apply for Financial Aid by:</th>
<th>Your Financial Aid file must be complete by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Registration</td>
<td>May 1</td>
<td>June 1</td>
</tr>
<tr>
<td>Spring Registration</td>
<td>October 1</td>
<td>November 1</td>
</tr>
<tr>
<td>Summer Registration</td>
<td>April 1</td>
<td>May 1</td>
</tr>
<tr>
<td>Priority Deadline to be considered for all available annual resources</td>
<td>March 15 (date received)</td>
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</tbody>
</table>

If your financial aid eligibility has not been determined or your financial aid file is not complete by the dates listed above you are responsible for payment of your tuition and fee charges and bookstore charges. Once your eligibility for financial aid has been determined you will receive an award letter that will provide information regarding disbursement of financial aid funds.

Financial Aid Payments

Grant, loan, and scholarship payments are made on a semester basis. Charges for tuition, fees, and books are allowed against Pell Grants, loans, Vocational Rehabilitation, and scholarships during registration. Refunds for each semester for Pell, loans, SEOG, and NCCG after charges are deducted, are mailed to students. Pell checks are mailed to students on the thirtieth day of the academic calendar. Student Loan checks are mailed to borrowers approximately thirty-seven days from the beginning day of the term. College Work Study payments are made on a monthly basis after a time record has been signed, approved, and processed by the Financial Aid Office.

Other Repayment Information:

If a student uses Title IV financial aid to register for a class or classes but does not attend the class (NA) and fails to drop the class, the College is required by Federal law to refund all tuition and fees to the appropriate financial aid program. If the student also charged books and non-book merchandise, for the class, the student is responsible for returning the books and the non-book merchandise to the bookstore. If the student fails to return the books and non-book merchandise, the student will be required to repay the Title IV program for those charges. Failure to do so will result in a hold being placed on your records and the overpayment will be reported to the Department of Education. If you register for class and decide not to attend it is your responsibility to cancel your registration with the Office of Enrollment and Records.

Eligibility Requirements for Federal & State Assistance

To receive Federal Title IV assistance and state assistance, students must do the following:

- demonstrate financial need
- have a high school diploma or a General Education Development (GED) certificate on file with the College;
- be enrolled at least half time (6 credit hours) in an eligible program of study;
- be a U.S. citizen or an eligible non-citizen;
- have a valid Social Security number;
- make satisfactory academic progress;
- sign a statement on the FAFSA certifying that you will use federal student aid for educational purposes only;
- sign a statement on the FAFSA certifying that you are not in default on a federal student loan and that you do not owe money back on a federal student grant;
- answer a question on the FAFSA reporting whether you have been convicted of possessing or selling illegal drugs.
- register with Selective Service, if required.
In order to receive the maximum Pell Grant, a student must be enrolled for 12 credit hours or more each semester in an eligible curriculum of study. Depending on eligibility a reduced Pell Grant can be received by students who are enrolled three-fourths time (9-11 credit hours), one-half time (6-8 credit hours), or less than half-time (1-5 credit hours). Only courses in your program of study can be included when determining your award for the semester. For example, if you are enrolled for twelve credit hours but you are taking a five credit hour course that is not part of your program of study, you will receive PELL Grant funds for seven credit hours only and not twelve credit hours although you are enrolled for twelve hours.

Refunds and Repayments

College Refund Policy—Refer to appropriate section for information concerning the College’s refund policy.

Title IV Refunds
The Title IV repayment policy applies when a student receives financial aid funds and subsequently withdraws either officially or unofficially from school prior to the 60 percent point of each semester/term. In this case, the student has received financial aid to cover educational expenses for an enrollment period; and since the student has ceased to be enrolled at least half time these funds can no longer be considered to be used for educational purposes, the student may owe a repayment to the Pell Grant, SEOG or Stafford Loan Program. Such repayment is to be determined on the basis of criteria set forth by the U.S. Secretary of Education. If you are considering withdrawing from WTCC we strongly urge you to speak to a Financial Aid Counselor to determine how withdrawing may impact you.

Vocational Rehabilitation
Vocational Rehabilitation is a public service program operated through the Division of Vocational Rehabilitation, Department of Human Resources. Vocational Rehabilitation offers several financial resources to assist individuals with disabilities. Students may be eligible for financial assistance to complete a course of study to meet individualized needs. Prospective students should contact the nearest Division of Vocational Rehabilitation Services office.

Satisfactory Academic Progress Policy for Financial Aid Recipients
Federal regulations require schools to monitor student’s academic performance to ensure that they are maintaining satisfactory academic progress and thereby progressing towards program completion. Satisfactory Academic Progress is reviewed at the end of each academic year regardless of when your enrollment begins with the exception of students that are on probation/conditional status or enrolled in a certificate or diploma program. Students on conditional status or enrolled in the certificate/diploma programs are reviewed at the end of each semester. If you fall below the minimum requirements, you will be placed on conditional status/probation for the next semester that you are enrolled. If at the end of your probationary period you have not met the minimum requirement your financial aid will be terminated for your next enrollment period.

Wake Technical Community College’s Satisfactory Academic Progress policy establishes the following criteria as minimum requirements in order to maintain financial aid eligibility:

- You must maintain the minimum grade point average for attempted credit hours:

<table>
<thead>
<tr>
<th>Credit Hours Attempted/Degree</th>
<th>Required Cumulative GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 40</td>
<td>1.60</td>
</tr>
<tr>
<td>41 – 50</td>
<td>1.80</td>
</tr>
<tr>
<td>51 or more</td>
<td>2.00</td>
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</table>

- You must successfully complete 67% of the cumulative credit hours attempted. (Divide the number of earned credit hours by the number of attempted credit hours.) Note: Pre-curriculum hours do not count in the computation of the completion rate nor the GPA.
- You must graduate within 150% of the published time required to earn a degree.

If you fail to meet the minimum requirements, you must make up the deficiency without the use of federal funds. An exception can be made for students with unusual or mitigating circumstances. An appeal must be submitted in writing, and approved by the Director of Financial Aid, to receive federal funding while making up the deficiency. Supporting documentation is required for the appeal to be considered.
Unsatisfactory Academic Progress Causes the Loss of Federal Financial Aid

This is a condensed version of the Satisfactory Academic Progress Policy for a more comprehensive copy please references your student handbook or the College Catalog. An additional copy of the policy will be included with your award letter. You are responsible for being familiar with the SAP policy.

Quantitative Measure: Completion Rate Requirement
The student must successfully earn 67% of the cumulative credit hours attempted to meet the minimum requirement; for example, if a student has 60 hours during enrollment he/she must successfully complete 40 hours (60 hrs attempted x .67%=40). Successful completion is defined as receiving a grade of A, B, C, D, or P.

Maximum Timeframe
A student's maximum time frame to complete a program is 150% of the published length of the program; for example, if 75 semester hours are required to complete a degree, the student may attempt a maximum of 113 hours before exceeding eligibility for financial aid (i.e. 75x1.5=113). A student may add up to one academic year of credit (30 semester hours) for required remedial coursework.

Major Changes: In order to ensure that students do not exceed the maximum timeframe for receiving financial aid, students who change degree programs because they have either graduated or decided to pursue another career path must have their transcripts evaluated by their advisor or academic dean. Students who repeatedly change majors will not be eligible for financial aid.

Treatment of Selected Grades:

Withdrawals: Credit hours in which a student receives a grade of “W” or “WF” are included in the number of attempted hours but do not count toward successfully completed hours; therefore, students who may have difficulty meeting the satisfactory academic progress requirements.

Incompletes: Students will not be affected by "Incompletes" at the time of the review.

Transfer Credit: Students transferring from another institution will be considered making satisfactory progress at the time of their enrollment. A student’s maximum time to receive financial aid will be reduced by the equivalent transfer of credit hours towards his/her degree.

Audits and Credit by Examination: An audit (AU) grade is not considered attempted coursework. It is not included in the grade point average or completion rate determinations. A student cannot receive financial aid for courses that he or she audits or receives credit by examination (CR).

Repeated Courses: In accordance with Wake Tech policy, a student is permitted to repeat any course twice. The last grade earned is calculated in the GPA. For financial aid purposes the previous hours attempted and earned will continue to be counted in student’s cumulative total of hours earned and attempted.

Summer Session: Credit hours attempted and earned during summer session will be included in the calculation of satisfactory academic progress, just as any other enrollment period.

Eligibility Status

Satisfactory: Satisfactory status is achieved when all criteria explained above is met.

Probation/Conditional Status: Students (who are not currently on probation) who do not have the required grade point average and/or who have not successfully completed at least 67% of their attempted credit hours will be placed on probation for the following semester. Satisfactory progress will be monitored at the end of the semester to determine if student meet the standards of progress and is eligible to continue to receive financial aid.

Termination: Students on financial aid probation/conditional status who have not successfully attained at least a cumulative 67% percent completion rate and/or earned the minimum required grade average shown listed above at the conclusion of the probation period will have their financial aid terminated.

Students who have attempted the maximum allowable credit hours for their program of study will have their financial aid terminated.

Notification of Financial Aid Termination or Probation: The Financial Aid Office will send a warning letter to any student who is placed on probation/conditional status or a termination letter to any student who is no longer eligible for financial aid. All students are responsible for knowing their status. Failure to receive a letter will not reverse the conditional status or termination notice.

Regaining Eligibility: Students who attend school (without federal financial aid) may regain financial aid eligibility by achieving a 67% completion rate and/or earning the required GPA based on hours attempted. A student may request reconsideration of eligibility for financial aid by submitting a written request to the Financial Aid Office once all requirements are met.

Students who exceed the maximum allowable time frame to complete a program of study must appeal by using a student petition and provide a graduation plan signed by their academic advisor. If the plan is considered reasonable, the student will receive financial aid on probation for one or more semesters until the degree is completed.
Petition of Waiver of Satisfactory Academic Progress Standards: Students who have been disqualified from receiving financial aid may petition the Financial Aid Office to waive the satisfactory progress requirements only where there are special circumstances present. A student may submit written documentation to the Financial Aid Office that explains unavoidable circumstances that have affected academic performance. You must be able to present supporting documentation. Circumstances may include, but are not limited to: illness of student or immediate family member; death of family member; full-time employment; and the length of time since last enrollment. If a student is allowed to continue due to a mitigating circumstance, the student will be given an additional increment of time to meet the standard requirements.

Returning students are evaluated on a continuing basis from the first enrollment at WTCC unless a mitigating circumstance is considered. Returning students who were previously enrolled under other than the current academic progress policy will be required to meet the standards of the current policy upon returning.

Complete Academic Record: In order to measure a student’s satisfactory progress toward degree, diploma, or certificate requirements, the student’s total academic record must be evaluated whether or not the student received aid for the entire time of enrollment. Additionally any courses with grades of W or WF that are granted forgiveness by WTCC must still be included in students cumulative record when determining satisfactory academic progress standards. When students complete course work for more than one major, academic progress standards must be met to receive student aid.

Appeals
Any action relative to a student’s financial aid for reasons of academic progress may be appealed. A student may appeal any action taken related to academic progress for receiving aid by submitting to the Financial Aid Office a written statement of appeal no later than 48 business hours of the time a notice of action is received by the student. If an action taken proves to be contrary to written policy used by the Financial Aid Office, or if information obtained from the Registrar’s Office proves to be incorrect, or if in any way the action proves to be unfair treatment or not in compliance with federal regulations, the student’s aid may be reinstated.

If the appeal is not resolved in the Financial Aid Office, the student may appeal/grieve the action through the College’s Grievance procedure contained in the Student Handbook.

The person designated by Wake Tech to provide financial aid information to students is the Financial Aid Director her designate. Office hours are 8 a.m. to 8 p.m., Monday – Thursday, and 8 a.m. to 5 p.m. on Friday. The telephone number is (919) 662-3500.

Student Activities

Student Government
The Student Government Association (SGA) is the campus organization that represents the interests of all Wake Tech students. Each curriculum student enrolled at Wake Technical Community College who is required to pay the Student Administration Fee shall be a member of the Wake Technical Community College Student Government Association and shall be governed by its rules and regulations.

Student Publications Policy
Publications are defined to include but are not limited to the following: newspapers, pamphlets, newsletters, brochures, flyers, books, posters, or magazines. Publications are not to be printed or distributed without official approval of the Dean of Students. Off-campus organizations are not allowed to distribute their publications on any of the College’s properties without the approval of the Dean of Students.

Approved campus organizations may post and distribute their publications if said publications have been approved by the president of the organization, the organization’s advisor, and the Dean of Students.

Publications containing profanity, language that is offensive to race, sex, or creed, grammatically incorrect statements, and misspelled words will not be approved for printing or distribution. All publications must represent the dignity, mission, and standards of the College.

Organizational publications must also be consistent with the philosophy and mission of the organization.

The College reserves the right to rescind the approval to function on campus of any organization that violates this policy. Individuals found guilty of not conforming to this Publications Policy could face disciplinary actions to include suspension from the College.
From time to time changes to published College policy will occur and will affect students. The College reserves the right to make such changes and holds students responsible for information contained therein. Announcements of changes will be published in the official publications of the College.

**Student Publications**

Wake Technical Community College sponsors a newspaper titled *The Student Voice*, which is written, edited, and managed by students with the assistance of an advisor from the English department. In addition, the Student Government Association sponsors a newsletter titled *The Eagle’s Eye*, which is published by the Office of Student Life. This publication provides information about SGA activities.

**Wake Tech Alumni Association**

The College encourages its alumni to share information about personal and professional accomplishments through a link on the College’s website. Inquiries about alumni news should be directed to the College’s department of Design & Publications. An online alumni magazine is in development.

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**Student Chapters of Professional Organizations and Clubs**

The Office of Student Life supports and encourages professional organizations and clubs at Wake Technical Community College. Professional organizations and clubs give students a unique opportunity to develop leadership skills, network with professionals in a given field of study, and to get involved. Below is a list of the charter professional organizations and clubs at Wake Tech. **Professional organizations and clubs indicated by an asterisk were active during the previous academic year.** Students interested in joining a club should go by the Office of Student Life, located in the Student Services Building.

**Guidelines for Organization Approval**

All student organizations must be approved by the College through the Office of Student Life. The following steps are the procedural guidelines in obtaining new student organization approval:

Students desiring the creation of a new organization must present their request to the Student Activities Coordinator. This presentation must include the name of the organization, the purpose, the objectives, recommendations for faculty advisor, the procedure for election of club officers, the means for the financing, the method of financing, and other related information desired by the Dean of Students’ office.

The organization must receive approval from the Coordinator of Student Activities, the Dean of Students, the Vice President of Student Services, and the President of the College before becoming an official college organization. Disapprovals can be appealed using the grievance procedure contained in this publication.

**Advertising Club***

The purpose of the Wake Tech Ad Club is to provide an opportunity for students to make connections with the professional world of Advertising and Graphic Design. The Ad Club offers association with the American Advertising Federation, and gives members real life experiences such as design jobs for other Wake Tech Clubs and non-profit organizations. Skill, information, connections, creativity, and exposure are the mission of the Wake Tech Ad Club.

**Archaeology Club***

The purpose of this club is to promote awareness about Archaeology: what it is, how it is done, and its importance in society, not just from the historical sense, but the present and future as well. Members will gain experience in teamwork and communication by engaging in hands-on archaeological field methods through participation in an ongoing offsite excavation.
Amateur Radio Society*
The Amateur Radio Society is a club established by and for students who are interested in amateur radio. The club is affiliated with the amateur radio headquarters, the ARRL (American Radio Relay League). The club radio station is WB4TOP under the trusteeship of a retired member of the faculty, a licensed ham operator. Many students have contributed to the collection of radio contact reports, or QSL’s, from all continents of the world, more than 100 countries, and all 50 states. Besides being the only community college in North Carolina with such a station, Wake Tech is also a member of the U.S. Army’s MARS network (Military Affiliate Radio System).

It is the only collegiate radio club with such membership and operates under the assigned call AAR4CWT. MARS membership extends the frequency range over which licensed students can operate and increases the enjoyment of amateur radio operation. Students who desire ham licensing may work toward this end with the assistance of the club trustee.

The Architecture Club*
The purpose of this club shall be to promote excellence in architecture education, training, and practice; foster an appreciation of architecture and related disciplines; and to organize architecture students and combine their efforts to advance the science and art of architecture.

Association of Nursing Students (ANS)*
The ANS is a professional on-campus nursing organization. The purpose of the organization is to contribute to nursing education by providing programs of professional interest and concern and to aid in the development of the student’s professional role and personal growth.

Campus Crusade for Christ*
To serve the student body, the College, and the community by implementing the teachings of Jesus Christ in various ways.

Clinical Laboratory Science Student Association (CLSSA)*
The purpose of this association is to promote the delivery of quality health care by establishing a forum to encourage high standards and maximum achievement and to raise public awareness of the depth and scope of the work performed by clinical lab personnel.

Criminal Justice Club (CJC)*
The purpose of the club is to bridge the gap between textbook learning and the actual work experience; to foster interactions between students and local criminal justice agencies; to create more hands-on activities for criminal justice students; to make available peer tutoring within the criminal justice curriculum; to create unity among criminal justice students; and to provide a greater understanding of the criminal justice system.

Culinary Club
The purpose of this club is to promote excellence in culinary education, training, and practice; foster an appreciation of culinary arts and related disciplines; and to organize culinary students and combine their efforts to advance the science and art of the culinary field.

Design and Garden Club*
The purpose of the club is for the members to enlarge their knowledge of the world of design and realize that pictures are one thing, but actually being in a space widely acknowledged by design professionals and historians to be significant to the profession of environmental design is quite another thing altogether. Also, members will have the opportunity to see interesting and unusual plants and do a bit of gardening now and then.

Drama Club
The purpose of this club is for the members to engage in applied activities utilizing their theatrical knowledge to foster interactions among the students and to help students use their talents in serving their community. Furthermore, the club allows communication between students and faculty as well as fosters professional relationships with peers at higher educational institutions and promotes relevant discussion about various career possibilities within theater arts.

Early Childhood Association*
The Early Childhood Association will support students’ growth and development by promoting campus and community involvement for the education and development of young children. As a group they will involve the department, campus, and surrounding communities in raising awareness of the importance of the early childhood profession as well as addressing policies, needs, and concerns related to children, families, and early childhood professionals.

Economics Club*
The purpose of the Economics Club is to inform members of the significance of economics and its role in the modern world; to provide opportunities for students to interact in learning situations outside of the classroom; to provide opportunities for students to participate in adult learning-oriented activities; to encourage a deeper understanding of the inter-workings of commerce and trade beyond the textbook and into real world practice; to promote intercultural relations, tolerance, and trade; and to improve students’ desire for entrance into economics-related occupations and establish intrinsic rewards for a student’s desire to develop self-motivated learning.

Gospel Choir
The purpose of this organization is to apply the spirit of leadership and clarify the understanding of student success; to enhance the talents and gifts of individuals as well as to encourage and stimulate an interest for music.
Government and Politics Club*
The purpose of the Government and Politics club is to provide a forum for campus students to learn more about the political processes at the national, state, and local levels of government; to facilitate political related interactions and discussions among students; and to provide opportunities for students to engage and interact with state and/or local government.

Heritage Club*
The purpose of the organization is to inform and discuss heritages, history, and contributions in America to be better prepared for the future; to provide opportunities for the students to interact with positive role models; to advise and work with the administration to improve student life; and to provide an opportunity for students to participate in service-oriented activities.

History Club*
The purpose of this club is for the members to engage in applied activities utilizing their historical knowledge; to foster interactions between students and historians in the workforce; to foster professional relationships with peers at higher educational institutions; to promote relevant discussion (beyond the classroom) about current discoveries and topics in the historical world; to learn about various career possibilities; and to promote the development of informed, conscientious citizens through a better understanding of the impact of history in their lives.

Human Services Student Association*
The purpose of the Human Services Student Association shall be to serve those students interested in a career in the human services field or related field. Furthermore, the purpose of this organization will be to promote and encourage advancements in the human service field; including, but not limited to, community service issues and the betterment of treatment of all persons.

Institute of Electrical and Electronic Engineers (IEEE)
The purpose of the IEEE shall be the dissemination of knowledge of the theory of practice of all aspects of electrical engineering, electronics, radio, and allied branches of engineering to related arts and sciences, as well as the furtherance of the professional development of the students.

International Friends (IF)*
The International Friends Club addresses issues important to both American and international students. Some of the purposes of this organization will be to enhance communication between international and American students; to promote good will and international understanding through sharing cultures with fellow students. The club advisors assist other departments in their work with international students as well as with American students who are pursuing fluency in other languages or have other interests. The organization provides an information network of services for international students. For more information call 866-5426.

Math Club*
The purpose of the Wake Tech Math Club is to establish a group to promote mathematics at Wake Technical Community College to all students.

Phi Beta Lambda*
Phi Beta Lambda is a professional business organization open for membership to any student regularly enrolled in a business curriculum. The organization was chartered to provide a medium for students to improve scholarship and develop qualities that will enable them to participate effectively in business, professional, and community life.

Phi Theta Kappa (PTK)*
Phi Theta Kappa, international honor society of the two-year college, offers opportunities in scholarship, leadership, services, and fellowship to fellow scholars of all ages, ethnic backgrounds, economic levels, and fields of study. To be eligible for membership, a student must have completed 24 credit hours of course work in an A.A., A.S., or A.A.S. curriculum program at Wake Technical Community College with at least a 3.7 GPA.

Philosophy Club
The purpose of this organization is to advance and clarify the understanding of philosophy and philosophical ideas. In addition, the organization will provide information about the different areas of study within the realm of philosophy as well as provide social activities for the members, which can be a base for exchange of ideas and experience. The organization will provide education about issues in philosophy and most importantly strengthen critical thinking skills through intellectual discussions.

Psychology Club*
The purpose of the Psychology Club is to advance the science of Psychology on the Wake Tech campus through educational and service opportunities. In addition, the club provides opportunities for the exchange of ideas and experiences among members.

Science Club*
The purpose of this club is for the members to engage in more applied, hands-on activities in biology; to foster interactions between students and various local agencies such as museums; to promote in-depth discussions (beyond classroom level) on relevant topics such as cancer, AIDS, etc.; to make available peer tutoring for biology courses; to learn about and discuss various career opportunities; and to provide a greater understanding and appreciation of our biological world.
**Student Leadership Academy**
This program provides an excellent opportunity for Wake Tech Student Leaders who are involved in campus clubs and organizations. The program is designed to provide all participants with skills and knowledge to become more self-affirming, self-directed, open, and empathetic in communicating with others, while obtaining the skills and strategies needed to plan and implement activities and manage groups of people. Completion of the Student Leadership Academy will strengthen leadership skills to be used in College as well as in the workplace. Training will include workshops on various topics as well as round table discussions with leaders.

**Sigma Delta Mu**
The purpose of this national honor society is to honor those who seek and attain excellence in the study of the Spanish language and in the study of literature and the culture of Spanish speaking peoples. The honor society also honors those who strive to make the Hispanic contribution to modern culture better known to the English speaking peoples. To be eligible for membership, a student must have studied at least one semester of Spanish or the equivalent thereof at the college that grants membership, with a minimum GPA of 3.0. The student must rank in the upper 35 percent of the class (freshman or sophomore) or, if this ranking is not available, have a cumulative GPA of at least 2.75.

**Society of Manufacturing Engineers (SME)**
The purpose of the organization is to enhance the academic success of the membership through the dissemination of materials and information about the field of manufacturing engineering. The society coordinates and communicates with the graduate society, both national and international, to keep abreast with new activities in the field.

**Student Ambassadors**
A very elite group of students is the Wake Technical Community College Student Ambassadors. They are selected for their high academic achievement, enthusiasm, and leadership. The Ambassadors serve Wake Tech and its students at campus and community activities by conducting campus tours, hosting College events, and speaking with community groups, agencies, and local schools.

**Student American Dental Hygienists’ Association**
The Student American Dental Hygienists’ Association (SADHA) is a category of membership for students within the American Dental Hygienists’ Association (ADHA). ADHA is an association of the profession. ADHA is dedicated to the advancement and promotion of dental hygiene.

**Student Medical Assisting Club**
The purpose of the Student Medical Assisting Club of Wake Technical Community College is to provide information to render a better understanding of the medical assisting field as well as to provide information about the study of medical assisting and the application of medical assisting techniques.

**Student Radiologic Technologists Association (SRTA)**
The SRTA is a professional on-campus radiologic technology organization. The purpose of the organization is to increase the public awareness of the importance of qualified radiographers performing radiologic examinations; to aid a charitable organization through monetary and volunteer actions; to assist student radiographers in continuing education efforts and/or programs; and to supply financial support for the seniors’ annual pinning ceremony.

**TACTICS (Teaching Advocacy and Career Training While Incorporating Curriculum Support)**
The purpose of TACTICS is to promote campus awareness and understanding of disabilities and to provide a peer support system for students with disabilities. The members will provide support for one another and share common experiences in a comfortable environment. Members will also provide information and sponsor a variety of activities that promote disability awareness and the integration of students with disabilities into the life of the College, helping them participate in and benefit from programs and activities enjoyed by all students.

**Wake Tech Computer Club**
The purpose of the Wake Tech Computer Club is to assist members in exploring opportunities in the computer information technology field and to develop a sense of professionalism among members. The Wake Tech Computer Club also gives students a chance to improve their computer skills and to network with the professional community. The Wake Tech Computer Club offers a forum in which new technology trends in software and hardware are explored.

**Wake Technical Community College Emergency Medical Science Student Association**
The purpose of this association shall be to provide information, activities, and minimal financial assistance for curriculum-related activities for students in the Wake Tech EMS Association; and to foster an appreciation of the Emergency Medical Services program and related disciplines; and to organize EMS students and combine their efforts to advance the science and art of emergency medicine.
Traffic Rules and Regulations

Ordinance Governing Traffic, Parking, and
Registration of Motor Vehicles

Revised June 2006

Be it resolved that, pursuant to the authority vested in it by Chapter 115D-21 of the General Statutes of North Carolina, the Board of Trustees of Wake Technical Community College adopts and records in its proceedings the following rules governing parking, traffic, and registration of motor vehicles on the campuses of Wake Technical Community College. These regulations are intended only to supplement the Motor Vehicle Laws of North Carolina, all provisions of which, under the terms of the above statute, now apply to the campuses of Wake Technical Community College. From the date of filing of these regulations in the Office of the Secretary of State, they shall apply to and be in effect on the streets, roads, alleys, sidewalks, walkways, parking spaces, parking areas, and parking lots on all parts of the campuses of Wake Technical Community College.

A. ARTICLE I. GENERAL PROVISIONS

Section 1. Definitions
1. “Abandoned vehicle” means a motor vehicle that has remained parked for a period of more than ten (10) days or which is determined to be “derelict” under North Carolina General Statute 20-137.7.
2. “Employee” means the faculty, administrative staff, clerical personnel, and all other non-student personnel of the College employed part-time or full-time as permanent or temporary employees.
3. “No parking area” means any area not specifically marked, striped, or designated for parking.
4. “Parking area” means any place or area specifically set aside, marked, or assigned by Facility Services for the parking of vehicles, either permanently or temporarily.
5. “Repeat offender” means any person committing three (3) or more traffic and/or parking violations within the academic year.
6. “Student” means a person registered for full- or part-time academic study and who is not also an employee of the College.
7. “Visitor” means any individual not identified by this section as an employee or student.

Section 2. Authority
1. As approved by North Carolina General Statutes, Chapter 115D-21, the Board of Trustees of Wake Technical Community College through their designee, Facility Services, shall be responsible for the registration, flow, and parking of vehicles on property owned or leased in whole or in part by the State of North Carolina and that is under control of the Board of Trustees of Wake Technical Community College. Notwithstanding the above, the Registrar shall be responsible for the registration of student vehicles. The provisions of the regulations shall apply to the operators of all vehicles that are operated on any of the College’s campuses, and they shall be in force and effect twenty-four hours a day, except as herein provided.
2. The Facilities Services Office, acting pursuant to the authority vested by this Ordinance and the Board of Trustees, shall exercise discretion and authority in such a manner as to insure the proper conduct of the necessary business of the College and shall exercise discretion and authority over the effective utilization and control of the available parking areas and facilities on the campuses of the College for the benefit and maximum convenience of students, faculty, staff, and visitors.
3. Liability. Wake Technical Community College assumes no liability or responsibility for damage to or theft of personal property or of any vehicle parked or in operation on the properties leased by or under the control of the Board of Trustees of the College.

Section 3. Violation of Ordinance
1. In addition to the criminal penalties set out by the North Carolina General Statutes, any person violating this or any regulation issued hereunder is subject to a civil penalty as set forth in this Ordinance.
2. Rules of Evidence. When a vehicle is found to be in violation of this Ordinance, it shall be considered prima facie evidence that the vehicle was parked:
   a) by the person holding the College parking permit for that vehicle, or
   b) by the person on file as owner of said vehicle with the North Carolina Division of Motor Vehicles or corresponding agency of another state.
B. ARTICLE II. VEHICLE REGISTRATION AND PARKING PERMITS

Section 1. Permit Eligibility
1. General Provision. All faculty, staff, and students in good standing with the College are eligible for and may obtain a parking permit. Each motor vehicle parked on the campus by students, faculty, and staff must be registered with the College and must display a valid, official vehicle parking permit issued by the College.
2. Handicapped Parking Permit. All faculty, staff, and students in good standing with the College who possess a valid “handicapped placard” or “distinguishing license plate” issued to them pursuant to North Carolina General Statute 20-37.5 are eligible for and may obtain a distinguishable Handicapped Parking Permit. The following requirements must be met to obtain a Handicapped Parking Permit:
   a) Complete a Wake Technical Community College VEHICLE REGISTRATION card.
   b) Present a registration card for the handicapped parking placard or distinguishing license plate issued to them pursuant to North Carolina General Statute 20-37.5.
3. Parking permits become invalid under the following conditions:
   a) Ownership of the vehicle is transferred to another person or entity.
   b) The permittee’s association with the College terminates.
   c) The time period for which the permit is issued expires.
   d) The permittee is issued another permit relating to the same vehicle.
   e) The permittee’s privilege to park and operate a vehicle is forfeited as a result of the imposition of disciplinary sanctions.
   f) The permittee has established a pattern of abuse of parking privileges by committing three (3) or more traffic or parking violations per academic year.

Section 2. Registration of Motor Vehicles.
1. Faculty/Staff. Registration of employee vehicles is conducted through the Personnel Records Office. There is no cost for vehicles operated by employees and no limit on the number of vehicles that can be registered. It should be noted that faculty/staff parking permits are for the exclusive use of faculty/staff only. This does not entitle relatives of faculty/staff to park in staff spaces, even if the vehicle has a staff/faculty parking permit. Staff/faculty parking permits need not be renewed except when the permit is worn or illegible.
2. Students. Registration of student vehicles will be conducted as a part of the normal College registration process. A vehicle brought onto the campus after college registration must be registered promptly.
3. Parking permits will be issued in conjunction with student identification badges and will be valid for one (1) academic year beginning August 1 and expiring July 31.
4. The vehicle parking permit shall be properly affixed to and displayed on the motor vehicle for which it is issued. Permits issued for four-wheel vehicles are to be placed on the left side of the rear window of such vehicle. Permits issued for two-wheel vehicles are to be placed on the rear of the vehicle.
5. Faculty, staff, and students issued a motor vehicle registration permit shall be responsible for parking violations involving the vehicle for which the permit is issued.
6. Students registered for classes at the Health Sciences Campus must obtain an entry key card for the parking deck. Temporary parking permits must be obtained whenever a permittee’s vehicle is unavailable and the permittee seeks to park or drive another vehicle on campus.
7. Visitors. Visitors to the campus, as defined in Article I, are not required to obtain a parking permit, but may park only in those parking spaces designated for visitor and/or general parking.

C. ARTICLE III. PARKING AND TRAFFIC RULES AND REGULATIONS

Section 1. General Provision
Faculty, staff, and students are subject to discipline in accordance with the provisions of this Ordinance and College policy and procedure.

Section 2. Rules and Regulations
1. No vehicle shall be driven in a careless or reckless manner or in a direction opposite to that indicated by appropriate signs or markings on roadways that are designated as one-way streets.
2. For purpose of determining the speed limit on the campus, the campuses shall be deemed a business district, and the speed limit shall be 20 miles per hour.
3. Vehicles parking in non-parallel parking spaces shall be parked with the front end of the vehicle at the curb indicated by marking or signs, and no vehicle shall be parked in such a manner as to occupy more than one space. All vehicles must park in the direction of the flow of the traffic pattern.
4. Vehicles parking in a designated handicapped parking space must display a distinguishable handicapped parking permit issued by the college or, a valid handicapped placard or distinguishable license plate issued to the operator or passenger pursuant to North Carolina General Statute 20-37.5. Any person parking in a designated handicapped
5. parking space must comply with the requirements of North Carolina General Statue 20-37.6 “Parking privileges for handicapped drivers and passengers”.

6. Parking in the following places is prohibited: on a sidewalk or walkway; along the main driveway entering the College; in the driving lanes of parking areas; in loading or unloading areas; in fire lanes; on the grass or landscaped areas; in the approaches or other portions of parking areas that are not clearly marked for parking.

7. Neither faculty, staff, nor student vehicles may use those parking spaces specifically reserved for certain persons or functions.

8. Agents designated by the Administration shall have authority to remove to a place of storage at the owner's expense any vehicle illegally stopped, parked, or abandoned.

Section 3. Enforcement
1. The College shall reserve the right to revoke any parking privileges and to remove a repeat offender's valid parking permit for flagrant violation of the Traffic Rules and Regulations, including failure to pay fines.

2. Fines. The Accounting Office is hereby authorized to collect a fine in the following amounts for a violation of this Ordinance.

   a) Back-in parking in parking space $ 5.00
   b) Driving in a hazardous manner 5.00
   c) Driving wrong way in drive lanes 5.00
   d) Failure to display current parking decal 5.00
   e) Failure to register vehicle 5.00
   f) Failure to heed stop or yield sign 5.00
   g) Improper display of parking decal 5.00
   h) Parking in manner creating a hazard 5.00
   i) Parking in more than one parking space 5.00
   j) Parking in non-parking space 5.00
   k) Parking in unauthorized space 5.00
   l) Parking incorrectly in space 5.00

3. Towing. The Manager of Security is hereby authorized to have towed (or use other lawful means of enforcement), from the campuses of the College to a designated place of storage, any vehicle in violation of the following and under the following circumstances:

   a) unauthorized parking in a handicapped space
   b) unauthorized parking in reserved space
   c) parking in area not designated for parking
   d) repeated violation of the parking rules
   e) abandoned vehicles

4. In addition to any fine assessed for a violation of this Ordinance, the owner of a vehicle that is towed from the College is responsible for payment of any towing and/or storage fee charged for such towing.

5. Notice of North Carolina State Law Concerning Towed Vehicles. Wake Technical Community College provides a petition/appeal procedure for the resolution of both towing and parking violations. Additionally, North Carolina G.S. 20-219.11 provides the following remedy:

   a) Whenever a vehicle with a valid registration plate or registration is towed as provided in G.S. 20-219.11, the authorizing person shall immediately notify the last known registered owner of the vehicle of the following:
      i. a description of the vehicle;
      ii. the place where the vehicle is stored;
      iii. the violation with which the owner is charged, if any;
      iv. the procedure the owner must follow to have the vehicle returned to him; and
      v. the procedure the owner must follow to request a probable cause hearing on the towing.

   b) The owner or any other person entitled to claim possession of the vehicle may request in writing a hearing to determine if probable cause existed for the towing. The request shall be filed with the magistrate in the county where the vehicle was towed. The magistrate shall set the hearing within 72 hours of his receiving the request.

   c) The only issue at this hearing is whether or not probable cause existed for the towing. If the magistrate finds that probable cause did exist, the tower's lien continues. If the magistrate finds that probable cause did not exist, the tower's lien is extinguished.

   d) Any aggrieved party may appeal the magistrate's decision to district court.

For a more complete explanation of the above procedure, refer to North Carolina General Statutes, Chapter 20-219.11.
Section 4. Suspension of Parking Privileges

The Manager of Security may, in addition to any other penalty, suspend the parking privileges, for up to one year, of any individual found to be a repeat offender in flagrant violation of this Ordinance.

Section 5. Failure to Settle Fines, Fees, and Charges

Failure to settle outstanding traffic and parking fines, fees, and/or charges within fourteen (14) days after issuance of a citation can result in the College arranging for the collection of fees assessed against faculty, staff, students, and visitors in the following manner.

- Penalties owed by faculty members and other employees of the College may be deducted from payroll checks.
- Penalties owed by students will be forwarded to the Registrar and a hold is placed on the student’s records until the penalties are paid.

Section 6. Petition/Appeal Procedure

1. Individuals issued a parking and/or traffic citation may appeal the violation by returning within seven (7) calendar days of the date of the violation notice a Traffic Violation Appeal form to the Traffic Appeals Review Board. The Appeal forms are available at the switchboard located in Holding Hall on the Main Campus. Unless other procedures are specified in this section, the appeal and all arguments in support of the appeal will be submitted to the Traffic Appeals Review Board in writing. The Traffic Appeals Review Board Administrator will consider the written statement of the appellant and relevant documents or information submitted by the Manager of Security.
   a) The Traffic Appeals Review Board Administrator shall review the appeal and respond by mail to the address provided on the appeal form.
   b) Only official appeals received within seven (7) calendar days of the violation notice, excluding official College holidays, will be accepted for review. The right to appeal a violation notice is considered waived upon expiration of the 7-day appeal limitation period. No untimely appeals will be accepted for review.
   c) If the appellant’s driving or parking privileges are suspended or revoked, the appellant will be allowed the opportunity to appear before the Traffic Appeals Review Board and provide relevant information in addition to the information previously provided in writing.
   d) The decisions of the Traffic Appeals Review Board are final, except as otherwise provided herein and by College policy and procedure.

2. Appeal Hearings. Individuals whose (1) driving and/or parking privileges are suspended and (2) whose vehicle is towed may request a hearing to appeal the matter by submitting a written request to the Manager of Security. The written request for an Appeals Hearing must be received within fourteen (14) calendar days of the date of the decision giving rise to the appeal. The individual will be notified in writing of the hearing date, time, and location. Each individual is permitted one continuance of the hearing if he/she is unable to attend on the specified date.

3. The membership of the Traffic Appeals Review Board will consist of a Traffic Appeals Review Board Administrator, one (1) faculty member, one (1) staff member, and two (2) student members.

4. Appointment to Traffic Appeals Review Board. The President of the Faculty Association will appoint the faculty member. The President of the Staff Council will appoint the staff member. The Student Government Association President will appoint student members. The term of office will be for a one-year period, beginning in September and ending in August. There will be no limit to the number of terms served. Members will serve until successors are appointed.
   a) The Manager of Security or his designee may attend each hearing to clarify any operational questions that may arise.
   b) The Traffic Appeals Review Board Administrator will chair the hearing. The Administrator will bring the hearing to order and introduce the appellant, provide written or oral summation of the ruling, disperse completed appeal forms to each member of the board, maintain time restrictions with regard to testimony, dismiss the appellant, and call for a vote from each member of the Traffic Appeals Review Board. The Administrator will make note of the decision regarding the appeal. The Administrator is a non-voting member of the Board, except when it is necessary to break a tie vote.
   c) The Traffic Appeals Review Board will meet when necessary. The Traffic Appeals Review Board Administrator is responsible for notifying the appellant and Board members of the time, date, and location of the hearing. In emergency situations (such as a student not being allowed to register for classes or an employee not receiving an employment contract due to pending traffic appeals) and between regularly scheduled meetings of the Traffic Appeals Review Board, the Board Administrator may render decisions on traffic appeals.
   d) The decision reached by the Traffic Appeals Review Board is final, except as otherwise provided by College policy and procedure. If the appeal is denied, payment of the fine is due immediately.
Section 7. Judgment Factors
1. All facts stated on the appeal form and presented by the appellant.
2. Any information provided by the Manager of Security to include previous violations records.
3. Information noted on the parking violation notice.
4. The issuing officer's testimony.
5. The rules and regulations of this Ordinance.
CONTINUING EDUCATION PROGRAMS

CONTINUING EDUCATION PURPOSE
Wake Technical Community College plays an active role in the continuing education of the citizens of the Capital area. The College’s Continuing Education programs provide courses for those who need to train, retrain, and update themselves in a vocational or professional area, for those who desire instruction enabling them to grow in basic knowledge, improve in home and community life, and develop or improve leisure time activities, and for those individuals whose education stopped short of high school graduation.

CONTINUING EDUCATION UNITS
Wake Technical Community College awards Continuing Education Units (CEU’s) for non-credit courses and special activities. A permanent transcript will be established for each non-credit student. The transcript will be updated each time the student completes a non-credit course. CEU’s will be awarded for non-credit courses satisfactorily completed on the basis of one CEU for each ten hours of instruction. Fractions of CEU’s will be awarded. Thus, a 66-hour course meeting three hours per evening, two evenings per week for eleven weeks will earn the student 6.6 CEU’s. CEU’s will not be awarded to students who fail to complete a course satisfactorily. Certificates will be awarded upon completion of courses that earn CEU’s.

The Southern Association of Colleges and Schools became the first regional accrediting agency to require that all member institutions use the CEU to document non-credit special activities.

Students who have taken non-credit classes may request copies of their transcript by writing the Registrar, giving their name, address, and social security number.

ADMISSION AND REGISTRATION
Any adult, 18 years of age or older and not enrolled in public school, may be admitted to an adult education class. In extenuating circumstances, and upon the approval of the appropriate public school principal or superintendent, a person 16-18 years of age may enroll in certain courses. A course schedule is published and made available to the public prior to the beginning of each term. Information about all continuing education classes may be obtained on the college website www.waketech.edu or by calling the college at (919) 866-5420.

CLASS LOCATIONS
Many continuing education courses and services are provided on the main campus. Other classes are conducted in surrounding communities or within a particular business or industry in Wake County. Almost any course can and will be organized in other areas of the county when a sufficient number of citizens indicate an interest in having a class brought to a particular location, providing there’s an instructor and suitable facility.

OCCUPATIONAL EXTENSION COURSE REPETITION
Special provision legislation states that “Community colleges may permit a student to repeat a course more than once if that student demonstrates that the course repetition is required by standards governing the certificate or licensing program in which the student is enrolled.”

A minimum registration fee will be charged those who have taken an occupational extension class more than twice in a five-year period and who are not exempt. (See Expenses section regarding exemptions.) An individual who takes a course more than twice will pay at least the amount an individual will pay who has taken it less than twice. A predetermined rate of $4.96 per scheduled hour will be charged to those individuals who have taken an occupational extension class more than twice and are not otherwise exempt.

COURSE DESCRIPTIONS
Although course descriptions for continuing education courses are not provided in this publication, examples of the types of courses that are offered are listed. Specific course descriptions are furnished upon request. Courses, in addition to those listed in this publication, may be offered to meet expressed needs of the community when evidence of these needs is presented to the College.
EXPENSES

A registration fee is charged for Community Service and Occupational Continuing Education courses:

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<th>Number of Hours</th>
<th>Registration Fee</th>
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<tr>
<td>1-10</td>
<td>$50</td>
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<tr>
<td>11-30</td>
<td>55</td>
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<td>31-100</td>
<td>60</td>
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<td>over 100</td>
<td>65</td>
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There is an additional fee for classes held at Community Schools.

The registration fee is waived for students enrolling in special classes for fire service, rescue, and law enforcement personnel, Wake Technical Community College full-time employees (one course per term), citizens over the age of 65, and prison inmates. The registration fee is not charged for Adult Basic Education programs, for preparatory instructional programs for the High School Diploma Equivalency Certificate (GED), for the Adult High School Diploma program, or for English as a Second Language program. There is a $7.50 fee for final GED testing.

CONTINUING EDUCATION WITHDRAWAL AND REFUND

Refund requests and withdrawals must be made in writing by the student (no exceptions). Refund request forms are available at each class site. A request for refund may be made by letter.

1. A 100-percent refund shall be made if the student officially withdraws from the class before the first class meeting by submitting a written request.

2. A 75-percent refund shall be made if the student officially withdraws from the class prior to or on the 10-percent date of scheduled hours. **Community school, facility, and lab fees are not refundable.**

3. A full refund shall be made for classes canceled by the College. You do not have to request a refund.

CONTINUING EDUCATION TRANSFER POLICY

Transfers to a different course in the same semester are allowed up until the 10-percent point of the total number of hours in both classes. A student may not transfer to a course that has passed the 10-percent point. Transfers from one semester to another are not allowed.

Transfer requests **must** be in writing. Requests received after the 10-percent deadline will not be considered, and a refund will not be processed.

BASIC SKILLS ADMISSION AND PLACEMENT POLICY

Wake Tech admits all adults into the College and makes every effort to place students in programs where they can experience success and meet their goals. Basic Skills offers educational opportunities in several areas, including Adult Basic Education (ABE), General Educational Development (GED), Adult High School (AHS), English as a Second Language (ESL), and Compensatory Education (CED). Placement into these programs is determined by standardized assessment tools. If students do not demonstrate progress in their placement level within 50 hours of attendance, they will be moved to another level in Basic Skills or referred to other College programs or an appropriate agency.

POLICY ON ADMISSION OF MINORS, NON-HIGH SCHOOL GRADUATES, INTO THE BASIC SKILLS PROGRAM

This policy applies to Wake Technical Community College and is in addition to State Board of Community College policies as published in North Carolina Administrative Code, 23 NCAC 2C.0300, Admission to Colleges and 23 NCAC 2C.0305, Education Services for Minors. This policy specifically addresses non-high school graduates’ admission into the Basic Skills Program excluding English as a Second Language (ESL):

1. Non-high school graduates who are 16 or 17 years of age will not be allowed to enroll in the Basic Skills Program before a minimum of six months from the official date of withdrawal from a public or private high school or from a home school program.

2. The student must exhaust any suspension period given the student by a public or private high school or a home school program in addition to the College’s six-month waiting period before being eligible for enrollment in the College’s Basic Skills Program.

3. The Administration of Wake Technical Community College has the express authority of the Board of Trustees to implement necessary procedures for enforcement and regulation of this policy.
Basic Skills

Basic Skills programs are offered throughout Wake County to help adults:

- Learn to read.
- Improve math, reading, and writing skills.
- Earn an adult high school diploma or GED high school diploma equivalency.
- Learn English as a second language.
- Develop basic skills needed in the work place.

Basic Skills programs also help:

- Developmentally disabled persons achieve their potential.
- Families strengthen literacy skills and family bonds.
- Underemployed/unemployed persons prepare for employment or further education.
- Business and industry develop a highly skilled work force.

Basic Skills Programs

Adult Basic Education

Adult Basic Education is designed to assist individuals who need to improve their skills in reading, writing, and/or mathematics. Instruction covers the fundamentals of mathematics, reading, and oral and written communications.

There are no fees or charges of any kind. All materials have been especially prepared for adults and instructional plans emphasize individual needs and interests. Students enroll in Adult Basic Education to improve skills for the work place, achieve personal goals, and/or enroll in one of the College’s high school completion programs. Classes are offered on the main campus, at the Adult Education Center, and at community sites throughout Wake County.

General Educational Development (GED)

The General Educational Development program offers instruction for adults who are preparing for the GED exam. Instruction covers high school level reading, writing, mathematics, science, and social studies skills. Students may prepare for the exam on the main campus, at the Adult Education Center, or at a community site. Materials are provided to students, and there is no tuition.

Those achieving a passing score on all five sections of the exam receive a high school equivalency diploma from the North Carolina State Board of Community Colleges. The GED is generally recognized as a high school equivalency for purposes of college admission and employment.

Wake Technical Community College has two GED Testing Centers, one located on the main campus and the other at the Adult Education Center. Students are required to pay a (one-time only) $7.50 testing fee when they take the official GED exam.

Adult High School Diploma

The Adult High School Diploma program is provided through a cooperative arrangement between Wake Technical Community College and the Wake County Board of Education with the College serving as the administering agency. Adult High School provides academic courses in a lab setting. Students are placed in courses in English, mathematics, social studies, science, and in electives based on their previous high school transcripts and acceptable scores on a standard battery of tests administered prior to program admission.

The Adult High School diploma program is offered at the Adult Education Center. Upon completion of “job ready” activities, the required credits, and successful completion of the North Carolina Competency Test, students are awarded an adult high school diploma. There are no tuition fees; however, students must purchase some books and materials.

Compensatory Education

Compensatory Education is for adults with developmental disabilities who want to improve their academic, social, and vocational skills and achieve their full potential. The Compensatory Education program operates year-round in close coordination with mental health professionals and agencies.

In addition to classes offered in cooperation with area service providers and agencies, some locations serve students from the broader community. Parents or guardians of adults with developmental disabilities who would like additional information about the program should contact the Compensatory Education coordinator. The program is offered free of charge.
**English as a Second Language**

English as a Second Language (ESL) is designed for students whose native language is not English. The program focuses on addressing English for life skills, such as filling out various forms, seeking medical attention, or helping parents of young children to navigate the public school system. ESL classes give students the opportunity to increase their level of communication with emphasis on speaking, listening, reading and writing skills. Instructors also assist students in pre-employment preparation, community interaction, cultural enrichment, and professional and academic advancement.

ESL classes are offered free of charge at the Adult Education Center and various locations throughout the county. Students may enroll at any location until the classes are full.

**HEP Program**

The High School Equivalency Program (HEP) is a grant from the United States Department of Education, Migrant Education Division, to Wake Technical Community College and a collation of service organizations to provide migrant and seasonal farm workers and their families the necessary training to obtain a GED (high school equivalency certificate).

**Business and Industry Services**

In today’s fast-paced digital economy, businesses must seek new knowledge and leverage new technologies if they are to survive and grow. The Business and Industry Services Division serves the lifelong learning needs of the business community.

The Business and Industry Center (BIC) is located at the Western Wake Campus in Cary where it provides classes and seminars. It also offers customized employee training at employer sites as well as other area locations.

**Apprenticeship Training**

Wake Tech has been designated by the North Carolina Community College System as a center for formal apprenticeship training. The College assists companies that are participating in a customized apprenticeship training program by providing the related classroom instruction.

**Focused Industrial Training (FIT)**

Wake Tech assists area industries in training and retraining employees with courses that range from basic fundamental skills to sophisticated technical skills to skills in supervision and management.

**Human Resources Development**

**Workforce HRD**

The workforce human resources development (HRD) program provides pre-employment training, career assessment, and job assistance for adults. The goal of the program is employment or further education.

**New and Expanding Industry (NEIT)**

The new and expanding industry training program provides customized training assistance in support of new, full-time production positions created in the state of North Carolina. This enhances the growth potential of companies located in the state while simultaneously preparing North Carolina’s workforce with the skills essential to successful employment in emerging industries.

**Management Development Program**

To meet the supervisory and managerial needs of business and industry, Wake Tech offers management development programs in sales training, computer skills, problem solving, office occupations, project management, import logistics and international marketing.

**Small Business Center (SBC)**

Wake Tech’s Small Business Center (SBC) works to increase the success rate and number of viable small businesses in North Carolina by providing high quality, readily accessible assistance to prospective and existing small business owners and their employees. The Small Business Center provides education and training, information, and referral.

The Small Business Center has a library of printed materials available to assist with small business research and problem solving. The library includes books, pamphlets, magazines, trade journals, and a wide variety of tapes and videos.

Confidential counseling services and access to resource libraries are free of charge along with seminars and workshops.
Education Services and Technology

Continuing Education Registrar

This department ensures accuracy and quality in all Continuing Education programs to comply with the NC General Statutes, Title 23 of the NC Administrative Code, Continuing Education Guidelines, Numbered Memoranda and the Colleges’ Accountability and Credibility Plan in all of Continuing Education registration and reporting processes.

Human Resources Development

JOB SKILLS HRD

Job Skills Human Resources Development (JSHRD) is a pre-vocational program offered by Wake Technical Community College. The program is designed to help unemployed and/or underemployed adults, ages 18 and older, enhance their existing skills and improve their employment opportunities. Courses are designed to meet the students’ needs and to focus on skills that promote success in finding and maintaining employment. Class length and times vary.

One-on-one and group counseling sessions assist students in identifying and enhancing personal characteristics that lead to success with career goals. The following are standard components in JSHRD: self-appraisal, career planning, resume preparation, interviewing, job search strategies, and communication skills.

Human Resources Development

WORKFORCE HRD

The workforce human resources development (HRD) program provides pre-employment training, career assessment, and job assistance for adults. The goal of the program is employment or further education.

Non-Credit and Weekend Computer Education Program

The Non-Credit and Weekend Computer Education program provides computer courses that help adults develop new hardware and software skills and enhance existing technology skills. The program also provides industry standard certification preparation courses for individuals seeking certification in the following areas: A+ Hardware and Software, Oracle, Oracle DBA, Oracle PL/SQL, Java, Computer Security, Visual Basic, Networking, and Linux, through traditional and online programs.

The goal of the program is to enrich personal and workplace computer skills, enhance employment opportunities and job advancement. The following are examples of the large variety of courses offered for this purpose:

- ASP .NET
- Digital Photography
- Dreamweaver
- Flash
- Graphic Design
- Introduction to Personal Computers and Windows
- Microsoft Office
- Programming Languages
- 3-D Computer Graphics, Modeling & Animation
- Photoshop
- AutoCAD for Windows
- MySQL

Special Projects

This department provides program management for division and departmental projects, develops program strategies, goals, and time frames for program implementation, and seeks funding to implement and sustain new and existing programs for workforce development through special projects and grants.

Evening and Weekend Programs

Occupational Training and Upgrading

An ongoing priority of Wake Technical Community College is to offer evening and weekend programs that provide credit and non-credit courses appropriate to the needs of the working adult. These programs focus on assisting adult students, who are primarily part-time students, in developing new skills to obtain employment or to change career paths, and on helping students upgrade their skills to maintain employment. Programs for personal development are also offered in the evening.

Primary to this effort is the resolve to offer evening sections of each program that the College provides. This occurs as the need is introduced and resources permit. Offering a series of evening courses from a program for certificate credit is another strategy used by the institution for meeting the educational needs of working students. A third strategy employed is to provide a variety of single courses or a cluster of related courses that provide job specific information and that may apply toward credit should a student decide to enroll in a program.
Wake Tech holds the position that students should have the opportunity to apply the knowledge and skills learned in the classroom in a work setting, and hence provides a cooperative education program for this purpose. Evening students may take advantage of this opportunity upon request. Since Wake Tech’s evening students are usually attending school at night on a part-time basis while working during the day on a full-time basis, cooperative education placements are generally not available for part-time evening students. However, if an evening student wishes to participate in the cooperative education program, he or she should contact the Director of Cooperative Education.

Other services available to students enrolled in the Evening Program include the following: tutorial assistance and individualized learning programs through the Individualized Learning Center or Special Populations, library services, counseling and registration services, and book store operations. Evening students enrolled for at least nine (9) credit hours, having paid the required administration fee, may participate in all student activities including the Student Government Association.

Occupational training and upgrading courses provide training for specific job skills essential to successful employment.

New skills are taught and present skills are updated in order to make an employee more efficient on the job, to improve the chances for advancement to a new job, or to meet legislated requirements. The following are examples of the large variety of courses offered for this purpose:

- Automotive Repair
- Building Trades
- Business Management
- Computer Skills
- Electrical-Electronics Trade
- Foreign Languages
- Internet-based Instruction
- Machine Trades & Welding
- Medical Terminology, Coding, and Transcription
- Plumbing
- Real Estate Updates

**Wake County Community School Program**

The goal of Community Schools is to make quality educational and recreational experiences available in convenient locations at reasonable costs. Through interagency cooperation a variety of offerings are provided for the general public. Wake Technical Community College actively supports and participates in this program by offering numerous credit and continuing education courses at local schools four evenings per week.

**Evening Curriculum Program Offerings**

For detailed information concerning Wake Tech’s Evening Program offerings, refer to those sections of this catalog that contain descriptions of the day offerings. Current curriculum programs offered in the evening and on Saturdays include:

- **College/University Transfer**
  - Associate in Arts (A.A.)
  - Associate in Science (A.S.)
  - Associate in Science—Pre-Major: Engineering (A.S.)

- **General Education**
  - Associate in General Education (A.G.E.)

- **Associate Degree Programs** (2 years)
  - Accounting
  - Advertising and Graphic Design
  - Business Administration
  - Business Administration/Electronic Commerce
  - Business Administration/Human Resources Management
  - Civil Engineering Technology
  - Computer Engineering Technology
  - Computer Information Technology
  - Computer Programming
  - Criminal Justice Technology
  - Database Management
  - Early Childhood Associate
  - Electronics Engineering Technology
  - High Performance Computing
  - Hotel Restaurant Management
  - Human Services Technology
  - Human Services Technology/Developmental Disabilities
  - Human Services Technology/Substance Abuse
  - Information Systems Security
  - Industrial Engineering Technology
  - Mechanical Engineering Technology
  - Networking Technology
  - Simulation and Game Development
  - Surveying Technology
  - Web Technologies
Diploma Programs (12 months)
- Early Childhood Associate
- Medical Assisting
- Simulation and Game Development
- Therapeutic Massage

Certificate Programs (3-24 months)
- Advertising and Graphic Design:
  - Graphics and Design
  - Web and Graphic Design
- Air Conditioning, Heating, and Refrigeration
- Architectural Technology: Architectural CAD
- Automation Engineering Technology:
  - PLC Programming
  - Robotics
- Basic Law Enforcement Training
- Business Administration:
  - Customer Service
  - Sales Development
- Business Administration/Human Resources Management
- Computer Engineering Technology:
  - C-Programming—Open Source Development
  - Linux Kernel Development
  - Pentium System Architecture
- Computer Information Technology:
  - Computer Forensics
  - Hardware Troubleshooting (A+)
  - IT Support Technician (MCDST)
  - Microsoft Office Specialist (MOS)
  - IT Support Management
  - Spreadsheet Management
- Computer Programming:
  - C++ Programming
  - Computer Science
  - JAVA Programming
  - Visual Basic Programming
- Construction Management Technology
- Culinary Technology: Basic Skills Certificate
- Database Management:
  - Oracle DBA Programming
  - Oracle Developer
- Early Childhood Associate:
  - Infant/Toddler Care
- Electrical/Electronics Technology:
  - Commercial Wiring Methods
  - Residential Wiring Methods
- Electronics Engineering Technology: Basic Electronics
- High Performance Computing:
  - Bioinformatics Computing
  - Linux/Red Hat Administration
- Heavy Equipment and Transport Technology:
  - Construction Equipment Systems:
    - Fuel Injection, Electrical, and Electronics

Hydraulics, Engines, and Transmissions
Human Services Technology/Substance Abuse
Industrial Engineering Technology:
- Quality Assurance
- Advanced Quality Assurance
Information Systems Security:
- Network Security Administration
Machining Technology
Machining Technology: CNC Machining
Machining Technology/Tool, Die, and Mold Making:
- Mold Making
Mechanical Drafting Technology
Mechanical Engineering Technology:
- Mechanical Design
- Thermal Mechanics
Medical Office Administration:
- Medical Billing and Coding
- Medical Office Specialist
- Medical Transcription Specialist
Networking Technology:
- CISCO Certified Network Assoc. (CCNA)
- CISCO Certified Network Prof. (CCNP)
- Microsoft Certified Systems Engineer (MCSE)
- Nursing Assistant
Office Systems Technology:
- Integrated Office Systems
- Office Publications Certificate
- Office Specialist I
- Office Specialist II
- Word Processing
Office Systems Technology/Legal
- Real Estate
- Real Estate Appraisal
Web Technologies:
- E-Commerce Programming
- Web Developer
- Web Designer
Welding Technology

Preparatory Courses
- High School Algebra
- High School Chemistry
- Mathematics Fundamentals
- Reading Improvement
- Study Skills
- Writing Fundamentals

Weekend Programs
- Computer Programming:
  - Internet Programming
  - Visual Basic Programming
Early Childhood Credential Courses
Information Systems: Networking
Networking Technology: MCSE
Visual Basic Certificate
Assorted courses from other curricula are also offered evenings and Saturdays.

**Public Safety and Service Occupations Division**
The following program areas provide training to public safety personnel and to persons who wish to increase their individual competencies in specialized occupational areas.

**Health Education Services**
Courses are designed to meet the needs of local EMS agencies, healthcare providers, and the public with emphasis on emergency patient care in traditional pre-hospital and nontraditional environments. Health education courses are also designed to assist individuals desiring employment or retraining in health institutions or related fields.

**Fire Service Training**
Fire Service Training is delivered directly to individual fire departments. Training held in local fire departments allows personnel to utilize equipment they will actually use in controlling fires. Fire Service classes include:

- Arson and Unlawful Burning
- Fire Apparatus Practices
- Fire Fighting Practices
- Forcible Entry
- Hazardous Materials
- Ladder Practices
- Portable Fire Extinguishers
- Protective Breathing Equipment
- Rescue Practices
- Rope Practices
- Salvage and Overhaul Practices
- The Company Officer
- Ventilation

Related courses in Fire Service Training include industrial brigade training, home fire safety, search, and rescue.

**Service Occupations**
This program trains individuals in the area of food service, lodging, travel information, and vocational occupations. The primary objectives include providing employers with well-trained personnel to operate their business and developing individuals with skills that will qualify them for better employment opportunities. Hospitality training is arranged and scheduled in accordance with the needs of the industry. Vocational training is provided in the areas of plumbing, electrical wiring, heating and air conditioning and carpentry.

**Corrections Education**
Corrections Education is delivered to immured individuals in Wake County's judicial system. The primary purpose of the training is to increase the safety of the general public by reducing the recidivism rate through training.

**Public Safety and Homeland Security**
Public Safety and Homeland Security courses are designed as in-service and pre-service education for those engaged in law enforcement activities and are provided at the request of these agencies. Program emphasis is on legal and technological law enforcement advancements. Courses such as the following are offered in many areas:

- Child Passenger Safety Training
- Community Policing
- Criminal Investigation
- Domestic Disturbance Response
- D.W.I. Detection
- Effective Report Writing
- Firearms Training
- First-Line Supervision
- Homeland Security
- Juvenile Law
- Laws of Arrest, Search, and Seizure
- Motor Vehicle Laws
- Narcotics Investigation
- Radar Certification
- Spanish for Law Enforcement
- Traffic Accident Investigation
CONTINUING EDUCATION
GRADING POLICY

All classes except Adult High School classes use the S-U system.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Satisfactory (attended at least 90% of scheduled class hours)</td>
</tr>
<tr>
<td>*U</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>*NG</td>
<td>No grade</td>
</tr>
<tr>
<td>*W</td>
<td>Withdrew</td>
</tr>
</tbody>
</table>

*CEU’s are not awarded with these grades.

Continuing Education Units (CEU’s)
Those courses that earn CEU’s do so on the basis of one CEU per ten contact hours.

Adult High School classes use the A-F system.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (93-100)</td>
<td>Excellent</td>
</tr>
<tr>
<td>B (85-92)</td>
<td>Above average</td>
</tr>
<tr>
<td>C (78-84)</td>
<td>Average</td>
</tr>
<tr>
<td>D (70-77)</td>
<td>Below average</td>
</tr>
<tr>
<td>F (0-69)</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew</td>
</tr>
</tbody>
</table>
ASSOCIATE DEGREE PROGRAMS*

College/University Transfer
Associate in Arts (A.A.)
Associate in Science (A.S.)
Associate in Science—Pre-Major: Engineering (A.S.)

General Education
Associate in General Education (A.G.E.)

Associate in Applied Science (A.A.S.)**
Accounting
Advertising and Graphic Design
Air Conditioning, Heating, and Refrigeration Technology
Architectural Technology
Associate Degree Nursing
Automotive Systems Technology
Business Administration
Business Administration/Electronic Commerce
Business Administration/Human Resources Management
Civil Engineering Technology
Computer Engineering Technology
Computer Information Technology
Computer Programming
Criminal Justice Technology
Culinary Technology
Database Management
Dental Hygiene
Early Childhood Associate
Electrical/Electronics Technology
Electronics Engineering Technology
Emergency Medical Science
Environmental Science Technology
General Occupational Technology
Heavy Equipment and Transport Technology
Heavy Equipment and Transport Technology/Construction Equipment Systems
High Performance Computing
Hotel and Restaurant Management
Human Services Technology
Human Services Technology/Developmental Disabilities
Human Services Technology/Substance Abuse
Industrial Engineering Technology
Industrial Pharmaceutical Technology
Industrial Systems Technology
Information Systems Security
Landscape Architecture Technology
Machining Technology
Machining Technology/Tool, Die, and Mold Making
Manufacturing Technology/Plastics †
Mechanical Drafting Technology
Mechanical Engineering Technology
Medical Assisting
Medical Laboratory Technology
Medical Office Administration
Networking Technology
Office Systems Technology
Office Systems Technology/Legal
Radiography
Simulation and Game Development
Surveying Technology
Web Technologies

♦ ♦ ♦ ♦

*Changes may have been made since the printing of this catalog. Students should be in contact with their advisors for updates.

**Students admitted to programs that require a clinical or co-op component may be required to provide the college with an official criminal background check in order to meet the requirements of the clinical or co-op site. Convictions for certain crimes and/or evidence of drug use may disqualify students from participating in clinical or co-op experiences, which would limit their progress toward graduation.

† These programs are not open to new students.
The College/University Transfer program is designed for the person who wishes to transfer to a four-year institution. The program offers two degrees, the Associate in Arts and the Associate in Science. By enrolling in this program, the student may complete course work equivalent to the general education requirements for the bachelor's degree at a senior institution.

The Associate in Arts or the Associate in Science is awarded upon successful completion of 64 hours, including the minimum in each of the areas indicated on the curriculum outline.

### ASSOCIATE IN ARTS — A10100

OFFICIAL CURRICULUM SCHEDULE

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>12</td>
</tr>
<tr>
<td>Select 4 courses from at least 3 discipline areas. At least 1 literature course is required.</td>
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<tr>
<td>*HUM 220 is required.</td>
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<tr>
<td>ART 111, 114, 115, 116, 117</td>
<td></td>
</tr>
<tr>
<td>COM 110, 120, 231</td>
<td></td>
</tr>
<tr>
<td>DRA 111, 112, 115, 122, 126</td>
<td></td>
</tr>
<tr>
<td>ENG 131, 231, 232, 241, 242, 261, 262</td>
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</tr>
<tr>
<td>FRE 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
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</tr>
<tr>
<td>HUM 110, 115, 130, 211, 212, *220</td>
<td></td>
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<tr>
<td>LAT 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
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<tr>
<td>MUS 110, 112, 113, 114, 213</td>
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<tr>
<td>PHI 210, 215, 220, 221, 240</td>
<td></td>
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<tr>
<td>REL 110, 111, 112, 211, 212</td>
<td></td>
</tr>
<tr>
<td>SPA 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
<td></td>
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<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>12</td>
</tr>
<tr>
<td>Select 4 courses from at least 3 discipline areas. At least 1 history course is required.</td>
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</tr>
<tr>
<td>ANT 210, 220, 221, 230 (and 230A), 240</td>
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</tr>
<tr>
<td>ECO 151, 251, 252</td>
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<tr>
<td>GEO 111</td>
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<tr>
<td>HIS 111, 112, 121, 122, 131, 132</td>
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<tr>
<td>POL 110, 120, 210</td>
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<td>PSY 150, 237, 239, 241, 281</td>
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<tr>
<td>SOC 210, 213, 220, 225</td>
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</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
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<tr>
<td>Select from the following list. (If you select BIO 110, you may not select BIO 111 or BIO 112.)</td>
<td></td>
</tr>
<tr>
<td>*HUM 220 is required.</td>
<td></td>
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<tr>
<td>ART 111, 114, 115, 116, 117</td>
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<tr>
<td>COM 110, 120, 231</td>
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<tr>
<td>DRA 111, 112, 115, 122, 126</td>
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<td>ENG 131, 231, 232, 241, 242, 261, 262</td>
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<td>REL 110, 111, 112, 211, 212</td>
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<tr>
<td><strong>Mathematics</strong></td>
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<td>A. Select 1 course (and lab) from the following list.</td>
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<tr>
<td>MAT 140 (and 140A)</td>
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<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
</tr>
<tr>
<td>MAT 171 (and 171A)</td>
<td></td>
</tr>
<tr>
<td>B. Select 1 course (and lab) from the following list. (If MAT 161 was selected from List A, then MAT 171 or MAT 175 may not be selected; if MAT 171 was selected from List A, then MAT 161 or MAT 175 may not be selected.)</td>
<td></td>
</tr>
<tr>
<td>MAT 151 (and 151A)</td>
<td></td>
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<tr>
<td>MAT 155 (and 155A)</td>
<td></td>
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<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
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<td>MAT 165 (and 165A)</td>
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<tr>
<td>MAT 171 (and 171A)</td>
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<td>MAT 172 (and 172A)</td>
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<tr>
<td>MAT 175 (and 175A)</td>
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<tr>
<td>MAT 263 (and 263A)</td>
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<td>MAT 271</td>
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<tr>
<td>MAT 272</td>
<td></td>
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<tr>
<td>MAT 273</td>
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<tr>
<td><strong>Electives</strong></td>
<td>18-19</td>
</tr>
<tr>
<td>Select from entire list of courses.</td>
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<tr>
<td><strong>Graduation Requirements</strong></td>
<td>64 Credit Hours</td>
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<tr>
<td><strong>Wake Technical Community College</strong></td>
<td></td>
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<tr>
<td>2006-2007 Catalog</td>
<td></td>
</tr>
<tr>
<td>Volume XVIII No. 3 July 2007</td>
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</table>
# COURSE LIST

## Associate in Arts

| ACC 120, 121 | GEL 111, 113, 120, 230 |
| ANT 210, 220, 221, 230, 230A, 240 | GEO 111 |
| ANT 111, 113, 114, 115, 116, 117, 121, 122, 130, 131, 132, 140, 240, 244, 281 | HEA 110, 112 |
| AST 151, 151A, 152, 152A | HIS 111, 112, 117, 121, 122, 131, 132, 161, 162,167, 216, 221, 222, 226, 231, 236, 242, 251, 252, 271 |
| BUS 110, 115, 228 | JOU 110, 242 |
| CHM 151, 152, 251, 252, 261 | LAT 111, 112, 181, 182, 211, 212, 281, 282 |
| COM 110, 111, 120, 130, 231, 232, 233, 251 | PED 110, 121, 128, 130, 138, 139, 143, 175, 176, 177 |
| CSC 120, 130, 134, 136 | PHI 210, 215, 220, 221, 230, 240 |
| DFT 170 | PHY 151, 152, 153, 251, 252 |
| ECO 151, 251, 252 | PSY 150, 237, 239, 241, 246, 259, 263, 281 |
| EDU 216 | REL 110, 111, 112, 211, 212 |
| EGR 150, 220 | SPA 111, 112, 141, 151, 161, 181, 182, 211, 212, 221, 281, 282 |
| FRE 111, 112, 141, 151, 161, 181, 182, 211, 212, 221, 281, 282 | |
### ASSOCIATE IN SCIENCE — A10400
### OFFICIAL CURRICULUM SCHEDULE

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas.</td>
<td></td>
</tr>
<tr>
<td>One literature course is required; select from</td>
<td></td>
</tr>
<tr>
<td>the following: ENG 131, 231, 232, 241, 242, 261, 262.</td>
<td></td>
</tr>
<tr>
<td>Select 2 additional courses from 2 of the following</td>
<td></td>
</tr>
<tr>
<td>discipline areas:</td>
<td></td>
</tr>
<tr>
<td>ART 111, 114, 115, 116, 117</td>
<td></td>
</tr>
<tr>
<td>COM 110, 120, 231</td>
<td></td>
</tr>
<tr>
<td>DRA 111, 112, 115, 122, 126</td>
<td></td>
</tr>
<tr>
<td>FRE 111 (and 181)</td>
<td></td>
</tr>
<tr>
<td>HUM 110, 115, 130, 211, 212, or 220</td>
<td></td>
</tr>
<tr>
<td>MUS 110, 112, 113, 114, 213</td>
<td></td>
</tr>
<tr>
<td>PHI 210, 215, 220, 221, 240</td>
<td></td>
</tr>
<tr>
<td>REL 110, 111, 112, 211, 212</td>
<td></td>
</tr>
<tr>
<td>SPA 111 (and 181)</td>
<td></td>
</tr>
<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas.</td>
<td></td>
</tr>
<tr>
<td>One history course is required; select from the</td>
<td></td>
</tr>
<tr>
<td>following: HIS 111, 112, 121, 122, 131, 132.</td>
<td></td>
</tr>
<tr>
<td>Select 2 additional courses from 2 of the following</td>
<td></td>
</tr>
<tr>
<td>discipline areas:</td>
<td></td>
</tr>
<tr>
<td>ANT 210</td>
<td></td>
</tr>
<tr>
<td>ECO 251, 252</td>
<td></td>
</tr>
<tr>
<td>GEO 111</td>
<td></td>
</tr>
<tr>
<td>POL 110, 120, 210</td>
<td></td>
</tr>
<tr>
<td>PSY 150</td>
<td></td>
</tr>
<tr>
<td>SOC 210, 213, 220, 225</td>
<td></td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td>8</td>
</tr>
<tr>
<td>Select one of the following sequences.</td>
<td></td>
</tr>
<tr>
<td>BIO 111 and 112</td>
<td></td>
</tr>
<tr>
<td>CHM 151 and 152</td>
<td></td>
</tr>
<tr>
<td>PHY 151 and 152</td>
<td></td>
</tr>
<tr>
<td>PHY 251 and 252</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>6</td>
</tr>
<tr>
<td>MAT 171 (and 171A), 172 (and 172A)</td>
<td></td>
</tr>
<tr>
<td>Higher mathematics courses may be substituted if</td>
<td></td>
</tr>
<tr>
<td>placement warrants.</td>
<td></td>
</tr>
<tr>
<td><strong>Additional Natural Sciences/Mathematics</strong></td>
<td>6</td>
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<tr>
<td>AST 111, 111A, 151, 151A, 152, 152A</td>
<td></td>
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<tr>
<td>BIO 110, 111, 112, 120, 130, 140, 140A</td>
<td>(You may not</td>
</tr>
<tr>
<td>CHM 151, 152</td>
<td>select both BIO 110 and BIO 111.)</td>
</tr>
<tr>
<td>GEL 111, 113, 120, 230</td>
<td></td>
</tr>
<tr>
<td>MAT151 (and 151A) or 155 (and 155A), 175 (and</td>
<td></td>
</tr>
<tr>
<td>175A), 271, 272, 273 (You may not select both</td>
<td></td>
</tr>
<tr>
<td>MAT 151/151A and MAT 155/155A.)</td>
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</tr>
<tr>
<td>PHY 151, 152, 251, 252 (You may not select both</td>
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<tr>
<td>PHY 151/152 and PHY 251/252.)</td>
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<tr>
<td><strong>Mathematics, Natural Sciences, or Computer Science</strong></td>
<td>14</td>
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<tr>
<td>Electives</td>
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<tr>
<td>A minimum of 14 hours in mathematics, natural</td>
<td></td>
</tr>
<tr>
<td>sciences, or computer sciences is required</td>
<td></td>
</tr>
<tr>
<td>AST 111, 111A, 151, 151A, 152, 152A</td>
<td></td>
</tr>
<tr>
<td>BIO 110, 111, 112, 120, 130, 140, 140A, 145, 150, 168,</td>
<td></td>
</tr>
<tr>
<td>169, 230, 231, 232, 242, 243, 250, 275 (You</td>
<td></td>
</tr>
<tr>
<td>may not select both BIO 110 and BIO 111.)</td>
<td></td>
</tr>
<tr>
<td>CHM 151, 152, 251, 252, 261</td>
<td></td>
</tr>
<tr>
<td>CIS 110, 115</td>
<td></td>
</tr>
<tr>
<td>CSC 120, 130, 134, 136, 151</td>
<td></td>
</tr>
<tr>
<td>GEL 111, 113, 120, 230</td>
<td></td>
</tr>
<tr>
<td>MAT 151 (and 151A) or 155 (and 155A), 167 (and</td>
<td></td>
</tr>
<tr>
<td>167A), 175 (and 175A), 271, 272, 273, 280, 285</td>
<td></td>
</tr>
<tr>
<td>(You may not select both MAT 151/151A and MAT</td>
<td></td>
</tr>
<tr>
<td>155/155A.)</td>
<td></td>
</tr>
<tr>
<td>PHY 151, 152, 251, 252 (You may not select both</td>
<td></td>
</tr>
<tr>
<td>PHY 151/152 and PHY 251/252.)</td>
<td></td>
</tr>
<tr>
<td><strong>Other Electives</strong></td>
<td>6</td>
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<tr>
<td>Select from A.S. Course List.</td>
<td></td>
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<tr>
<td><strong>Graduation Requirements</strong></td>
<td>64 Credit Hours</td>
</tr>
<tr>
<td>A minimum of 14 hours in mathematics, natural</td>
<td></td>
</tr>
<tr>
<td>sciences, or computer sciences is required</td>
<td></td>
</tr>
<tr>
<td>AST 111, 111A, 151, 151A, 152, 152A</td>
<td></td>
</tr>
<tr>
<td>BIO 110, 111, 112, 120, 130, 140, 140A, 145, 150, 168,</td>
<td></td>
</tr>
<tr>
<td>169, 230, 231, 232, 242, 243, 250, 275 (You</td>
<td></td>
</tr>
<tr>
<td>may not select both BIO 110 and BIO 111.)</td>
<td></td>
</tr>
<tr>
<td>CHM 151, 152, 251, 252, 261</td>
<td></td>
</tr>
<tr>
<td>CIS 110, 115</td>
<td></td>
</tr>
<tr>
<td>CSC 120, 130, 134, 136, 151</td>
<td></td>
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<tr>
<td>GEL 111, 113, 120, 230</td>
<td></td>
</tr>
<tr>
<td>MAT 151 (and 151A) or 155 (and 155A), 167 (and</td>
<td></td>
</tr>
<tr>
<td>167A), 175 (and 175A), 271, 272, 273, 280, 285</td>
<td></td>
</tr>
<tr>
<td>(You may not select both MAT 151/151A and MAT</td>
<td></td>
</tr>
<tr>
<td>155/155A.)</td>
<td></td>
</tr>
<tr>
<td>PHY 151, 152, 251, 252 (You may not select both</td>
<td></td>
</tr>
<tr>
<td>PHY 151/152 and PHY 251/252.)</td>
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</tr>
<tr>
<td><strong>Graduation Requirements</strong></td>
<td>64 Credit Hours</td>
</tr>
</tbody>
</table>

Wake Technical Community College
COURSE LIST

ASSOCIATE IN SCIENCE

ACC 120, 121

ANT 210, 220, 221, 230, 230A, 240

ART 111, 113, 114, 115, 116, 117, 121, 122, 130, 131, 132, 140, 240, 244, 281

AST 111, 111A, 151, 151A, 152, 152A


BUS 110, 115

CHM 151, 152, 251, 252, 261

CIS 110, 115

CJC 111, 121, 141

COM 110, 111, 120, 130, 231, 232, 233, 251

CSC 120, 130, 134, 136, 151

DFT 170

DRA 111, 112, 115, 120, 122, 124, 126,128, 130, 131, 140, 141

ECO 151, 251, 252

EDU 216

EGR 150, 210, 211, 212, 213, 220, 225, 228, 230


FRE 111 (and 181), 112 and (182), 141, 151, 161, 211 (and 281) 212 (and 282)

GEL 111, 113, 120, 230

GEO 111

HEA 110, 112

HIS 111, 112, 117, 121, 122, 131, 132, 161, 162,167, 216, 221, 222, 223, 226, 236, 251, 252

HUM 110, 115, 130, 160, 161, 170, 211, 212, 220, 230

JOU 110

MAT 141 (and 141A), 142 (and 142A), 151 (and 151A), 155 (and 155A), 167 (and 167A), 171A, 172A, 175 (and 175A), 271, 272, 273, 280, 285


PED 110, 121, 128, 130, 138, 139, 143, 175, 176, 177

PHI 210, 215, 220, 221, 230, 240

PHY 151, 152, 153, 251, 252

POL 110, 120, 130, 210

PSY 150, 237, 239, 241, 246, 259, 263, 281

REL 110, 111, 112, 211, 212

SOC 210, 213, 220, 225, 242, 252

SPA 111 (and 181), 112 (and 182), 141, 151, 161, 211 (and 281), 212 (and 282), 221
## ASSOCIATE IN SCIENCE—Pre-Major: Engineering—A1040D
### OFFICIAL CURRICULUM SCHEDULE

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas.</td>
<td></td>
</tr>
<tr>
<td>One literature course is required; select from the following: ENG 131, 231, 232, 241, 261, 262.</td>
<td></td>
</tr>
<tr>
<td>Select 2 additional courses from 2 of the following discipline areas:</td>
<td></td>
</tr>
<tr>
<td>ART 111, 114, 115, 116, 117</td>
<td></td>
</tr>
<tr>
<td>COM 110, 120, 231</td>
<td></td>
</tr>
<tr>
<td>DRA 111, 112, 115, 122, 126</td>
<td></td>
</tr>
<tr>
<td>FRE 111 (and 181)</td>
<td></td>
</tr>
<tr>
<td>HUM 110, 115, 130, 160, 211, 212, 220</td>
<td></td>
</tr>
<tr>
<td>MUS 110, 112, 113, 114, 213</td>
<td></td>
</tr>
<tr>
<td>PHI 210, 215, 220, 221, 240</td>
<td></td>
</tr>
<tr>
<td>REL 110, 111, 112, 211, 212</td>
<td></td>
</tr>
<tr>
<td>SPA 111 (and 181)</td>
<td></td>
</tr>
<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas.</td>
<td></td>
</tr>
<tr>
<td>One history course is required; select from the following: HIS 111, 112, 121, 122, 131, 132.</td>
<td></td>
</tr>
<tr>
<td>Select 2 additional courses from two of the following discipline areas:</td>
<td></td>
</tr>
<tr>
<td>ANT 210</td>
<td></td>
</tr>
<tr>
<td>ECO 251, 252 (One ECO course is recommended.)</td>
<td></td>
</tr>
<tr>
<td>GEO 111</td>
<td></td>
</tr>
<tr>
<td>POL 110, 120, 210</td>
<td></td>
</tr>
<tr>
<td>PSY 150</td>
<td></td>
</tr>
<tr>
<td>SOC 210, 213, 220, 225</td>
<td></td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td>12</td>
</tr>
<tr>
<td>The following courses are required:</td>
<td></td>
</tr>
<tr>
<td>CHM 151</td>
<td></td>
</tr>
<tr>
<td>PHY 251</td>
<td></td>
</tr>
<tr>
<td>PHY 252</td>
<td></td>
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<tr>
<td><strong>Mathematics</strong></td>
<td>8</td>
</tr>
<tr>
<td>The following courses are required:</td>
<td></td>
</tr>
<tr>
<td>MAT 271 and MAT 272</td>
<td></td>
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</tbody>
</table>

### Other Required Hours ....................................20-21
- MAT 273 and MAT 285
- One of the following courses is required: CSC 134 or CSC 136 or CSC 151
- Students must select one of the following courses: CHM 152 or DFT 170 or EGR 220
- An additional 7 hours of approved college transfer courses are required. Choose from the following:
  - ACC 120, 121
  - ANT 210, 220, 221, 230, 230A, 240
  - ART 111, 113, 114, 115, 116, 117, 121, 122, 130, 131, 132, 140, 240, 244, 281
  - AST 111, 111A, 151, 151A, 152, 152A
  - BUS 110, 115
  - CHM 152, 251, 252, 261
  - CIS 110, 115
  - CJC 111
  - COM 110, 111, 120, 130, 231, 232, 233, 251
  - CSC 120, 130, 134, 136, 151
  - DFT 170
  - DRA 111, 115, 120, 121, 122, 124, 126, 128, 130, 131, 140, 141
  - ECO 251, 152
  - EDU 216
  - EGR 150, 210, 211, 212, 213, 220, 225, 228, 230
  - FRE 111 (and 181), 112 and (182), 211 (and 281) 212 (and 282)
  - GEL 113, 120, 230
  - HEA 110, 112
  - HIS 111, 112, 117, 121, 131, 132, 161, 162, 167, 216, 221, 222, 223, 226, 236, 251, 252
  - HUM 110, 115, 130, 160, 161, 170, 211, 212, 220, 230
  - JOU 110
  - MAT 151 (and 151A) or 155 (and 155A), 167, 280
  - MUS 110, 111, 112, 131, 132
  - PED 110, 121, 128, 130, 138, 139, 143, 175, 176, 177
  - PHI 210, 215, 220, 221, 230, 240
  - POL 110, 120, 130, 210
  - PSY 150, 237, 239, 241, 246, 259, 263, 281
  - REL 110, 111, 112, 211, 212
  - SOC 210, 213, 220, 225, 242, 252
  - SPA 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)

### Graduation Requirements ..............................64-65 Credit Hours

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Wake Technical Community College

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2006-2007 Catalog
Volume XVIII No. 3 July 2007
GENERAL EDUCATION

The General Education curriculum is designed for individuals who wish to broaden their education, with emphasis on personal growth, intellectual enrichment, and improvement in general knowledge. The curriculum provides an introduction to the liberal arts (general education) in a program that can be tailored to the student's personal interests rather than to specific technical or professional requirements.

The Associate in General Education is awarded upon completion of 64 hours, including the minimum in each of the areas on the curriculum outline.

ASSOCIATE IN GENERAL EDUCATION — A10300
OFFICIAL CURRICULUM SCHEDULE

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>English/Communications</td>
<td>6</td>
</tr>
<tr>
<td>ENG 111 Expository Writing (3 0 3)</td>
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</tr>
<tr>
<td>ENG 114 Professional Research and Reporting (3 0 3)</td>
<td></td>
</tr>
<tr>
<td>Humanities/Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>Select from courses in art, foreign language, humanities, literature, music, philosophy, and religion.</td>
<td></td>
</tr>
<tr>
<td>Social/Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Select from courses in economics, history, political science, psychology, and sociology.</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences/Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Select from courses in biology, chemistry, geology, physics, and mathematics.</td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>2</td>
</tr>
<tr>
<td>CIS 111 Basic PC Literacy (1 2 2)</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>47</td>
</tr>
<tr>
<td>Select from associate degree level courses in English/communications, humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics, or any specialty courses as selected by the student and approved by the student's advisor.</td>
<td></td>
</tr>
</tbody>
</table>

Graduation Requirements ......................64 Credit Hours

ASSOCIATE IN GENERAL EDUCATION
Vocational and Technical Instructors' Option
This option is designed for teachers of vocational and technical programs in technical colleges, trade schools, high schools, and similar institutions, as well as for practitioners of specific vocations. In addition to completing the core requirements for the Associate in General Education degree, the student may receive credit for previous training, experience, and formal study in the student's area of specialization. A maximum of sixteen hours of elective credit may be granted as follows:

I. Sixteen semester hours of credit for full-time trade school instruction (twelve months/1440 hours) in one special skilled area. Certified by transcript, diploma, or letter from trade school. Maximum sixteen semester hours of credit.

II. One semester hour of credit per ninety hours of full-time trade school instruction for programs of less than one-year duration. Certified by transcript, diploma, or letter from trade school. Maximum sixteen semester hours of credit.

III. One semester hour of credit per sixty hours of special short course instruction by a company-sponsored school. Certified by diploma, certificate, or letter from company school. Maximum three semester hours of credit.

IV. Three semester hours of credit for a full year of employment (outside of Wake Technical Community College) in a situation where teaching was the primary employment. Maximum three semester hours of credit.

V. Five semester hours of credit for each full year of employment at Wake Technical Community College with teaching the specialty courses as the primary responsibility. Maximum fifteen semester hours of credit.

VI. One semester hour of credit for each full year of employment in the specialty occupation qualified to teach. Maximum five semester hours of credit.

Credits earned in industrial and/or vocational programs offered by regionally-accredited, collegiate-level institutions are acceptable in meeting requirements in the area of specialization.

The student will be required to provide sufficient documentation to substantiate the suitability of previous training, experience, and formal study for credit.
ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

ACCOUNTING

The Accounting curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth in the accounting profession. Using the “language of business,” accountants assemble and analyze, process, and communicate essential information about financial operations.

In addition to course work in accounting principles, theories, and practice, students will study business law, finance, management, and economics. Related skills are developed through the study of communications, computer applications, financial analysis, critical thinking skills, and ethics.

Graduates should qualify for entry-level accounting positions in many types of organizations including accounting firms, small businesses, manufacturing firms, banks, hospitals, school systems, and governmental agencies. With work experience and additional education, an individual may advance in the accounting profession.

ACCOUNTING — A25100

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
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</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC 120</td>
<td>Principles of Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACC 121</td>
<td>Principles of Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACC 129</td>
<td>Individual Income Taxes</td>
<td>3</td>
</tr>
<tr>
<td>ACC 130</td>
<td>Business Income Taxes</td>
<td>3</td>
</tr>
<tr>
<td>ACC 140</td>
<td>Payroll Accounting</td>
<td>2</td>
</tr>
<tr>
<td>ACC 149</td>
<td>Introduction to Accounting Spreadsheets</td>
<td>2</td>
</tr>
<tr>
<td>ACC 150</td>
<td>Accounting Software Applications</td>
<td>2</td>
</tr>
<tr>
<td>ACC 215</td>
<td>Ethics in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACC 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACC 225</td>
<td>Cost Accounting</td>
<td>3</td>
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<tr>
<td>ACC 227</td>
<td>Practices in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 240</td>
<td>Governmental and Not-for-Profit Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 268</td>
<td>Information Systems and Internal Controls</td>
<td>3</td>
</tr>
<tr>
<td>BUS 115</td>
<td>Business Law I</td>
<td>3</td>
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<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>BUS 225</td>
<td>Business Finance</td>
<td>3</td>
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<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
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<tr>
<td>ECO 151</td>
<td>Survey of Economics</td>
<td>3</td>
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</table>

Graduation Requirements ............................................. 72 Credit Hours

ADVERTISING AND GRAPHIC DESIGN — A30100

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
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Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 110</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 111</td>
<td>Typography II</td>
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</tr>
<tr>
<td>GRD 117</td>
<td>Design Career Exploration</td>
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<tr>
<td>GRD 121</td>
<td>Drawing Fundamentals I</td>
<td>2</td>
</tr>
<tr>
<td>GRD 131</td>
<td>Illustration I</td>
<td>2</td>
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<tr>
<td>GRD 141</td>
<td>Graphic Design I</td>
<td>4</td>
</tr>
<tr>
<td>GRD 142</td>
<td>Graphic Design II</td>
<td>4</td>
</tr>
<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
<td>3</td>
</tr>
<tr>
<td>GRD 152</td>
<td>Computer Design Technology I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 153</td>
<td>Computer Design Technology II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 160</td>
<td>Photo Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 241</td>
<td>Graphic Design III</td>
<td>4</td>
</tr>
<tr>
<td>GRD 263</td>
<td>Illustrating Imaging</td>
<td>3</td>
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<tr>
<td>GRD 265</td>
<td>Digital Print Production</td>
<td>3</td>
</tr>
<tr>
<td>GRD 280</td>
<td>Portfolio Design</td>
<td>4</td>
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<tr>
<td>GRD 282</td>
<td>Advertising Copywriting</td>
<td>2</td>
</tr>
<tr>
<td>GRD 285</td>
<td>Client/Media Relations</td>
<td>2</td>
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</table>

Major Electives List 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 161</td>
<td>Photo Fundamentals II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 162</td>
<td>Photography Portfolio</td>
<td>3</td>
</tr>
<tr>
<td>GRD 193</td>
<td>Selected Topics in Advertising and Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>GRD 230</td>
<td>Technical Illustration</td>
<td>2</td>
</tr>
<tr>
<td>GRD 232</td>
<td>Fashion Illustration</td>
<td>2</td>
</tr>
<tr>
<td>GRD 233</td>
<td>Product Illustration</td>
<td>2</td>
</tr>
<tr>
<td>GRD 242</td>
<td>Graphic Design IV</td>
<td>4</td>
</tr>
<tr>
<td>GRD 243</td>
<td>Graphic Design V</td>
<td>4</td>
</tr>
<tr>
<td>GRD 249</td>
<td>Advanced Design Practice</td>
<td>4</td>
</tr>
<tr>
<td>WEB 111</td>
<td>Introduction to Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 140</td>
<td>Web Development Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduation Requirements ............................................. 71 Credit Hours

ADVERTISING AND GRAPHIC DESIGN

The Advertising and Graphic Design curriculum is designed to provide students with knowledge and skills necessary for employment in the graphic design profession that emphasizes design, advertising, illustration, and digital and multimedia preparation of printed and electronic promotional materials.

Students will be trained in the development of concept and design for promotional materials, such as newspaper and magazine advertisements, posters, folders, letterheads, corporate symbols, brochures, booklets, preparation of art for printing, lettering and typography, photography, and electronic media.

Graduates should qualify for employment opportunities with graphic design studios, advertising agencies, printing companies, department stores, and a wide variety of manufacturing industries, newspapers, and businesses with in-house graphics operations.
AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety.

AAS degree graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems and should be able to demonstrate an understanding of system selection and balance and advanced systems.

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — A35100

<table>
<thead>
<tr>
<th>General Education Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 110 Freshman Composition</td>
</tr>
<tr>
<td>COM 120 Interpersonal Communication</td>
</tr>
<tr>
<td>HUM 121 The Nature of America</td>
</tr>
<tr>
<td>PHY 121 Applied Physics I</td>
</tr>
<tr>
<td>PSY 118 Interpersonal Psychology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHR 110 Introduction to Refrigeration</td>
</tr>
<tr>
<td>AHR 111 HVACR Electricity</td>
</tr>
<tr>
<td>AHR 112 Heating Technology</td>
</tr>
<tr>
<td>AHR 113 Comfort Cooling</td>
</tr>
<tr>
<td>AHR 114 Heat Pump Technology</td>
</tr>
<tr>
<td>AHR 115 Refrigeration Systems</td>
</tr>
<tr>
<td>AHR 130 HVAC Controls</td>
</tr>
<tr>
<td>AHR 133 HVAC Servicing</td>
</tr>
<tr>
<td>AHR 151 HVAC Duct Systems I</td>
</tr>
<tr>
<td>AHR 152 HVAC Duct Systems II</td>
</tr>
<tr>
<td>AHR 160 Refrigerant Certification</td>
</tr>
<tr>
<td>AHR 180 HVAC Customer Relations</td>
</tr>
<tr>
<td>AHR 210 Residential Building Code</td>
</tr>
<tr>
<td>AHR 211 Residential System Design</td>
</tr>
<tr>
<td>AHR 212 Advanced Comfort Systems</td>
</tr>
<tr>
<td>AHR 215 Commercial HVAC Controls</td>
</tr>
<tr>
<td>AHR 225 Commercial System Design</td>
</tr>
<tr>
<td>AHR 240 Hydronic Heating</td>
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<td>AHR 245 Chiller Systems</td>
</tr>
<tr>
<td>AHR 250 HVAC System Diagnostics</td>
</tr>
<tr>
<td>AHR 263 Energy Management</td>
</tr>
<tr>
<td>WLD 112 Basic Welding Processes</td>
</tr>
</tbody>
</table>

Graduation Requirements | 75 Credit Hours

ARCHITECTURAL TECHNOLOGY

The Architectural Technology curriculum provides individuals with knowledge and skills that can lead to employment in the field of architecture or one of the associated professions.

Students receive instruction in construction document preparation, materials and methods, environmental and structural systems, building codes and specifications, and computer applications as well as complete a design project. Optional courses may be provided to suit specific career needs.

ARCHITECTURAL TECHNOLOGY — A40100

<table>
<thead>
<tr>
<th>General Education Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 Expository Writing</td>
</tr>
<tr>
<td>ENG 114 Professional Research and Reporting</td>
</tr>
<tr>
<td>MAT 121 Algebra and Trigonometry</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>Social/Behavioral Science Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 111 Introduction to Architectural Technology</td>
</tr>
<tr>
<td>ARC 112 Construction Materials and Methods</td>
</tr>
<tr>
<td>ARC 113 Residential Architectural Technology</td>
</tr>
<tr>
<td>ARC 114 Architectural CAD</td>
</tr>
<tr>
<td>ARC 114A Architectural CAD Lab</td>
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<tr>
<td>ARC 131 Building Codes</td>
</tr>
<tr>
<td>ARC 211 Light Construction Technology</td>
</tr>
<tr>
<td>ARC 213 Design Project</td>
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<tr>
<td>ARC 220 Advanced Architectural CAD</td>
</tr>
<tr>
<td>ARC 230 Environmental Systems</td>
</tr>
<tr>
<td>ARC 240 Site Planning</td>
</tr>
<tr>
<td>ARC 250 Survey of Architecture</td>
</tr>
<tr>
<td>ARC 264 Digital Architecture</td>
</tr>
<tr>
<td>CIV 110 Statics/Strength of Materials</td>
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<table>
<thead>
<tr>
<th>Major Electives</th>
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<tbody>
<tr>
<td>Select 8 hours from the following courses</td>
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<tr>
<td>ARC 212 Commercial Construction Technology</td>
</tr>
<tr>
<td>ARC 221 Architectural 3-D CAD</td>
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<tr>
<td>ARC 241 Contract Administration</td>
</tr>
<tr>
<td>ARC 261 Solar Technology</td>
</tr>
<tr>
<td>ARC 293 Selected Topics in Architectural Technology</td>
</tr>
<tr>
<td>CIV 125 Civil/Surveying CAD</td>
</tr>
<tr>
<td>CIV 230 Construction Estimating</td>
</tr>
<tr>
<td>EGR 115 Introduction to Technology</td>
</tr>
<tr>
<td>LAR 230 Principles of Horticulture I</td>
</tr>
<tr>
<td>LAR 231 Principles of Horticulture II</td>
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<td>SRV 110 Surveying I</td>
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<table>
<thead>
<tr>
<th>Co-op Work Experience 1</th>
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<tbody>
<tr>
<td>Select 2 hours from the following courses</td>
</tr>
<tr>
<td>COE 112 Co-op Work Experience I</td>
</tr>
<tr>
<td>COE 111 Co-op Work Experience I</td>
</tr>
<tr>
<td>COE 121 Co-op Work Experience II</td>
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<table>
<thead>
<tr>
<th>Co-op Work Experience 2</th>
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</thead>
<tbody>
<tr>
<td>Select 2 hours from the following courses</td>
</tr>
<tr>
<td>COE 122 Co-op Work Experience II</td>
</tr>
<tr>
<td>COE 131 Co-op Work Experience III</td>
</tr>
<tr>
<td>COE 211 Co-op Work Experience IV</td>
</tr>
</tbody>
</table>

Graduation Requirements | 68 Credit Hours
ASSOCIATE DEGREE NURSING

The Associate Degree Nursing (non-integrated) curriculum provides individuals with the knowledge and skills necessary to provide nursing care to clients and groups of clients throughout the life span in a variety of settings.

Courses will include content related to the nurse’s role as provider of nursing care, as manager of care, as member of the discipline of nursing, and as a member of the interdisciplinary team.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN), which is required for practice as a Registered Nurse. Employment opportunities include hospitals, long-term care facilities, clinics, physician’s offices, industry, and community agencies.

ASSOCIATE DEGREE NURSING — A45120

General Education Courses

BIO 165 Anatomy and Physiology I ................................. 4
BIO 166 Anatomy and Physiology II ................................. 4
ENG 111 Expository Writing ............................................. 3
ENG 112 Argument-Based Research ................................. 3
PSY 110 Life Span Development ....................................... 3
Humanities/Fine Arts Elective .......................................... 3

Major Courses

BIO 155 Nutrition ............................................................ 3
BIO 175 General Microbiology .......................................... 3
BIO 271 Pathophysiology .................................................. 3
NUR 115 Fundamentals of Nursing ................................. 5
NUR 117 Pharmacology ..................................................... 2
NUR 125 Maternal-Child Nursing ...................................... 8
NUR 133 Nursing Assessment ............................................ 3
NUR 135 Adult Nursing I ............................................... 9
NUR 185 Mental Health Nursing ...................................... 5
NUR 235 Adult Nursing II............................................... 10

Major Electives

Select 3 hours from the following courses

NUR 116 Nursing of Older Adults .................................... 4
NUR 188 Nursing in the Community .................................... 3

Graduation Requirements ............................................... 74 Credit Hours

AUTOMOTIVE SYSTEMS TECHNOLOGY

The Automotive Systems Technology curriculum prepares individuals for employment as automotive service technicians. It provides an introduction to automotive careers and increases preparedness to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

Classroom and lab experiences integrate technical and academic coursework. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains. Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

BUSINESS ADMINISTRATION

The Business Administration curriculum is designed to introduce students to the various aspects of the free enterprise system. Students will be provided with a fundamental knowledge of business functions, processes, and an understanding of business organizations in today's global economy.

Course work includes business concepts such as accounting, business law, economics, management, and marketing. Skills related to the application of these concepts are developed through the study of computer applications, communication, team building, and decision making.

Through these skills, students will have a sound business education base for lifelong learning. Graduates are prepared for employment opportunities in government agencies, financial institutions, and large to small business or industry.

BUSINESS ADMINISTRATION — A25120

General Education Courses

ENG 111 Expository Writing ............................................. 3
ENG 114 Professional Research and Reporting .................. 3
MAT 115 Mathematical Models ......................................... 3
PSY 118 Interpersonal Psychology .................................. 3
Humanities/Fine Arts Elective ......................................... 3

Major Courses

ACC 120 Principles of Financial Accounting .................... 4
ACC 121 Principles of Managerial Accounting .................. 4
BUS 110 Introduction to Business ................................... 3
BUS 115 Business Law I .................................................. 3
BUS 116 Business Law II ................................................. 3

2006-2007 Catalog
BUSINESS ADMINISTRATION/ELECTRONIC COMMERCE

Electronic Commerce is a concentration under the title of Business Administration. This curriculum is designed to prepare individuals for a career in the Internet economy.

Course work includes topics related to electronic business, Internet strategy in business, basic business principles in the world of E-Commerce. Students will be able to demonstrate the ability to identify and analyze such functional issues as planning, technical systems, marketing, security, finance, law, design, implementation, assessment and policy issues at an entry level.

Graduates from this program will have a sound business educational base for life long learning. Graduates are prepared for employment opportunities in government agencies, financial institutions, and small to medium size businesses or industry.

BUSINESS ADMINISTRATION/ELECTRONIC COMMERCE — A2512I

General Education Courses

ENG 111 Expository Writing..................................................3
ENG 114 Professional Research and Reporting........................3
MAT 115 Mathematical Models .............................................3
PSY 118 Interpersonal Psychology .........................................3

Humanities/Fine Arts Elective .............................................3

Major Courses

ACC 120 Principles of Financial Accounting .........................4
BUS 110 Introduction to Business .........................................3
BUS 115 Business Law I .......................................................3
BUS 137 Principles of Management ......................................3
BUS 225 Business Finance ....................................................3
CIS 110 Introduction to Computers ........................................3

ECM 168 Electronic Business ................................................3
ECM 210 Introduction to E-Commerce ....................................3
ECM 220 E-Commerce Planning and Implementation ............3
ECM 230 Capstone Project ....................................................3
ECO 151 Survey of Economics .............................................3
MKT 223 Customer Service ..................................................3

or

BUS 151 People Skills .........................................................3
MKT 120 Principles of Marketing ...........................................3
WEB 110 Internet/Web Fundamentals ...................................3
WEB 111 Introduction to Web Graphics ..................................3
WEB 140 Web Development Tools ....................................3

Graduation Requirements .................................................73 Credit Hours

BUSINESS ADMINISTRATION/ HUMAN RESOURCES MANAGEMENT

Human Resources Management is a concentration under the curriculum title of Business Administration. The curriculum is designed to meet the demands of business and service agencies. The objective is the development of generalists and specialists in the administration, training, and management of human resources.

Course work includes studies in management, interviewing, placement, needs assessment, planning, compensation and benefits, and training techniques. Also included are topics such as people skills, learning approaches, skills building, and development of instructional and training materials.

Graduates from this program will have a sound business educational base for lifelong learning. Students will be prepared for employment opportunities in personnel, training, and other human resources development areas.

BUSINESS ADMINISTRATION/ HUMAN RESOURCES MANAGEMENT — A2512C

General Education Courses

ENG 111 Expository Writing..................................................3
ENG 114 Professional Research and Reporting........................3
MAT 115 Mathematical Models .............................................3
PSY 118 Interpersonal Psychology .........................................3

Humanities/Fine Arts Elective .............................................3

Major Courses

ACC 120 Principles of Financial Accounting .........................4
ACC 140 Payroll Accounting ................................................2
BUS 110 Introduction to Business .........................................3
BUS 115 Business Law I .......................................................3
BUS 137 Principles of Management ......................................3
BUS 153 Human Resource Management ................................
BUS 217 Employment Law and Regulations ..........................3
BUS 225 Business Finance ....................................................3

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Volume XVIII No. 3 July 2007

Wake Technical Community College 80
CIVIL ENGINEERING TECHNOLOGY

The Civil Engineering Technology curriculum provides the application of relevant theory of engineering needed by technicians to carry out planning and supervisory tasks in the construction of transportation systems, residential and commercial buildings, bridges, dams, and water and wastewater treatment systems.

Course work includes the communication and computational skills required to support the fields such as materials testing, structures, estimating, project management, hydraulics, environmental technology, and surveying. Additional course work will cover the operation of computers and application software including computer-aided drafting.

Graduates should qualify for technician-level jobs with both public and private engineering, construction, and surveying agencies.

CIVIL ENGINEERING TECHNOLOGY — A40140

General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Humanities/Fine Arts Elective</td>
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</tr>
<tr>
<td></td>
<td>Social/Behavioral Science Elective</td>
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</table>

Major Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>CIV 110</td>
<td>Statics/Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CIV 111</td>
<td>Soils and Foundations</td>
<td>3</td>
</tr>
<tr>
<td>CIV 125</td>
<td>Civil/Surveying CAD</td>
<td>3</td>
</tr>
<tr>
<td>DFT 120</td>
<td>Advanced CAD</td>
<td>2</td>
</tr>
<tr>
<td>CIV 210</td>
<td>Engineering Materials</td>
<td>2</td>
</tr>
<tr>
<td>CIV 211</td>
<td>Hydraulics and Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>CIV 221</td>
<td>Steel and Timber Design</td>
<td>3</td>
</tr>
<tr>
<td>CIV 230</td>
<td>Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CIV 240</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CIV 250</td>
<td>Civil Engineering Technology Project</td>
<td>2</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>DFT 119</td>
<td>Basic CAD</td>
<td>2</td>
</tr>
<tr>
<td>EGR 115</td>
<td>Introduction to Technology</td>
<td>4</td>
</tr>
<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 223</td>
<td>Applied Calculus</td>
<td>3</td>
</tr>
<tr>
<td>GIS 111</td>
<td>Introduction to GIS</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduation Requirements……………………………………. 69 Credit Hours

COMPUTER ENGINEERING TECHNOLOGY

The Computer Engineering Technology curriculum provides the skills required to install, service, and maintain computers, peripherals, networks, and microprocessor and computer controlled equipment. It includes training in both hardware and software, emphasizing operating systems concepts to provide a unified view of computer systems.

Course work includes mathematics, physics, electronics, digital circuits, and programming, with emphasis on the operation, use, and interfacing of memory and devices to the CPU. Additional topics may include communications, networks, operating systems, programming languages, Internet configuration and design, and industrial applications.

Graduates should qualify for employment opportunities in electronics technology, computer service, computer networks, server maintenance, programming, and other areas requiring a knowledge of electronic and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

COMPUTER ENGINEERING TECHNOLOGY — A40160

General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET 110</td>
<td>Introduction to Computer Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>CET 111</td>
<td>Computer Upgrade/Repair I</td>
<td>3</td>
</tr>
<tr>
<td>CET 193</td>
<td>Selected Topics in CET</td>
<td>3</td>
</tr>
<tr>
<td>CET 222</td>
<td>Computer Architecture</td>
<td>2</td>
</tr>
<tr>
<td>CET 251</td>
<td>Software Engineering Principles</td>
<td>4</td>
</tr>
<tr>
<td>CSC 133</td>
<td>C Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 233</td>
<td>Advanced C Programming</td>
<td>3</td>
</tr>
<tr>
<td>EGR 285</td>
<td>Design Project</td>
<td>2</td>
</tr>
<tr>
<td>ELC 131</td>
<td>DC/AC Circuit Analysis</td>
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<tr>
<td>ELD 131</td>
<td>Electronic Devices</td>
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<tr>
<td>ELD 133</td>
<td>Digital Electronics</td>
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</tr>
<tr>
<td>ELD 232</td>
<td>Introduction to Microprocessors</td>
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<tr>
<td>ELD 233</td>
<td>Microprocessor Systems</td>
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<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
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<tr>
<td>NOS 110</td>
<td>Operating System Concepts</td>
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<tr>
<td>NOS 120</td>
<td>Linux/UNIX Single User</td>
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<tr>
<td>PHY 151</td>
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<tr>
<td>TNE 111</td>
<td>Campus Networks I</td>
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</table>
COMPUTER INFORMATION TECHNOLOGY

The Computer Information Technology curriculum is designed to prepare graduates for employment with organizations that use computers to process, manage, and communicate information. This is a flexible program, designed to meet community information systems needs.

Course work includes computer systems terminology and operations, logic, operating systems, database, data communications/networking, and related business topics. Studies will provide experience for students to implement, support, and customize industry-standard information systems.

Graduates should qualify for a wide variety of computer-related, entry-level positions that provide opportunities for advancement with increasing experience and ongoing training. Duties may include systems maintenance and troubleshooting, support and training, and business applications design and implementation.

Major Electives List 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>CET 211</td>
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<td>COE 112</td>
<td>Co-op Work Experience I</td>
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<td>CSC 134</td>
<td>C++ Programming</td>
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<td>CSC 139</td>
<td>Visual BASIC Programming</td>
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<td>CSC 151</td>
<td>JAVA Programming</td>
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<td>CSC 245</td>
<td>Advanced C/C++ Programming</td>
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<td>ELN 132</td>
<td>Linear IC Applications</td>
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<tr>
<td>ELN 193</td>
<td>Selected Topics in Electronics</td>
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<td>NOS 220</td>
<td>Linux/UNIX Administration</td>
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<tr>
<td>TNE 121</td>
<td>Campus Networks II</td>
<td>3</td>
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<tr>
<td>TNE 193</td>
<td>Selected Topics in Telecommunications</td>
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<tr>
<td>TNE 261</td>
<td>Internet Development</td>
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Graduation Requirements ............................................. 75 Credit Hours

COMPUTER INFORMATION TECHNOLOGY — A25260

General Education Courses

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<td>ENG 114</td>
<td>Professional Research and Reporting</td>
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<td>HUM 115</td>
<td>Critical Thinking</td>
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<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
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<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
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Major Courses

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<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
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<tr>
<td>CTS 115</td>
<td>Information Systems Business Concept</td>
<td>3</td>
</tr>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>3</td>
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<td>CTS 135</td>
<td>Integrated Software Introduction</td>
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<td>CTS 155</td>
<td>Tech Support Functions</td>
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<td>CTS 220</td>
<td>Advanced Hardware/Software Support</td>
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<td>Advanced Tech Support Functions</td>
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<td>Systems Analysis and Design</td>
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<td>CTS 289</td>
<td>System Support Project</td>
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<td>Database Concepts</td>
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<tr>
<td>NET 110</td>
<td>Data Communications/Networking</td>
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<td>NOS 110</td>
<td>Operating Systems Concepts</td>
<td>3</td>
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<tr>
<td>NOS 130</td>
<td>Windows Single User</td>
<td>3</td>
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<td>NOS 230</td>
<td>Windows Administration I</td>
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<td>SEC 110</td>
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Major Electives List 2

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<td>COE 112</td>
<td>Co-op Work Experience I</td>
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<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
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<td>COE 121</td>
<td>Co-op Work Experience II</td>
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<td>COE 122</td>
<td>Co-op Work Experience II</td>
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<td>COE 131</td>
<td>Co-op Work Experience III</td>
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<td>CTS 130</td>
<td>Spreadsheet</td>
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<td>CTS 210</td>
<td>Computer Ethics</td>
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<td>CTS 235</td>
<td>Integrated Software Advanced</td>
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<td>CTS 240</td>
<td>Project Management</td>
<td>3</td>
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<tr>
<td>CTS 250</td>
<td>User Support and Software Evaluation</td>
<td>3</td>
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<td>NOS 111</td>
<td>Operating System—DOS</td>
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</tr>
<tr>
<td>NOS 120</td>
<td>Linux/UNIX Single User</td>
<td>3</td>
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<tr>
<td>WEB 110</td>
<td>Internet/Web Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduation Requirements ............................................. 71 Credit Hours

COMPUTER PROGRAMMING

This curriculum prepares individuals for employment as computer programmers and related positions through study and applications in computer concepts, logic, programming procedures, languages, generators, operating systems, networking, data management, and business operations.

Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems managers.

COMPUTER PROGRAMMING — A25130

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
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<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
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<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
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<tr>
<td>MAT 145</td>
<td>Analytical Math</td>
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</tbody>
</table>

2006-2007 Catalog
Volume XVIII No. 3 July 2007
CRIMINAL JUSTICE TECHNOLOGY

The Criminal Justice Technology curriculum is designed to provide knowledge of criminal justice systems and operations. Study will focus on local, state, and federal law enforcement, judicial processes, corrections, and security services. The criminal justice system's role within society will be explored.

Emphasis is on criminal justice systems, criminology, juvenile justice, criminal and constitutional law, investigative principles, ethics, and community relations. Additional study may include issues and concepts of government, counseling, communications, computers, and technology.

Employment opportunities exist in a variety of local, state, and federal law enforcement, corrections, and security fields. Examples include police officer, deputy sheriff, county detention officer, state trooper, intensive probation/parole surveillance officer, correctional officer, and loss prevention specialist.

CRIMINAL JUSTICE TECHNOLOGY — A55180

General Education Courses
ENG 111 Expository Writing ..................................................... 3
ENG 112 Argument-Based Research .......................................... 3
MAT 115 Mathematical Models ................................................... 3
Humanities/Fine Arts Elective .................................................... 3
Social/Behavioral Science Elective ............................................. 3

Major Courses
CJC 111 Basic PC Literacy .......................................................... 2
CJC 111 Introduction to Criminal Justice ..................................... 3
CJC 112 Criminalology ............................................................. 3
CJC 113 Juvenile Justice ........................................................... 3
CJC 121 Law Enforcement Operations ...................................... 3
CJC 131 Criminal Law ............................................................. 3
CJC 132 Court Procedure and Evidence .................................... 3
CJC 212 Ethics and Community Relations .................................. 3
CJC 213 Substance Abuse ......................................................... 3
CJC 221 Investigative Principles ................................................ 4
CJC 222 Criminalistics ............................................................. 3
CJC 231 Constitutional Law ....................................................... 3
CJC 232 Civil Liability .............................................................. 3
CJC 293 Selected Topics in Criminal Justice Technology ............ 3

Major Electives
Select 11 hours from the following courses
CJC 114 Investigative Photography ......................................... 2
CJC 120 Interviews/Investigations ............................................. 2
CJC 122 Community Policing .................................................... 3
CJC 141 Corrections ................................................................. 3
CJC 145 Crime Scene CAD ....................................................... 3
CJC 215 Organization and Administration .................................. 3
CJC 223 Organized Crime ......................................................... 3
CJC 251 Forensic Chemistry I .................................................... 4

Graduation Requirements ....................................................... 68 Credit Hours

CULINARY TECHNOLOGY

The Culinary Technology curriculum provides specific training required to prepare students to assume positions as trained culinary professionals in a variety of food service settings including full service restaurants, hotels, resorts, clubs, catering operations, contract food service, and health care facilities.
Course offerings emphasize practical application, a strong theoretical knowledge base, and professionalism and provide the critical competencies to successfully meet industry demands. Courses also include sanitation, food/beverage service and control, baking, garde manager, American/international cuisines, food production, and hospitality supervision.

Graduates should qualify for entry-level positions such as line cook, station chef, and assistant pastry chef. American Culinary Federation certification is available to graduates. With experience, graduates may advance to positions such as sous-chef, executive chef, or food service manager.

**CULINARY TECHNOLOGY — A55200**

**General Education Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
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<tr>
<td>ENG 111</td>
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<td>ENG 114</td>
<td>Professional Research and Reporting</td>
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</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
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<td>HUM 115</td>
<td>Critical Thinking</td>
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**Major Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CIS 110</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
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</tr>
<tr>
<td>COE 122</td>
<td>Co-op Work Experience II</td>
<td>2</td>
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<tr>
<td>CUL 110</td>
<td>Sanitation and Safety</td>
<td>2</td>
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<tr>
<td>CUL 112</td>
<td>Nutrition for Foodservice</td>
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<tr>
<td>CUL 120</td>
<td>Purchasing</td>
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<td>CUL 120A</td>
<td>Purchasing Lab</td>
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<tr>
<td>CUL 125</td>
<td>Hospitality Information Systems</td>
<td>2</td>
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<tr>
<td>CUL 135</td>
<td>Food and Beverage Service</td>
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<td>CUL 135A</td>
<td>Food and Beverage Service Lab</td>
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<tr>
<td>CUL 140</td>
<td>Basic Culinary Skills</td>
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<tr>
<td>CUL 160</td>
<td>Baking I</td>
<td>3</td>
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<tr>
<td>CUL 170</td>
<td>Garde-Manger I</td>
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<tr>
<td>CUL 180</td>
<td>International and American Regional Cuisine</td>
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<td>CUL 240</td>
<td>Advanced Culinary Skills</td>
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<tr>
<td>CUL 250</td>
<td>Classical Cuisine</td>
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<td>CUL 260</td>
<td>Baking II</td>
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<td>CUL 270</td>
<td>Garde-Manger II</td>
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<td>HMR 145</td>
<td>Hospitality Supervision</td>
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<td>SPA 120</td>
<td>Spanish for the Workplace</td>
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**Major Electives**

Select one of the following courses

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<td>CUL 214</td>
<td>Wine Appreciation</td>
<td>2</td>
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<tr>
<td>CUL 280</td>
<td>Pastry and Confections</td>
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<td>CUL 285</td>
<td>Competition Fundamentals</td>
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</table>

**Graduation Requirements** .................................. 74 Credit Hours

**DATABASE MANAGEMENT**

The Database Management curriculum prepares graduates for employment with organizations that use database management system software to process, manage, and communicate information. Additionally, the curriculum provides the student with a foundation to begin professional certification with Microsoft or ORACLE database programs.

Course work includes terminology and design, database administration, backup and recovery, performance and tuning, database programming and tools, and related topics. Studies will provide an opportunity for students to implement, support, and manage industry standard database systems.

Graduates should qualify for a wide variety of database and computer related entry-level positions that provide opportunities for advancement with increasing experience and ongoing training.

**DATABASE MANAGEMENT — A25150**

**General Education Courses**

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<td>ENG 114</td>
<td>Professional Research and Reporting</td>
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<td>HUM 115</td>
<td>Critical Thinking</td>
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**Major Courses**

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<th>Course</th>
<th>Description</th>
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<tr>
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<td>Introduction to Computers</td>
<td>3</td>
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<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
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<td>CSC 119</td>
<td>Visual BASIC Programming</td>
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<td>CSC 239</td>
<td>Advanced Visual BASIC Programming</td>
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<tr>
<td>CTS 115</td>
<td>Information Systems Business Concept</td>
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<tr>
<td>CTS 285</td>
<td>Systems Analysis and Design</td>
<td>3</td>
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<td>DBA 110</td>
<td>Database Concepts</td>
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<td>Database Applications</td>
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<td>DBA 230</td>
<td>Database in Corporate Environments</td>
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**Major Electives List 1**

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<td>CSC 151</td>
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<td>CSC 153</td>
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<td>CTS 220</td>
<td>Oracle Database Programming II</td>
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<tr>
<td>DBA 221</td>
<td>SQL Server Database Programming II</td>
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<tr>
<td>DBA 222</td>
<td>DB2 Database Programming II</td>
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<td>DBA 223</td>
<td>MySQL Database Programming II</td>
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<td>SAS Database Programming II</td>
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<td>WEB 115</td>
<td>Web Markup and Scripting</td>
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<td>PHP Programming</td>
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<td>WEB 186</td>
<td>XML Technology</td>
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**Major Electives List 2**

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<td>Selected Topics in Database Management: Oracle Internet Application</td>
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<td>DBA 260</td>
<td>Oracle DBMS Administration</td>
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<td>DBA 261</td>
<td>SQL Server DBMS Administration</td>
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<td>DBA 262</td>
<td>DB2 DBMS Administration</td>
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</tr>
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<td>DBA 263</td>
<td>MySQL DBMS Administration</td>
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</tr>
<tr>
<td>DBA 264</td>
<td>SAS DBMS Administration</td>
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<td>Windows Single User</td>
<td>3</td>
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<td>WEB 140</td>
<td>Web Development Tools</td>
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**Major Electives List 3**

Select 3 hours from the following courses

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<th>Description</th>
<th>Hours</th>
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<td>Selected Topics in Database Management: Oracle Optimization</td>
<td>3</td>
</tr>
<tr>
<td>DBA 270</td>
<td>Oracle Performance Tuning</td>
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</tr>
<tr>
<td>DBA 271</td>
<td>SQL Server Performance Tuning</td>
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</tr>
<tr>
<td>DBA 272</td>
<td>DB2 Performance Tuning</td>
<td>3</td>
</tr>
<tr>
<td>DBA 273</td>
<td>MySQL Performance Tuning</td>
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</tr>
<tr>
<td>DBA 274</td>
<td>SAS Performance Tuning</td>
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</tr>
<tr>
<td>DBA 285</td>
<td>Data Warehousing and Mining</td>
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</tr>
<tr>
<td>DBA 291</td>
<td>Selected Topics in Database Management: Oracle Project</td>
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<tr>
<td>WEB 180</td>
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</table>
and professional education.

dental offices, clinics, schools, public health agencies, industry, to practice dental hygiene. Employment opportunities include childhood in diverse learning environments. Students will combine and state/regional examinations for licensure which are required

Graduates of this program may be eligible to take national hygiene care.

Students will learn to prepare the operatory, take patient histories, note abnormalities, plan care, teach oral hygiene, clean teeth, take x-rays, apply preventive agents, complete necessary chart entries, and perform other procedures related to dental hygiene care.

Graduates of this program may be eligible to take national and state/regional examinations for licensure which are required to practice dental hygiene. Employment opportunities include dental offices, clinics, schools, public health agencies, industry, and professional education.

DENTAL HYGIENE — A45260

General Education Courses

ENG 111 Expository Writing.................................................3
PSY 150 General Psychology................................................3
SOC 210 Introduction to Sociology........................................3
CHM 130 General, Organic and Biochemistry...........................3
COM 120 Interpersonal Communication..................................3

Major Courses

BIO 163 Basic Anatomy.....................................................5
BIO 175 General Microbiology.............................................3
DEN 110 Orofacial Anatomy................................................3
DEN 111 Infection/Hazard Control.........................................2
DEN 112 Dental Radiography................................................3
DEN 120 Dental Hygiene Preclinic Lecture...............................2
DEN 121 Dental Hygiene Preclinic Lab....................................2
DEN 123 Nutrition and Dental Health...................................2
DEN 124 Periodontology......................................................2
DEN 125 Dental Office Emergencies......................................1
DEN 130 Dental Hygiene Theory I.........................................2
DEN 131 Dental Hygiene Clinic I..........................................3
DEN 140 Dental Hygiene Theory II.......................................1
DEN 141 Dental Hygiene Clinic II.......................................2
DEN 220 Dental Hygiene Theory III......................................2
DEN 221 Dental Hygiene Clinic III.......................................4
DEN 222 General and Oral Pathology....................................2
DEN 223 Dental Pharmacology.............................................2
DEN 224 Materials and Procedures.....................................2
DEN 230 Dental Hygiene Theory IV.....................................1
DEN 231 Dental Hygiene Clinic IV.....................................4
DEN 232 Community Dental Health....................................3
DEN 233 Professional Development....................................2

Graduation Requirements..................................................73 Credit Hours

Course work includes child growth and development: physical/ nutritional needs of children; care and guidance of children; and communication skills with parents and children. Students will foster the cognitive/language, physical/motor, social/emotional, and creative development of young children.

Graduates are prepared to plan and implement developmentally appropriate programs in early childhood settings. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Head Start Programs, and school-age programs.

EARLY CHILDHOOD ASSOCIATE — A55220

General Education Courses

ENG 111 Expository Writing................................................3
ENG 112 Argument-Based Research........................................3
MAT 115 Mathematical Models............................................3
PSY 150 General Psychology................................................3

Major Courses

CIS 111 Basic PC Literacy....................................................2
COE 111 Co-op Work Experience I.....................................1
COE 121 Co-op Work Experience II....................................1
COE 131 Co-op Work Experience III..................................1
COE 211 Co-op Work Experience IV....................................1
EDU 119 Early Childhood Education...................................4
EDU 131 Child, Family, and Community................................3
EDU 144 Child Development I.............................................3
EDU 145 Child Development II............................................3
EDU 146 Child Guidance....................................................3
EDU 151 Creative Activities................................................3
EDU 152 Music, Movement, and Language.............................3
EDU 153 Health, Safety, and Nutrition..................................3
EDU 157 Active Play..........................................................3
EDU 185 Cognitive and Language Activities..........................3
EDU 221 Children with Special Needs..................................3
EDU 251 Exploration Activities...........................................3
EDU 261 Early Childhood Administration I................................2
EDU 262 Early Childhood Administration II............................3
EDU 271 Educational Technology..........................................3
EDU 280 Literacy Experiences............................................3
EDU 282 Early Childhood Literature....................................3

Major Electives

Select one of the following courses

EDU 234 Infants, Toddlers, and Twos....................................3
EDU 263 Developing School Age Programs............................2

Graduation Requirements..................................................75 Credit Hours

ELECTRICAL/ELECTRONICS TECHNOLOGY

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial, and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical/electronics field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical/electronic systems.

Wake Technical Community College

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ELECTRICAL/ELECTRONICS TECHNOLOGY — A35220

General Education Courses
COM 120 Interpersonal Communications ........................................... 3
ENG 110 Freshman Composition ...................................................... 3
HUM 121 The Nature of America ..................................................... 3
PHY 121 Applied Physics I ............................................................ 4
PSY 118 Interpersonal Psychology .................................................. 3

Major Courses
CIS 111 Basic PC Literacy .............................................................. 2
ELC 112 DC/AC Electricity ............................................................... 5
ELC 113 Basic Wiring I ................................................................. 4
ELC 114 Basic Wiring II ................................................................. 4
ELC 115 Industrial Wiring ............................................................... 4
ELC 117 Motors and Controls ......................................................... 4
ELC 118 National Electrical Code ................................................... 2
ELC 119 NEC Calculations ............................................................. 2
ELC 121 Electrical Estimating ......................................................... 2
ELC 126 Electrical Computations ................................................... 3
ELC 128 Introduction to PLC ......................................................... 3
ELC 134 Transformer Applications ................................................ 2
ELC 229 Applications Project ........................................................ 2
ELN 133 Digital Electronics .......................................................... 4
ELN 229 Industrial Electronics ....................................................... 4
HYD 110 Hydraulics/Pneumatics .................................................... 3

Graduation Requirements ................................................. 66 Credit Hours

ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, communication systems, and power electronic systems. A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student's ability to analyze and troubleshoot electronic systems.

Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

ELECTRONICS ENGINEERING TECHNOLOGY — A40200

General Education Courses
ENG 111 Expository Writing .......................................................... 3
ENG 114 Professional Research and Reporting ................................. 3
MAT 121 Algebra and Trigonometry ............................................... 3
HUM 110 Technology and Society .................................................. 3

Major Courses
ATR 213 Programmable Controllers ............................................. 4
CSC 133 C Programming .............................................................. 3
EGR 131 Introduction to Electronics Technology ............................. 2

EGR 285 Design Project ................................................................. 2
ELC 131 DC/AC Circuit Analysis .................................................... 5
ELN 131 Electronic Devices .......................................................... 4
ELN 132 Linear IC Applications .................................................... 4
ELN 133 Digital Electronics ......................................................... 4
ELN 150 CAD for Electronics ....................................................... 2
ELN 154 Introduction to Data Communications ................................ 3
ELN 232 Introduction to Microprocessors ....................................... 4
ELN 233 Microprocessor Systems ................................................ 4
ELN 234 Communication Systems ................................................ 4
ELN 275 Troubleshooting ............................................................ 2
MAT 122 Algebra/Trigonometry ..................................................... 3
PHY 151 College Physics I ....................................................... 4

Graduation Requirements .................................................. 76 Credit Hours

EMERGENCY MEDICAL SCIENCE

The Emergency Medical Science curriculum is designed to prepare graduates to enter the workforce as paramedics. Additionally, the program can provide an Associate Degree for individuals desiring an opportunity for career enhancement.

The course of study provides the student an opportunity to acquire basic and advanced life support knowledge and skills by utilizing classroom instruction, practical laboratory sessions, hospital clinical experience, and field internships with emergency medical service agencies.

Students progressing through the program may be eligible to apply for both state and national certification exams. Employment opportunities include ambulance services, fire and rescue agencies, air medical services, specialty areas of hospitals, industry, educational institutions, and government agencies.

EMERGENCY MEDICAL SCIENCE — A45340

General Education Courses
BIO 165 Anatomy and Physiology I ............................................... 4
BIO 166 Anatomy and Physiology II ............................................. 4
ENG 111 Expository Writing ........................................................ 3
ENG 114 Professional Research and Reporting ................................ 3
PSY 150 General Psychology ....................................................... 3

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ENVIRONMENTAL SCIENCE TECHNOLOGY

The Environmental Science Technology curriculum is designed to prepare individuals for employment in environmental testing/consulting and related industries. Major emphasis is placed on biological and chemical evaluation of man’s impact on his environment.

Course work includes general education, computer applications, biology, chemistry, industrial safety, and an extensive array of detailed environmentally specific classes.

Graduates should qualify for numerous positions within the industry. Employment opportunities include, but are not limited to, Chemical Analysis, Biological Analysis, Water/Wastewater Treatment, EPA Compliance Inspection, Hazardous Material Handling, Waste Abatement/Removal, and Contaminated Site Assessment/Remediation.

GENERAL OCCUPATIONAL TECHNOLOGY — A55280

General Education Requirements (15 To 18 Credits)

ENG 111 Expository Writing .................................................... 3
ENG 114 Argument-Based Research .......................................... 3
ENG 114 Professional Research and Reporting .......................... 3

One of the following BIO courses:
BIO 106 Introduction to Anatomy/Physiology/Microbiology .... 3
BIO 160 Introductory Life Science ............................................. 3
BIO 163 Basic Anatomy and Physiology ................................. 5
BIO 165 Anatomy and Physiology I ........................................ 4

One of the following PSY courses:
PSY 110 Life Span Development .............................................. 3
PSY 118 Interpersonal Psychology ............................................ 3
PSY 150 General Psychology .................................................. 3

One of the following Humanities/Fine Arts courses:
HUM 110 Technology and Society ........................................... 3
HUM 115 Critical Thinking .................................................... 3
HUM 160 Introduction to Film ................................................. 3
HUM 230 Leadership Development ......................................... 3
SPA 111 Elementary Spanish I .............................................. 3
SPA 181 Spanish Lab I ........................................................... 1

EN 110 EMT-Basic ................................................................. 7
EMS 120 Intermediate Interventions ...................................... 3
EMS 121 EMS Clinical Practicum I .......................................... 2
EMS 125 EMS Instructor Methodology .................................... 2
EMS 130 Pharmacology I for EMS .......................................... 2
EMS 131 Advanced Airway Management ............................... 2
EMS 140 Rescue Scene Management ....................................... 2
EMS 150 Emergency Vehicles and EMS Communication .......... 2
EMS 210 Advanced Patient Assessment .................................. 2
EMS 220 Cardiology .............................................................. 4
EMS 221 EMS Clinical Practicum II ......................................... 3
EMS 230 Pharmacology II for EMS ......................................... 2
EMS 231 EMS Clinical Practicum III ....................................... 3
EMS 235 EMS Management .................................................. 2
EMS 240 Special Needs Patients ............................................. 2
EMS 241 EMS Clinical Practicum IV ....................................... 3
EMS 250 Advanced Medical Emergencies ............................. 3
EMS 260 Advanced Trauma Emergencies ............................... 2
EMS 270 Life Span Emergencies ............................................ 3
EMS 285 EMS Capstone .......................................................... 2

Graduation Requirements .................................................. 75 Credit Hours
HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY

The Heavy Equipment and Transport Technology curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair medium- and heavy-duty vehicles.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines, electrical, and hydraulic systems. Other courses cover transmissions, brakes, and steering/suspension. Additional related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair medium- and heavy-duty vehicles. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY — A60240

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
</tr>
<tr>
<td>HUM 121</td>
<td>The Nature of America</td>
<td>3</td>
</tr>
<tr>
<td>PHY 121</td>
<td>Applied Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
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</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>ELC 127</td>
<td>Software for Technicians</td>
<td>2</td>
</tr>
</tbody>
</table>

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY/CONSTRUCTION EQUIPMENT SYSTEMS

Construction Equipment Systems is a concentration under the curriculum title of Heavy Equipment and Transport Technology. This curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair construction equipment systems. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and electrical and hydraulic systems. The concentration courses will include transmissions, brakes, undercarriage, and equipment repair. Other related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY/CONSTRUCTION EQUIPMENT SYSTEMS — A6024B

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
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<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
</tr>
<tr>
<td>HUM 121</td>
<td>The Nature of America</td>
<td>3</td>
</tr>
<tr>
<td>PHY 121</td>
<td>Applied Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>
HIGH PERFORMANCE COMPUTING

The High Performance Computing (HPC) curriculum is designed to prepare students for employment with organizations that require experience with HPC technology. Students will learn how to assemble, program, and operate high performance cluster computers.

The curriculum includes introductory and advanced levels of HPC architecture including distributed-memory systems, parallel programming concepts, high-speed networking and Linux/Unix operating systems.

Program graduates can expect to work in an HPC environment that supports educational, industrial, or government agencies that require HPC skills.

HIGH PERFORMANCE COMPUTING — A25230

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Mathematics Lab</td>
<td>1</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Graduation Requirements .................................... 71-72 Credit Hours

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 125</td>
<td>Introduction to Parallel Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 133</td>
<td>C Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 225</td>
<td>Advanced Parallel Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 229</td>
<td>MPI Programming</td>
<td>3</td>
</tr>
<tr>
<td>HPC 110</td>
<td>Introduction to HPC</td>
<td>3</td>
</tr>
<tr>
<td>HPC 130</td>
<td>Introduction to HPC Communication</td>
<td>3</td>
</tr>
<tr>
<td>HPC 140</td>
<td>Introduction to HPC Architecture</td>
<td>3</td>
</tr>
<tr>
<td>HPC 230</td>
<td>Advanced HPC Communication</td>
<td>3</td>
</tr>
<tr>
<td>HPC 240</td>
<td>Advanced HPC Architecture</td>
<td>3</td>
</tr>
<tr>
<td>HPC 245</td>
<td>Grid Technologies</td>
<td>3</td>
</tr>
<tr>
<td>HPC 285</td>
<td>System Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>NET 145</td>
<td>Introduction to Linux</td>
<td>3</td>
</tr>
<tr>
<td>NET 155</td>
<td>Linux System Administration</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 221</td>
<td>Linux/UNIX Administration II</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives List 1

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
</tr>
<tr>
<td>CSC 151</td>
<td>Java Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 233</td>
<td>Advanced C Programming</td>
<td>3</td>
</tr>
<tr>
<td>HPC 154</td>
<td>Introduction to Bioinformatics Computing</td>
<td>3</td>
</tr>
<tr>
<td>HPC 162</td>
<td>HPC Security</td>
<td>3</td>
</tr>
<tr>
<td>HPC 170</td>
<td>Introduction to HPC Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>HPC 172</td>
<td>HPC Applications</td>
<td>3</td>
</tr>
<tr>
<td>HPC 193</td>
<td>Selected Topics in High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>HPC 198</td>
<td>Seminar in High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>NET 225</td>
<td>Routing and Switching I</td>
<td>3</td>
</tr>
<tr>
<td>WEB 115</td>
<td>Web Markup and Scripting</td>
<td>3</td>
</tr>
<tr>
<td>WEB 183</td>
<td>Perl Programming</td>
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</table>

Major Electives List 2

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 123</td>
<td>Co-op Work Experience II</td>
<td>3</td>
</tr>
<tr>
<td>CSC 245</td>
<td>Advanced C/C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 255</td>
<td>Open MP Programming</td>
<td>3</td>
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<tr>
<td>CSC 275</td>
<td>HPC Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>HPC 262</td>
<td>Advanced HPC Security</td>
<td>3</td>
</tr>
<tr>
<td>HPC 293</td>
<td>Selected Topics in High Performance Computing: Bioinformatics Capstone</td>
<td>3</td>
</tr>
<tr>
<td>HPC 298</td>
<td>Seminar in High Performance Computing</td>
<td>3</td>
</tr>
<tr>
<td>NET 226</td>
<td>Routing and Switching II</td>
<td>3</td>
</tr>
<tr>
<td>NOS 222</td>
<td>Linux/UNIX Administration III</td>
<td>3</td>
</tr>
<tr>
<td>WEB 215</td>
<td>Advanced Markup and Scripting</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduation Requirements .................................... 67 Credit Hours

HOTEL AND RESTAURANT MANAGEMENT

The Hotel and Restaurant Management curriculum prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in hotels, motels, resorts, inns, restaurants, institutions, and clubs.

Course work includes front office management, food preparation, guest services, sanitation, menu writing, quality management, purchasing, and other areas critical to the success of hospitality professionals.

Upon completion graduates should qualify for supervisory or entry-level management positions in food and lodging including, front office, reservations, housekeeping, purchasing, dining room, and marketing. Opportunities are also available in the support areas of food and equipment sales.
HOTEL AND RESTAURANT
MANAGEMENT — A25240

General Education Courses
ENG 111 Expository Writing ..............................................3
ENG 114 Professional Research and Reporting ......................3
HUM 115 Critical Thinking ...................................................3
or
HUM 230 Leadership Development .....................................3
MAT 115 Mathematical Models...........................................3
Humanities/Fine Arts Elective...........................................3
Social/Behavioral Science...............................................3

Major Courses
ACC 175 Hotel and Restaurant Accounting ..............................4
BUS 110 Introduction to Business .......................................3
CIS 111 Basic PC Literacy ..................................................2
COE 112 Co-op Work Experience I .....................................2
CTS 135 Integrated Software Introduction ............................4
CUL 110 Sanitation and Safety .........................................2
CUL 135 Food and Beverage Service ....................................2
CUL 135A Food and Beverage Service Lab ............................1
CUL 140 Basic Culinary Skills ...........................................5
CUL 214 Wine Appreciation ............................................2
HRM 110 Introduction to Hospitality ..................................2
HRM 140 Hospitality Tourism Law ....................................3
HRM 145 Hospitality Supervision ......................................3
HRM 220 Food and Beverage Controls ...............................3
HRM 220A Food and Beverage Control Lab ........................1
HRM 240 Hospitality Marketing .......................................3
HRM 280 Hospitality Management Problems ......................3
SPA 120 Spanish for the Workplace ...................................3

Major Electives
Select one of the following complete sets of courses

Hotel Option
HRM 115 Housekeeping ....................................................3
HRM 120 Front Office Procedures .....................................3
HRM 210 Meetings and Conventions ..................................3

Restaurant Option
CUL 130 Menu Design ......................................................2
HRM 193 Selected Topics in Hotel and Restaurant Management ....3
HRM 215 Restaurant Management .......................................3
HRM 225 Beverage Management .......................................2

Graduation Requirements ........................................ 73-74 Credit Hours

HUMAN SERVICES
TECHNOLOGY — A45380

General Education Courses
BIO 161 Introduction to Human Biology ...............................3
COM 120 Interpersonal Communication ..............................3
ENG 111 Expository Writing .............................................3
ENG 112 Argument-Based Research ...................................3
SOC 210 Introduction to Sociology ....................................3
Humanities/Fine Arts Elective ...........................................3

Major Courses
CIS 111 Basic PC Literacy ..................................................2
COE 111 Co-op Work Experience I ....................................1
COE 115 Work Experience Seminar I ................................1
GRO 120 Gerontology ......................................................3
HSE 110 Introduction to Human Services ...........................3
HSE 112 Group Process I ..................................................2
HSE 115 Health Care Concepts ........................................4
HSE 123 Interviewing Techniques .....................................3
HSE 125 Counseling .......................................................3
HSE 210 Human Services Issues ........................................2
HSE 220 Case Management .............................................3
HSE 225 Crisis Intervention .............................................3
HSE 242 Family Systems ..................................................3
HSE 250 Financial Services ..............................................2
PSY 118 Interpersonal Psychology ....................................3
PSY 150 General Psychology ...........................................3
PSY 281 Abnormal Psychology .........................................3
SAB 110 Substance Abuse Overview ................................3
SWK 113 Working with Diversity .....................................3

Major Electives
Select 3 hours from the following courses

COE 121 Co-op Work Experience II ...................................1
COE 125 Work Experience Seminar II ................................1
HEA 110 Personal Health/Wellness ....................................3
HSE 127 Conflict Resolution ...........................................3
HSE 145 Child Abuse and Neglect ....................................3
HSE 150 Preventive Intervention ......................................2
HSE 155 Community Resources Management ....................2
HSE 240 Issues in Client Services ....................................3
HSE 255 Health Problems and Prevention .........................3
PSY 110 Life Span Development ......................................3

Graduation Requirements ........................................ 71 Credit Hours

HUMAN SERVICES
TECHNOLOGY/DEVELOPMENTAL
DISABILITIES

The Human Services Technology/Developmental Disabilities concentration is designed to train technicians to work with children and adults with physical, mental, and emotional disabilities. Students will specialize in the areas of developmental disabilities and mental retardation.

Students will gain an understanding of the handicapping effects of developmental disabilities in medical, psychological, social, educational, vocational, and economic terms. Fieldwork and clinical experience in community agencies providing comprehensive services to disabled persons and their families will be provided.
Graduates should qualify for employment in group homes, foster care homes, respite services, vocational rehabilitation agencies, sheltered workshops, adult developmental activities programs, early childhood intervention programs, and other programs for developmentally disabled and mentally retarded individuals and their families.

**HUMAN SERVICES TECHNOLOGY/DEVELOPMENTAL DISABILITIES — A4538A**

### General Education Courses

- **BIO 161** Introduction to Human Biology ........................................... 3
- **COM 120** Interpersonal Communication ........................................... 3
- **ENG 111** Expository Writing ................................................. 3
- **ENG 112** Argument-Based Research ............................................... 3
- **SOC 210** Introduction to Sociology .............................................. 3
  - Humanities/Fine Arts Elective ........................................... 3

### Major Courses

- **CIS 111** Basic PC Literacy .................................................. 2
- **COE 111** Co-op Work Experience I ...................................... 1
- **COE 115** Work Experience Seminar I ...................................... 1
- **DDT 110** Developmental Disabilities ......................................... 3
- **DDT 120** Teaching the Developmentally Disabled ......................... 3
- **DDT 210** DDT Health Issues .................................................. 3
- **DDT 220** Program Planning Process ........................................ 3
- **HSE 110** Introduction to Human Services .................................. 3
- **HSE 112** Group Process II ..................................................... 2
- **HSE 115** Health Care Concepts .............................................. 4
- **HSE 123** Interviewing Techniques ............................................. 3
- **HSE 125** Counseling ............................................................. 3
- **HSE 210** Human Services Issues ............................................. 2
- **HSE 220** Case Management .................................................... 3
- **HSE 225** Crisis Intervention ................................................... 3
- **HSE 242** Family Systems ........................................................... 3
- **HSE 250** Financial Services .................................................... 2
- **PSY 118** Interpersonal Psychology ............................................ 3
- **PSY 150** General Psychology ................................................ 3
- **PSY 281** Abnormal Psychology ................................................ 3
- **SWK 113** Working with Diversity ........................................... 3

**Graduation Requirements ........................................ 74 Credit Hours**

**HUMAN SERVICES TECHNOLOGY/SUBSTANCE ABUSE — A4538E**

### General Education Courses

- **BIO 161** Introduction to Human Biology ........................................... 3
- **ENG 111** Expository Writing .................................................. 3
- **ENG 112** Argument-Based Research ........................................... 3
- **COM 120** Interpersonal Communication ...................................... 3
- **SOC 210** Introduction to Sociology .............................................. 3
  - Humanities/Fine Arts Elective ........................................... 3

### Major Courses

- **CIS 111** Basic PC Literacy .................................................. 2
- **COE 111** Co-op Work Experience I ...................................... 1
- **COE 115** Work Experience Seminar I ...................................... 1
- **COE 121** Co-op work Experience II ........................................ 1
- **COE 125** Work Experience Seminar II ...................................... 1
- **HSE 110** Introduction to Human Services .................................. 3
- **HSE 112** Group Process I ..................................................... 2
- **HSE 123** Interviewing Techniques ............................................. 3
- **HSE 125** Counseling ............................................................. 3
- **HSE 210** Human Services Issues ............................................. 2
- **HSE 225** Crisis Intervention ................................................... 3
- **HSE 242** Family Systems ........................................................... 3
- **PSY 118** Interpersonal Psychology ............................................ 3
- **PSY 150** General Psychology ................................................ 3
- **PSY 281** Abnormal Psychology ................................................ 3
- **SAB 110** Substance Abuse Overview ........................................ 3
- **SAB 120** Intake and Assessment ............................................. 3
- **SAB 125** SAB Case Management ............................................. 3
- **SAB 135** Addictive Process ..................................................... 3
- **SAB 210** Substance Abuse Counseling ..................................... 3
- **SAB 220** Group Techniques/Therapy ....................................... 3
- **SAB 240** SAB Issues in Client Services .................................... 3
- **SWK 113** Working with Diversity ........................................... 3

**Graduation Requirements ................................................ 76 Credit Hours**

**INDUSTRIAL ENGINEERING TECHNOLOGY**

The Industrial Engineering Technology curriculum prepares graduates to perform as technical leaders in manufacturing and service organizations. The curriculum incorporates the study and application of methods and techniques for developing, implementing, and improving integrated systems involving people, material, equipment, and information.

The course work emphasizes analytical and problem-solving techniques for process development and improvement. The curriculum includes systems analysis, quality and productivity improvement techniques, cost analysis, facilities planning, organizational management, effective communications, and computer usage as a problem-solving tool.

Graduates of the curriculum will qualify for positions in a wide range of manufacturing and service organizations. Employment opportunities include industrial engineering technology, quality assurance, supervision, team leadership, and facilities management. Certification is available through organizations such as ASQC, SME, and APICS.
INDUSTRIAL ENGINEERING TECHNOLOGY — A40240

General Education Courses
ECO 251 Principles of Microeconomics ........................................... 3
ENG 111 Expository Writing ............................................................ 3
ENG 114 Professional Research and Reporting ................................... 3
MAT 121 Algebra and Trigonometry .................................................. 3
Humans/Arts Elective ................................................................. 3

Major Courses
DFT 111 Technical Drafting I .......................................................... 2
DFT 151 CAD I ............................................................................. 3
EGR 285 Design Project ................................................................... 2
ISC 112 Industrial Safety .................................................................. 2
ISC 128 Industrial Leadership .......................................................... 2
ISC 132 Manufacturing Quality Control ........................................... 3
ISC 136 Productivity Analysis I ......................................................... 3
ISC 243 Production and Operations Management I .......................... 3
ISC 255 Engineering Economy ......................................................... 3
MAC 114 Introduction to Metrology ................................................. 2
MAT 122 Algebra/Trigonometry I ...................................................... 3
MAT 151 Statistics I ......................................................................... 1
MEC 161 Manufacturing Processes I ............................................... 3
MEC 161A Manufacturing Processes I Lab ......................................... 1
MEC 180 Engineering Materials ....................................................... 3

Major Electives
Select 13 hours from the following courses
DFT 121 Introduction to GD and T .................................................... 2
DFT 152 CAD II ............................................................................. 3
ISC 226 Facilities Design .................................................................. 4
ISC 230 Simulation Production Processes ....................................... 2
ISC 237 Quality Management .......................................................... 3
ISC 277 Quality Technology ............................................................ 4
ISC 278 cGMP Quality Systems ....................................................... 2
ISC 280 Validation Fundamentals .................................................... 2
PHY 151 College Physics I ............................................................... 4

Co-op Work Experience Electives
Select 2 hours from the following courses
COE 111 Co-op Work Experience I .................................................. 1
COE 112 Co-op Work Experience II ............................................... 2
COE 121 Co-op Work Experience I .................................................. 1
COE 122 Co-op Work Experience II ............................................... 2

Graduation Requirements ......................................................... 68 Credit Hours

INDUSTRIAL PHARMACEUTICAL TECHNOLOGY — A20180

General Education Courses
ENG 111 Expository Writing .......................................................... 3
ENG 114 Professional Research and Reporting ................................... 3
MAT 121 Algebra and Trigonometry .................................................. 3
Humans/Arts Elective ................................................................. 3

Major Courses
ACA 111 College Student Success ................................................... 1
BIO 110 Principles of Biology .......................................................... 4
CHM 131 Introduction to Chemistry ............................................... 3
CHM 131A Introduction to Chemistry Lab ....................................... 1
CHM 132 Organic and Biochemistry .............................................. 4
CIS 111 Basic PC Literacy .............................................................. 2
COE 112 Co-op Work Experience I ............................................... 2
and
COE 124 Co-op Work Experience II ............................................... 4
or
COE 114 Co-op Work Experience I ............................................... 4
and
COE 122 Co-op Work Experience II ............................................... 4

ENV 212 Instrumentation ............................................................... 4
ISC 112 Industrial Safety ............................................................... 2
PTC 110 Industrial Environment ..................................................... 3
PTC 120 Pharmaceutical Quality Control ....................................... 4
PTC 193 Selected Topics in Industrial Pharmaceutical Technology .......................... 3
PTC 210 Pharmaceutical Industrial Processes ................................... 4
PTC 212 Applied Microbiology ....................................................... 4
PTC 214 Parenteral Processes ......................................................... 4
PTC 222 Pharmaceutical Process Control ....................................... 3
PTC 226 Validation ........................................................................ 3
PTC 228 Pharmaceutical Issues ..................................................... 1

Graduation Requirements ......................................................... 71 Credit Hours

INDUSTRIAL SYSTEMS TECHNOLOGY

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, test, or repair equipment.
repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as lifelong learners.

INDUSTRIAL SYSTEMS TECHNOLOGY — A50240

General Education Courses

COM 120 Interpersonal Communication ......................... 3
ENG 110 Freshman Composition ..................................... 3
HUM 121 The Nature of America .................................... 3
PHY 121 Applied Physics I ........................................... 4
PSY 118 Interpersonal Psychology ................................ 3

Major Courses

AHR 112 Heating Technology ....................................... 4
AHR 113 Comfort Cooling ........................................... 4
BPR 130 Blueprint Reading/Construction ......................... 2
CIS 111 Basic PC Literacy ............................................ 2
ELC 112 DC/AC Electricity ......................................... 5
ELC 113 Basic Wiring I .............................................. 4
ELC 115 Industrial Wiring .......................................... 4
ELC 117 Motors and Controls .................................... 4
HYD 110 Hydraulics/Pneumatics I ............................... 3
HYD 121 Hydraulics/Pneumatics II ............................... 3
ISC 110 Workplace Safety ......................................... 1
MEC 111 Machine Processes I .................................... 3
MNT 110 Introduction to Maintenance Procedures .......... 2
MNT 111 Maintenance Practices .................................. 3

or

COE 112 Co-op Work Experience I .............................. 2
MNT 150 Basic Building Maintenance ........................... 2
MNT 220 Rigging and Moving .................................... 2
MNT 230 Pumps and Piping Systems ........................... 2
MNT 240 Industrial Equipment Troubleshooting ........... 2
PLU 111 Introduction to Basic Plumbing ....................... 2
PLU 211 Commercial/Industrial Plumbing .................... 3
WLD 112 Basic Welding Processes ................................ 2

Graduation Requirements ........................................... 73-74 Credit Hours

INFORMATION SYSTEMS SECURITY

Information Systems Security covers a broad expanse of technology concepts. This curriculum provides individuals with the skills required to implement effective and comprehensive information security controls.

Course work includes networking technologies, operating systems administration, information policy, intrusion detection, security administration, and industry best practices to protect data communications. Graduates should be prepared for employment as security administrators. Additionally, they will acquire the skills that allow them to pursue security certifications.

INFORMATION SYSTEMS SECURITY — A25270

General Education Courses

ENG 111 Expository Writing ........................................ 3
ENG 114 Professional Research and Reporting ............... 3
HUM 115 Critical Thinking ......................................... 3

Major Courses

CIS 110 Introduction to Computers ............................... 3
CIS 115 Introduction to Programming and Logic ............ 3
CTS 115 Information Systems Business Concepts ........... 3
DBA 110 Database Concepts .................................... 3
NET 125 Networking Basics ....................................... 3
NET 126 Routing Basics ............................................ 3
NOS 110 Operating System Concepts ......................... 3
NOS 120 Linux/UNIX Single User ................................ 3
NOS 130 Windows Single User ................................... 3
NOS 220 Linux/UNIX Administration I ....................... 3
NOS 230 Windows Administration I ............................ 3
SEC 110 Security Concepts ....................................... 3
SEC 150 Secure Communications .............................. 3
SEC 160 Secure Administration I .............................. 3
SEC 210 Intrusion Detection .................................... 3
SEC 220 Defense-In-Depth ....................................... 3
SEC 289 Security Capstone Project ............................ 3

Major Electives List 1

Select 3 hours from the following courses

COE 113 Co-op Work Experience II ............................ 3
NET 175 Wireless Technology .................................... 3
NET 225 Routing and Switching I .............................. 3
NOS 231 Windows Administration II .......................... 3
SEC 193 Selected Topics in Information Systems Security 3
SEC 198 Seminar in Information Systems Security ......... 3

Major Electives List 2

Select 3 hours from the following courses

COE 123 Co-op Experience II .................................... 3
NET 226 Routing and Switching II .............................. 3
NOS 221 Linux/UNIX Administration II ....................... 3
NOS 232 Windows Administration III .......................... 3
SEC 240 Wireless Security ........................................ 3
SEC 293 Selected Topics in Information Systems Security 3
SEC 298 Seminar in Information Systems Security ......... 3

Graduation Requirements ........................................... 73 Credit Hours

LANDSCAPE ARCHITECTURE TECHNOLOGY

The Landscape Architecture Technology curriculum prepares individuals as landscape architecture technicians in landscape design, construction, and architecture fields. The well-trained landscape technician will find excellent prospects for employment and advancement, including large-scale site design and supervision and residential landscape design.

Students receive instruction in landscape construction materials and methods, environmental planning, principles of horticulture, building codes, and computer applications. They develop drafting and computer skills through progressive hands-on courses. Students may choose from a library of courses to suit specific interest areas.

Graduates will demonstrate a working knowledge of landscape architectural practices, including site planning, storm water engineering, road and parking layouts, and grading and plant selection according to zoning/code requirements.
MACHINING TECHNOLOGY - A50300

General Education Courses

ENG 110 Freshman Composition ................................. 3
ENG 111 The Nature of America ................................ 3
ENG 112 Interpersonal Psychology .......................... 3
MAT 121 College Algebra ........................................ 3
MAC 111 Machine Technology I ............................... 6
MAC 112 Machine Technology II ............................. 6
MAC 113 Machine Technology III ............................ 6
MAC 114 Machine Shop Mathematics ....................... 2
MAC 121 Introduction to CNC ................................. 2
MAC 122 CNC Turning ........................................... 2
MAC 124 CNC Milling ............................................ 2
MAC 126 CNC Metal Fabrication ............................ 2
MAC 151 Machining Calculations ............................ 2
MAC 152 Advanced Machining Calculations ............... 2
MAC 221 Advanced Machine Tooling ......................... 2
MAC 225 Advanced CNC Milling ............................ 2
MAC 229 CNC Programming ................................... 2
MAC 231 CNC Graphics Programming: Turning ........ 2
MAC 232 CNC Graphics Programming: Milling .......... 2
MAC 241 Jigs and Fixtures I ................................. 4
MEC 141 Introduction to Manufacturing Processes ...... 3
MEC 231 Computer-Aided Manufacturing I .............. 3
WLD 112 Basic Welding Processes ......................... 2

Graduation Requirements ...................................... 74 Credit Hours

MACHINING TECHNOLOGY/ TOOL, DIE, AND MOLD MAKING

The Machining Technology curriculum is designed to develop skills in the theory and safe use of hand tools, power machinery, computerized equipment, and more sophisticated precision inspection instruments.

Students will learn to interpret blueprints, set up manual and CNC machines, perform basic and advanced machining operations, and make decisions to ensure that work quality is maintained.

Employment opportunities for machinists exist in manufacturing industries, public institutions, governmental agencies, and in a wide range of specialty machining job shops.

MACHINING TECHNOLOGY - A50300

General Education Courses

COM 120 Interpersonal Communication .......................... 3
ENG 110 Freshman Composition ................................. 3
HUM 121 The Nature of America ................................... 3
PHY 121 Applied Physics I ......................................... 4
PSY 112 Interpersonal Psychology ........................... 3

Major Courses

BPR 111 Blueprint Reading ......................................... 2
BPR 121 Blueprint Reading: Mechanical ....................... 2
MAC 111 Machine Technology I .................................. 6
MAC 112 Machine Technology II ................................ 6
MAC 113 Machine Technology III ................................ 6
MAC 121 Introduction to CNC .................................. 2
MAC 122 CNC Turning ........................................... 2
MAC 124 CNC Milling ............................................ 2
MAC 126 CNC Metal Fabrication ............................ 2
MAC 151 Machining Calculations ............................ 2
MAC 152 Advanced Machining Calculations ............... 2
MAC 229 Compound Angles ..................................... 2
MAC 232 CNC Graphics Programming: Milling .......... 2
MAC 241 Jigs and Fixtures I .................................... 4
MANUFACTURING TECHNOLOGY/PLASTICS †

Plastics is a concentration under the curriculum title of Manufacturing Technology. This curriculum provides training in all aspects of the polymer processing industry, one of today's fastest growing manufacturing technologies. It will prepare individuals for employment by utilizing the latest technologies in both plastics materials and plastics processing.

Course work includes rigorous study of the polymer processing industry, including materials technology, injection molding, extrusion, thermoforming, blow molding, and other related areas. Students will also gain knowledge in machine operation, maintenance, setup, design and research, quality assurance, and safety.

Graduates should qualify for employment in the design and/or production of plastic-related items including such job titles as molding technician, estimator, QC technician, setup technician, or supervisor.

MANUFACTURING TECHNOLOGY/PLASTICS — A5032A †

General Education Courses

CHM 131 Introduction to Chemistry .............................................. 3
CHM 131A Introduction to Chemistry Lab .....................................1
ENG 111 Expository Writing ..................................................... 3
ENG 114 Professional Research and Reporting ............................. 3
MAT 121 Algebra/Trigonometry ............................................... 3
Humanities/Fine Arts Elective ............................................... 3
Social/Behavioral Science Elective ......................................... 3

Major Courses

ATR 112 Introduction to Automation ......................................... 3
CIS 111 Basic PC Literacy ....................................................... 2
DFT 111 Technical Drafting I .................................................. 2
or
DFT 170 Engineering Graphics ................................................ 3
HYD 110 Hydraulics/Pneumatics I ............................................ 3
MEC 145 Manufacturing Materials I ......................................... 3
or
MEC 180 Engineering Materials .............................................. 3
MEC 161 Manufacturing Processes I ......................................... 3
MEC 161A Manufacturing Processes I Lab .................................. 1
PLA 110 Introduction to Plastics ............................................. 2
PLA 115 Polymer Processing ................................................... 3
PLA 120 Injection Molding ...................................................... 3
PLA 210 Mold Maintenance/Design ........................................ 3
PLA 215 Polymeric Materials .................................................. 3
PLA 220 Moldflow ................................................................. 3
PLA 225 Extrusion ................................................................. 3
PLA 230 Advanced Plastics Manufacturing ................................4

Graduation Requirements ..................................................... 76 Credit Hours

Safety Electives
Select one of the following courses

ISC 112 Industrial Safety ......................................................2
ISC 121 Environmental Health and Safety ..............................3

Quality Control Electives
Select one of the following courses

ISC 132 Manufacturing Quality Control ..................................3
ISC 221 Statistical Quality Control ..........................................3

Industrial/Machining Electives
Select one of the following courses

ISC 128 Industrial Leadership .............................................. 2
ISC 133 Manufacturing Management Practices .....................2
MAC 114 Introduction to Metrology .......................................3

Graduation Requirements ..................................................... 68-69 Credit Hours

MECHANICAL DRAFTING TECHNOLOGY

The Mechanical Drafting Technology curriculum prepares technicians to produce drawings of mechanical parts, components of mechanical systems, and mechanisms. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

Course work includes mechanical drafting, CAD, and proper drawing documentation. Concepts such as machine shop processes, basic materials, and physical sciences as they relate to the design process are also included. The use of proper dimensioning and tolerance techniques is stressed.

Graduates should qualify for employment in mechanical areas such as manufacturing, fabrication, research and development, and service industries.

MECHANICAL DRAFTING TECHNOLOGY — A50340

General Education Courses

COM 120 Interpersonal Communications ...................................3
ENG 110 Freshman Composition .............................................3
HUM 121 The Nature of America ........................................... 3
PHY 121 Applied Physics I .................................................... 4
PSY 118 Interpersonal Psychology .........................................3

Major Courses

DDF 211 Design Drafting I ......................................................4
DDF 221 Design Drafting Project ............................................ 2
DFT 111 Technical Drafting I ..................................................2
DFT 111A Technical Drafting I Lab .........................................1
DFT 112 Technical Drafting II ................................................2
DFT 112A Technical Drafting II Lab ..................................... 1
DFT 115 Architectural Drafting ............................................. 2
DFT 121 Introduction to GD and T ......................................... 2
DFT 151 CAD I ................................................................. 3
DFT 152 CAD II ................................................................. 3
DFT 153 CAD III ............................................................... 3
DFT 161 Pattern Design and Layout ....................................... 2
DFT 214 Descriptive Geometry ............................................. 2
DFT 221 Electrical Drafting ..................................................4
HYD 110 Hydraulics/Pneumatics I ..........................................3
ISC 110 Workplace Safety ...................................................1
ISC 112 Industrial Safety ......................................................2
MEC 110 Introduction to CAD/CAM ......................................2
MEC 111 Machine Processes I ..............................................3
MECHANICAL ENGINEERING TECHNOLOGY — A40320

General Education Courses
ECO 251 Principles of Microeconomics ............................................. 3
ENG 111 Expository Writing ................................................................ 3
ENG 114 Professional Research and Reporting .................................... 3
MAT 121 Algebra and Trigonometry .................................................. 3
MAT 223 Applied Calculus ................................................................ 3
MAT 224 Differential Equations ....................................................... 3

Major Courses
DFT 111 Technical Drafting I .............................................................. 3
DFT 151 CAD I ................................................................................. 3
DFT 152 CAD II .............................................................................. 3
EGR 285 Design Project .................................................................... 3
ELC 111 Introduction to Electricity .................................................. 3
ISC 128 Industrial Leadership .......................................................... 2
ISC 132 Manufacturing Quality Control ........................................... 3
ISC 255 Engineering Economy ....................................................... 3
MAT 122 Algebra/Trigonometry II .................................................... 3
PHY 151 College Physics I ................................................................ 3

Co-op Work Experience Electives
Select 2 hours from the following courses

COE 111 Co-op Work Experience I .................................................. 1
COE 112 Co-op Work Experience I .................................................. 2
COE 121 Co-op Work Experience II ................................................ 2

Material/Processing Electives
Select 5 hours from the following courses

MEC 161 Manufacturing Processes I ................................................ 3
MEC 180 Engineering Materials ...................................................... 3
PLA 110 Introduction to Plastics .................................................... 2

Statics/Strength of Materials Electives
Select 3 hours from the following courses

CIV 110 Statics/Strength of Materials ............................................ 3

Graduation Requirements ............................................................. 65 Credit Hours

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. Typical assignments would include assisting in the design, development, testing, and repair of mechanical equipment. Emphasis is placed on the integration of theory and mechanical principles.

Course work includes applied mechanics, manufacturing methods and processes, computer usage, computer-aided drafting, mathematics, physics, and oral and written communications. The courses will stress critical thinking, planning, and problem solving. Graduates of the curriculum will find employment opportunities in the diversified branches of the mechanical field. Mechanical engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

MEDICAL ASSISTING — A45400

General Education Courses
ENG 111 Expository Writing .......................................................... 3
ENG 112 Argument-Based Research ................................................ 3
ENG 113 Introduction to Research ................................................... 3
ENG 114 Professional Research and Reporting ................................ 3
MAT 121 Algebra-Trigonometry ...................................................... 3
MAT 122 Algebra-Trigonometry II .................................................. 3

Social/Behavioral Science Electives
Select one of the following courses

BIO 163 Basic Anatomy and Physiology ....................................... 5
BIO 164 Basic Physiology .............................................................. 5
BIO 265 Medical Microbiology ..................................................... 2
MED 110 Orientation to Medical Assisting .................................. 2
MED 112 Orientation to Clinical Setting I ........................................ 2
MED 113 Orientation to Clinical Setting II ...................................... 2
MED 114 Professional Interaction in Health Care ......................... 2
MED 115 Medical Law and Ethics ................................................. 2
MED 121 Medical Terminology .................................................... 3
MED 122 Medical Terminology II .................................................. 3
MED 130 Administrative Office Procedures I .................................. 2
MED 131 Administrative Office Procedures II ................................ 2
MED 134 Medical Transcription ................................................... 3
MED 140 Examining Room Procedures I ........................................ 5
MED 150 Laboratory Procedures I .................................................. 5
MED 232 Medical Insurance Coding ............................................. 2
MED 260 MEC210 Clinical Externship .......................................... 3
MED 262 Clinical Perspectives ...................................................... 2
MED 264 Medical Assisting Overview .......................................... 2
MED 270 Symptomatology .......................................................... 3
MED 272 Drug Therapy ............................................................... 3
CIS 111 Basic PC Literacy .............................................................. 2

Graduation Requirements ............................................................ 73 Credit Hours
Medical Laboratory Technology

The Medical Laboratory Technology curriculum prepares individuals to perform clinical laboratory procedures in chemistry, hematology, microbiology, and immunohematology that may be used in the maintenance of health and diagnosis/treatment of disease.

Course work emphasizes mathematical and scientific concepts related to specimen collection, laboratory testing and procedures, quality assurance, and reporting/recording and interpreting findings involving tissues, blood, and body fluids.

Graduates may be eligible to take examinations given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists or the National Certifying Agency. Employment opportunities include laboratories in hospitals, medical offices, industry, and research facilities.

Medical Laboratory Technology — A45420

General Education Courses

ENG 111 Expository Writing..................................................3
ENG 112 Argument-Based Research.........................................3
MAT 115 Mathematical Models..............................................3
PSY 150 General Psychology................................................3

Humanities/Fine Arts Electives ...............................................3

Major Courses

BIO 163 Basic Anatomy and Physiology ...............................5
CIS 111 Basic PC Literacy....................................................2
MLT 110 Introduction to MLT................................................3
MLT 111 Urinalysis and Body Fluids......................................2
MLT 115 Laboratory Calculations .........................................2
MLT 118 Medical Lab Chemistry ..........................................3
MLT 120 Hematology/Hemostasis I......................................4
MLT 125 Immunohematology I .............................................5
MLT 130 Clinical Chemistry I ..............................................4
MLT 140 Introduction to Microbiology..................................3
MLT 217 Professional Issues................................................1
MLT 220 Hematology/Hemostasis II....................................3
MLT 230 Clinical Chemistry II .........................................3
MLT 240 Special Clinical Microbiology.................................3
MLT 254 MLT Practicum I...................................................4
MLT 266 MLT Practicum II..................................................6
MLT 276 MLT Practicum III.................................................6
MLT 280 Special Practice Lab...............................................1

Graduation Requirements ...................................................75 Credit Hours

Medical Office Administration — A25310

General Education Courses

ENG 111 Expository Writing..................................................3
ENG 114 Professional Research and Reporting.........................3
ENG 138 English Grammar....................................................3
MAT 115 Mathematical Models ............................................3
PSY 118 Interpersonal Psychology........................................3
Humanities/Fine Arts Electives ...............................................3

Major Courses

BUS 260 Business Communications....................................3
CIS 111 Basic PC Literacy....................................................2
CIS 120 Spreadsheet I .......................................................3
CIS 169 Business Presentations ...........................................2
OST 132 Keyboard Skill Building .........................................2
OST 134 Text Entry and Formatting ......................................3
OST 135 Advanced Text Entry and Formatting........................4
OST 136 Word Processing....................................................2
OST 137 Office Software Applications ..................................2
OST 141 Medical Terms I - Medical Office ............................3
OST 142 Medical Terms II - Medical Office ............................3
OST 148 Medical Coding, Billing, and Insurance .....................3
OST 149 Medical Legal Issues .............................................3
OST 164 Text Editing Applications .......................................3
OST 181 Introduction to Office Systems .................................3
OST 184 Records Management ............................................3
OST 188 Issues in Office Technology .....................................2
OST 236 Advanced Word/Information Processing....................3
OST 241 Medical Office Transcription I .................................2
OST 243 Medical Office Simulation .......................................3
OST 286 Professional Development .......................................3

Office Systems Technology Elective

Select 2 hours from the following courses

OST 197 Seminar in Patient Management Systems ..................2
OST 242 Medical Office Transcription II ...............................2
OST 247 CPT Coding in the Medical Office ............................2
OST 248 Diagnostic Coding ................................................2
OST 284 Emerging Technologies ..........................................2

Co-op Work Experience

Select 2 hours from the following courses

COE 111 Co-op Work Experience ..........................................1
COE 112 Co-op Work Experience I .......................................2
COE 121 Co-op Work Experience I .......................................1

Graduation Requirements ...................................................75 Credit Hours

Networking Technology

This curriculum prepares individuals for entry-level positions in medical and allied health facilities. Jobs include transcription, secretary, hospital unit secretary, records clerk, insurance form preparer, patient accounting clerk, and clinical technician.

Course work includes processing, compiling, recording, and maintaining medical records; utilizing office equipment and software; medical law and ethics; billing and coding; and transcribing medical documents.

Employment opportunities include the offices of allied health facilities, HMOs, insurance claims processors, laboratories, and manufacturers and suppliers of medical and hospital equipment.

Networking Technology

The Networking Technology curriculum prepares individuals for employment supporting local- and wide-area networks. Students will learn how to use technologies to provide for data, voice, image, and video communications in business, industry, and education.

Course work includes design, installation, configuration, and management of local- and wide-area network hardware and software. Emphasis is placed on developing proficiency in the use of network management software and the use of hardware such as bridges and routers.

Graduates may find employment in entry-level jobs as local area network managers, network operators, network analysts, and network technicians. Graduates may also be qualified to take...
certification examinations for various network products, depending on their local program.

**NETWORKING TECHNOLOGY — A25340**

**General Education Courses**
- ENG 111 Expository Writing ........................................... 3
- ENG 114 Professional Research and Reporting .................. 3
- HUM 115 Critical Thinking ............................................... 3
- MAT 145 Analytical Mathematics ...................................... 3
- MAT 145A Analytical Mathematics Lab .............................. 1
- PSY 118 Interpersonal Psychology .................................... 3

**Major Courses**
- CIS 110 Introduction to Computers .................................. 3
- CIS 115 Introduction to Programming and Logic ................. 3
- CTS 115 Information Systems Business Concepts .............. 3
- CTS 120 Hardware/Software Support ............................... 3
- DBA 110 Database Concepts ........................................... 3
- NET 125 Networking Basics ............................................. 3
- NET 126 Routing Basics .................................................. 3
- NET 225 Routing and Switching I ..................................... 3
- NET 226 Routing and Switching II ................................... 3
- NET 240 Network Design ................................................. 3
- NOS 110 Operating Systems Concepts .............................. 3
- NOS 120 Linux/UNIX Single User ..................................... 3
- NOS 130 Windows Single User ......................................... 3
- NOS 230 Windows Administration I ................................. 3
- SEC 110 Security Concepts ............................................. 3

**Major Electives List 1**
*Select one of the following complete sets of courses*

**MCSE Option**
- NET 198 Seminar in Networking Technology ..................... 3
- NET 260 Internet Development and Support ...................... 3
- NOS 231 Windows Administration II ............................... 3
- NOS 232 Windows Administration III ............................... 3

**CCNP Option**
- NET 270 Building Scalable Networks .............................. 3
- NET 271 Remote Access Networks ................................... 3
- NET 272 Multi-Layer Networks ....................................... 3
- NET 273 Internetworking Support .................................... 3

**Red Hat Option**
- NOS 220 Linux/UNIX Administration I ............................ 3
- NOS 221 Linux/UNIX Administration II ............................ 3
- NOS 222 Linux/UNIX Administration III ......................... 3
- NOS 232 Windows Administration III ............................. 3

**Data Communication Security Option**
- TNE 231 Data Communication over WAN .......................... 3
- TNE 235 Internet Routing ............................................... 3
- TNE 242 Data Network Design ......................................... 3
- TNE 245 Network Perimeter Security ............................... 3

**Graduation Requirements** ............................................. 73 Credit Hours

**OFFICE SYSTEMS TECHNOLOGY**

The Office Systems Technology curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace.

Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

Graduates should qualify for employment in a variety of positions in business, government, and industry. Job classifications range from entry-level to supervisor to middle management.

**OFFICE SYSTEMS TECHNOLOGY — A25360**

**General Education Courses**
- ENG 111 Expository Writing ........................................... 3
- ENG 114 Professional Research and Reporting .................. 3
- or
- ENG 138 English Grammar ............................................. 3
- MAT 115 Mathematical Models ....................................... 3
- PSY 118 Interpersonal Psychology .................................. 3

**Major Courses**
- BUS 260 Business Communications ............................... 3
- CIS 111 Basic PC Literacy ............................................. 2
- CIS 120 Spreadsheet I ................................................ 3
- CIS 152 Database Concepts and Applications ................ 3
- CIS 169 Business Presentations ..................................... 2
- OST 122 Office Computations ........................................ 2
- OST 132 Keyboard Skill Building ................................... 2
- OST 134 Text Entry and Formatting ................................ 3
- OST 135 Advanced Text Entry and Formatting ................. 4
- OST 136 Word Processing ............................................. 2
- OST 137 Office Software Applications .......................... 2
- OST 138 Advanced Software Applications ..................... 3
- OST 164 Text Editing Applications ............................... 3
- OST 181 Introduction to Office Systems ......................... 3
- OST 184 Records Management ....................................... 2
- OST 188 Issues in Office Technology ............................ 2
- OST 233 Office Publications Design .............................. 3
- OST 236 Advanced Word/Information Processing ............ 3
- OST 284 Emerging Technologies .................................... 2
- OST 286 Professional Development ............................... 3
- OST 289 Office Systems Management ........................... 3
- OST 298 Seminar in Office Systems Financial Software .... 3

**Co-op Work Experience**
*Select 2 hours from the following courses*
- COE 111 Co-op Work Experience I ................................ 1
- COE 112 Co-op Work Experience I ......................... 2
- COE 121 Co-op Work Experience II ....................... 1

**Graduation Requirements** ............................................. 75 Credit Hours
OFFICE SYSTEMS TECHNOLOGY/LEGAL

Legal is a concentration under the curriculum title of Office Systems Technology. This curriculum prepares individuals for entry-level positions in legal or government-related offices and provides professional development for the currently employed.

Course work includes terminology, operational procedures, preparation and transcription of documents, computer software, and court-related functions as they relate to the legal office profession. Emphasis is placed on the development of accuracy, organizational skills, discretion, and professionalism.

Graduates should qualify for employment in corporate legal departments; private practices, including real estate and estate planning; and city, state, and federal government offices. With appropriate work experience, graduates may apply for certification as a Professional Legal Secretary (PLS).

OFFICE SYSTEMS TECHNOLOGY/LEGAL — A2536A

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>English Grammar</td>
<td>3</td>
</tr>
<tr>
<td>ENG 138</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 115</td>
<td>Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 260</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Spreadsheet I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 152</td>
<td>Database Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 169</td>
<td>Business Presentations</td>
<td>2</td>
</tr>
<tr>
<td>CSE 122</td>
<td>Keyboard Skill Building</td>
<td>2</td>
</tr>
<tr>
<td>CSE 134</td>
<td>Text Entry and Formatting</td>
<td>3</td>
</tr>
<tr>
<td>CSE 135</td>
<td>Advanced Text Entry and Formatting</td>
<td>4</td>
</tr>
<tr>
<td>CSE 136</td>
<td>Word Processing</td>
<td>2</td>
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<tr>
<td>CSE 137</td>
<td>Office Software Applications</td>
<td>2</td>
</tr>
<tr>
<td>CSE 155</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>CSE 156</td>
<td>Legal Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>CSE 164</td>
<td>Text Editing Applications</td>
<td>3</td>
</tr>
<tr>
<td>CSE 184</td>
<td>Records Management</td>
<td>2</td>
</tr>
<tr>
<td>CSE 236</td>
<td>Advanced Word/Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>CSE 252</td>
<td>Legal Transcription I</td>
<td>3</td>
</tr>
<tr>
<td>CSE 284</td>
<td>Emerging Technologies</td>
<td>2</td>
</tr>
<tr>
<td>CSE 286</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>CSE 289</td>
<td>Office Systems Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Co-op Work Experience

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience II</td>
<td>1</td>
</tr>
</tbody>
</table>

Graduation Requirements........................................... 71 Credit Hours

RADIOGRAPHY

The Radiography curriculum prepares the graduate to be a radiographer, a skilled health care professional who uses radiation to produce images of the human body.

Course work includes clinical rotations to area health care facilities, radiographic exposure, image processing, radiographic procedures, physics, pathology, patient care and management, radiation protection, quality assurance, anatomy and physiology, and radiobiology.

Graduates of accredited programs are eligible to apply to take the American Registry of Radiologic Technologists’ national examination for certification and registration as medical radiographers. Graduates may be employed in hospitals, clinics, physicians’ offices, medical laboratories, government agencies, and industry.

RADIOGRAPHY — A45700

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 163</td>
<td>Basic Anatomy and Physiology</td>
<td>5</td>
</tr>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>RAD 110</td>
<td>Radiography Introduction and Patient Care</td>
<td>3</td>
</tr>
<tr>
<td>RAD 111</td>
<td>Radiographic Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>RAD 112</td>
<td>Radiographic Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>RAD 121</td>
<td>Radiographic Imaging I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 122</td>
<td>Radiographic Imaging II</td>
<td>2</td>
</tr>
<tr>
<td>RAD 131</td>
<td>Radiographic Physics I</td>
<td>2</td>
</tr>
<tr>
<td>RAD 151</td>
<td>Radiographic Clinical Education I</td>
<td>2</td>
</tr>
<tr>
<td>RAD 161</td>
<td>Radiographic Clinical Education II</td>
<td>5</td>
</tr>
<tr>
<td>RAD 171</td>
<td>Radiographic Clinical Education III</td>
<td>4</td>
</tr>
<tr>
<td>RAD 211</td>
<td>Radiographic Procedures III</td>
<td>3</td>
</tr>
<tr>
<td>RAD 231</td>
<td>Radiographic Physics II</td>
<td>2</td>
</tr>
<tr>
<td>RAD 241</td>
<td>Radiation Protection</td>
<td>2</td>
</tr>
<tr>
<td>RAD 245</td>
<td>Radiographic Quality Management</td>
<td>2</td>
</tr>
<tr>
<td>RAD 251</td>
<td>Radiographic Clinical Education IV</td>
<td>7</td>
</tr>
<tr>
<td>RAD 261</td>
<td>Radiographic Clinical Education V</td>
<td>7</td>
</tr>
<tr>
<td>RAD 271</td>
<td>Radiography Capstone</td>
<td>1</td>
</tr>
</tbody>
</table>

Graduation Requirements........................................... 72 Credit Hours

SIMULATION AND GAME DEVELOPMENT

The Simulation and Game Development curriculum provides a broad background in simulation and game development with practical applications in creative arts, visual arts, audio/video technology, creative writing, modeling, design, programming and management.

Students will receive hands-on training in design, 3D modeling, software engineering, database administration and programming for the purpose of creating simulations and games.

Graduates should qualify for employment as designers, artists, animators, programmers, database administrators, testers, quality assurance analysts, engineers and administrators in the entertainment industry, the health care industry, engineering, forensics, education, NASA and government agencies.
SIMULATION AND GAME DEVELOPMENT—A25450

General Education Courses

DRA 126 Storytelling ................................................................. 3
ENG 111 Expository Writing ..................................................... 3
ENG 113 Literature-Based Research ........................................... 3
HIS 121 Western Civilization I ................................................. 3
MAT 121 Algebra/Trigonometry ................................................ 3
PHY 151 College Physics I ....................................................... 4
PSY 150 General Psychology ................................................... 3

Major Courses

CTS 115 Information Systems Business Concepts ...................... 3
SGD 111 SGD Intro. to Simulation and Game Development ........ 3
SGD 112 SGD Design ............................................................... 3
SGD 113 SGD Programming .................................................... 3
SGD 114 3D Modeling ............................................................. 3
SGD 161 SG Animation ........................................................... 3
SGD 163 SG Documentation .................................................... 3
SGD 167 SG Ethics ................................................................. 3
SGD 174 SG Level Design ....................................................... 3
SGD 212 SGD Design II .......................................................... 3
SGD 213 SGD Programming II ................................................ 3
SGD 214 3D Modeling II ......................................................... 3
SGD 274 SG Level Design II ..................................................... 3
SGD 285 SG Software Engineering ........................................... 3
SGD 289 SGD Project ............................................................. 3

Major Electives List 1
Select 3 hours from the following courses

CTS 287 Emerging Technologies .............................................. 3
SGD 123 Windows/Console Programming .................................. 3
SGD 124 MMO Programming .................................................. 3
SGD 125 SG Artificial Intelligence ............................................ 3
SGD 164 SG Audio/Video ....................................................... 3
SGD 165 SG Character Development ....................................... 3
SGD 193 Selected Topics in SGD .............................................. 3

Major Electives List 2
Select 3 hours from the following courses

COE 113 Co-op Work Experience I ........................................... 3
SGD 126 SG Engine Design ..................................................... 3
SGD 162 SGD 3D Animation .................................................... 3
SGD 166 SG Physiology/Kinesiology ....................................... 3
SGD 168 Wireless SG Programming ........................................ 3
SGD 170 Handheld SG Programming ....................................... 3
SGD 171 Flash SG Programming ............................................... 3
SGD 172 Virtual SG Environments ........................................... 3
SGD 173 Lighting/Shading Algorithms ...................................... 3
SGD 293 Selected Topics in SGD .............................................. 3

Graduation Requirements .................................................... 76 Credit Hours

SURVEYING TECHNOLOGY

The Surveying Technology curriculum provides training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other areas of property description and measurements.

Course work includes the communication and computational skills required for boundary, construction, route, and control surveying, photogrammetry, topography, drainage, surveying law, and subdivision design, with emphasis upon applications of electronic data collection and related software including CAD.

Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, GPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Registered Land Surveyor in North Carolina.

SURVEYING TECHNOLOGY — A40380

General Education Courses

ENG 111 Expository Writing .................................................... 3
ENG 114 Professional Research and Reporting .......................... 3
MAT 121 Algebra and Trigonometry ........................................ 3
Humanities/Fine Arts Elective ................................................ 3
Social/Behavioral Science Elective ......................................... 3

Major Courses

CIS 111 Basic PC Literacy ....................................................... 3
CIV 110 Statics/Strength of Materials ..................................... 4
CIV 125 Civil/Surveying CAD ............................................... 3
COE 112 Co-op Work Experience I ........................................... 2
DFT 120 Advanced CAD ......................................................... 2
CIV 211 Hydraulics and Hydrology ......................................... 3
EGR 115 Introduction to Technology ....................................... 4
GIS 111 Introduction to GIS .................................................... 4
GIS 112 Introduction to GPS ................................................... 3
MAT 122 Algebra/Trigonometry II .......................................... 3
MAT 123 Surveying Technology .............................................. 3
SRV 110 Surveying I ............................................................. 4
SRV 111 Surveying II ............................................................ 4
SRV 210 Surveying III ........................................................... 4
SRV 220 Surveying Law ........................................................ 3
SRV 230 Subdivision Planning ................................................ 3
SRV 240 Topography/Site Surveying ...................................... 4
SRV 260 Field and Office Practices ........................................ 2
SRV 297 Seminar in Surveying Technology ............................. 2

Graduation Requirements .................................................... 68 Credit Hours


**WEB TECHNOLOGIES**

The Web Technologies curriculum prepares graduates for careers in the information technology arena using computers and distributed computing to disseminate and collect information via the web.

Course work in this program covers the terminology and use of computers, network devices, networks, servers, databases, applications, programming languages, as well as web applications, site development and design. Studies will provide opportunity for students to learn related industry standards.

Graduates should qualify for career opportunities as designers, administrators, or developers in the areas of web applications, websites, web services, and related areas of distributed computing.

**WEB TECHNOLOGIES — A25290**

**General Education Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Mathematics Lab</td>
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<tr>
<td>PSY 150</td>
<td>General Psychology</td>
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</table>

**Humanities/Fine Arts Elective**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
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<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concepts</td>
<td>3</td>
</tr>
<tr>
<td>DBA 110</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NET 110</td>
<td>Networking Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
<td>3</td>
</tr>
<tr>
<td>WEB 110</td>
<td>Internet/Web Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>WEB 111</td>
<td>Introduction to Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 115</td>
<td>Web Markup and Scripting</td>
<td>3</td>
</tr>
<tr>
<td>WEB 120</td>
<td>Introduction to Internet Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>WEB 140</td>
<td>Web Development Tools</td>
<td>3</td>
</tr>
<tr>
<td>WEB 180</td>
<td>Active Server Pages</td>
<td>3</td>
</tr>
<tr>
<td>WEB 210</td>
<td>Web Design</td>
<td>3</td>
</tr>
<tr>
<td>WEB 230</td>
<td>Implementing Web Servers</td>
<td>3</td>
</tr>
<tr>
<td>WEB 250</td>
<td>Database-Driven Websites</td>
<td>3</td>
</tr>
<tr>
<td>WEB 260</td>
<td>E-Commerce Infrastructure</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Electives List 1**

*Select 3 hours from the following courses*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
</tr>
<tr>
<td>WEB 182</td>
<td>PHP Programming</td>
<td>3</td>
</tr>
<tr>
<td>WEB 187</td>
<td>Wireless/Internet Programming</td>
<td>3</td>
</tr>
<tr>
<td>WEB 193</td>
<td>Selected Topics in Web Technologies</td>
<td>3</td>
</tr>
<tr>
<td>WEB 198</td>
<td>Seminar in Web Technologies: Microsoft FrontPage</td>
<td>3</td>
</tr>
<tr>
<td>WEB 211</td>
<td>Advanced Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 215</td>
<td>Advanced Markup and Scripting</td>
<td>3</td>
</tr>
<tr>
<td>WEB 285</td>
<td>Emerging Web Technologies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Electives List 2**

*Select 3 hours from the following courses*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 141</td>
<td>Visual C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>GRD 110</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 185</td>
<td>ColdFusion Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

**Graduation Requirements**

*73 Credit Hours*
DIPLOMA PROGRAMS*

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Computed Tomography and Magnetic Resonance Imaging Technology
Dental Assisting
Early Childhood Associate
Electrical/Electronics Technology
Heavy Equipment and Transport Technology/Construction Equipment Systems
Industrial Systems Technology
Machining Technology
Manufacturing Technology/Plastics †
Mechanical Drafting Technology
Medical Assisting
Office Systems Technology
Plumbing
Simulation and Game Development
Surgical Technology
Therapeutic Massage
Welding Technology

♦ ♦ ♦ ♦

*Students should contact their advisors for updates to program offerings. Students admitted to programs that require a clinical or co-op component may be required to provide the college with an official criminal background check in order to meet the requirements of the clinical or co-op site. Convictions for certain crimes and/or evidence of drug use may disqualify students from participating in clinical or co-op experiences, which would limit their progress toward graduation.

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments.

Diploma graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — D35100A

General Education Courses

ENG 110 Freshman Composition ............................................. 3
PHY 121 Applied Physics I .................................................. 4

Major Courses

AHR 110 Introduction to Refrigeration ..................................... 5
AHR 111 HVACR Electricity .................................................. 3
AHR 112 Heating Technology ................................................ 4
AHR 113 Comfort Cooling .................................................... 4
AHR 114 Heat Pump Technology ............................................ 4
AHR 115 Refrigeration Systems ............................................. 2
AHR 130 HVAC Controls ..................................................... 3
AHR 133 HVAC Servicing ..................................................... 4
AHR 151 HVAC Duct Systems I .......................................... 2
AHR 160 Refrigerant Certification ......................................... 1
AHR 210 Residential Building Code ..................................... 2
AHR 211 Residential System Design .................................... 3
WLD 112 Basic Welding Processes ..................................... 2

Graduation Requirements .................................................... 46 Credit Hours

AUTOMOTIVE SYSTEMS TECHNOLOGY

The Automotive Systems Technology curriculum prepares individuals for employment as automotive service technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic course work. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

Wake Technical Community College

2006-2007 Catalog
Volume XVIII No. 3 July 2007
COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE IMAGING TECHNOLOGY — D45200

General Education Courses

ENG 111 Expository Writing ................................................. 3
ENG 115 Technology and Society ............................................. 3
HUM 110 Technology and Society ............................................. 3
or
HUM 115 Critical Thinking ................................................... 3

Major Courses

CAT 210 CT Physics and Equipment ........................................... 3
CAT 211 CT Procedures ......................................................... 4
CAT 231 CT Clinical Practicum ............................................... 11
MRI 210 MRI Physics and Equipment ........................................ 3
MRI 211 MRI Procedures ......................................................... 4
MRI 225 MRI Clinical Practicum .............................................. 5
MRI 231 MRI Clinical Practicum .............................................. 11

Graduation Requirements ................................................. 47 Credit Hours

DENTAL ASSISTING

The Dental Assisting curriculum prepares individuals to assist the dentist in the delivery of dental treatment and to function as integral members of the dental team while performing chairside and related office and laboratory procedures.

Course work includes instruction in general studies, biomedical sciences, dental sciences, clinical sciences, and clinical practice. A combination of lecture, laboratory, and clinical experiences provide students with knowledge in infection/hazard control, radiography, dental materials, preventive dentistry, and clinical procedures.

Graduates may be eligible to take the Dental Assisting National Board Examination to become Certified Dental Assistants. As a Dental Assistant II, defined by the Dental Laws of North Carolina, graduates work in dental offices and other related areas.

DENTAL ASSISTING — D45240

General Education Courses

BIO 106 Introduction to Anatomy/Physiology/Microbiology ................. 3
COM 120 Interpersonal Communication ................................... 3
ENG 110 Expository Writing .................................................. 3
PSY 118 Interpersonal Psychology ........................................... 3

Major Courses

DEN 100 Basic Orofacial Anatomy ........................................... 2
DEN 101 Preclinical Procedures ............................................ 7
DEN 102 Dental Materials .................................................... 5
DEN 103 Dental Sciences ..................................................... 2
DEN 104 Dental Health Education .......................................... 3
DEN 105 Practice Management .............................................. 2
DEN 106 Clinical Practice I .................................................. 5
DEN 107 Clinical Practice II .................................................. 5
DEN 110 Orofacial Anatomy .................................................. 3
DEN 111 Infection/Hazard Control ......................................... 2
DEN 112 Dental Radiography ............................................... 3

Graduation Requirements ................................................. 45 Credit Hours

EARLY CHILDHOOD ASSOCIATE

The Early Childhood diploma prepares individuals to work as assistants with early childhood specialists in children centers, nursery schools, kindergartens, child development centers, hospitals, institutions, camps, and recreation centers. This curriculum provides course work to meet the requirements for middle-level employment and upgrading or the retraining of staff in child development facilities. Instruction includes theory and application in early childhood, growth, and development of children, behavior patterns of children, health practices, and how to deal with the emotional and physical problems of children.
### EARLY CHILDHOOD

**ASSOCIATE — D55220A**

**General Education Courses**
- ENG 111 Expository Writing ........................................ 3
- ENG 112 Argument-Based Research ................................. 3
- MAT 115 Mathematical Models ........................................ 3
- PSY 150 General Psychology ........................................... 3

**Major Courses**
- COE 111 Co-op Work Experience I .................................. 1
- COE 121 Co-op Work Experience II .................................. 1
- EDU 119 Early Childhood Education ................................. 4
- EDU 131 Child, Family, and Community .......................... 3
- EDU 144 Child Development I ......................................... 3
- EDU 145 Child Development II ........................................ 3
- EDU 146 Child Guidance ................................................ 3
- EDU 151 Creative Activities .......................................... 3
- EDU 153 Health, Safety, and Nutrition ............................. 3
- EDU 157 Active Play ..................................................... 3
- EDU 185 Cognitive and Language Activities ....................... 3
- EDU 221 Children with Special Needs .............................. 3

**Graduation Requirements** ....................................... 45 Credit Hours

### ELECTRICAL/ELECTRONICS TECHNOLOGY

**— D35220A**

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial, and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical/electronics field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical/electronic systems.

**General Education Courses**
- ENG 110 Freshman Composition ................................. 3
- PSY 118 Interpersonal Psychology .................................. 3

**Major Courses**
- ELC 112 DC/AC Electricity ........................................ 5
- ELC 113 Basic Wiring I .............................................. 4
- ELC 114 Basic Wiring II ............................................ 4
- ELC 115 Industrial Wiring .......................................... 4
- ELC 117 Motors and Controls ...................................... 4
- ELC 118 National Electrical Code ................................. 2
- ELC 119 NEC Calculations .......................................... 2
- ELC 126 Electrical Computations ................................ 2
- ELC 128 Introduction to PLC ...................................... 3
- ELC 134 Transformer Applications ............................... 2
- ELC 229 Industrial Electronics ................................... 4

**Graduation Requirements** ....................................... 43 Credit Hours

### HEAVY EQUIPMENT AND TRANSPORT

**TECHNOLOGY/CONSTRUCTION EQUIPMENT SYSTEMS**

Construction Equipment Systems is a concentration under the curriculum title of Heavy Equipment and Transport Technology. This curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair construction equipment systems. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and electrical and hydraulics systems. The concentration courses will include transmissions, brakes, undercarriage, and equipment repair. Other related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

**General Education Courses**
- ENG 110 Freshman Composition ................................. 3
- PHY 121 Applied Physics I .......................................... 4

**Major Courses**
- ELC 127 Software for Technicians .............................. 2
- HET 110 Diesel Engines ............................................ 6
- HET 112 Diesel Electrical Systems ............................... 5
- HET 114 Power Trains .............................................. 5
- HET 134 Mechanical Fuel Injection ............................. 3
- HYD 134 Hydraulic/Hydrostatic Construction ................. 4
- PME 113 Construction Equipment Repair ....................... 2
- PME 117 Equipment Braking Systems ........................... 3
- PME 118 Undercarriage Components ............................ 2

**Major Electives**
- Select 6 hours from the following courses
  - ELC 112 Diesel Electronics System ............................ 4
  - ELC 113 Electronic Fuel Injection ............................... 2
  - HET 115 Electronic Engines ...................................... 3
  - HET 128 Medium/Heavy Duty Tune-up .......................... 2
  - HET 192 Selected Topics in Heavy Equipment and Transport Technology ................................................... 2

**Hydraulics Elective**
- Select one of the following courses
  - HYD 111 Mobile Hydraulic Systems ........................... 3
  - HYD 112 Hydraulics/Medium/Heavy Duty ....................... 2

**Graduation Requirements** ......................... 47-48 Credit Hours
INDUSTRIAL SYSTEMS TECHNOLOGY

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

INDUSTRIAL SYSTEMS TECHNOLOGY — D50240A

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHR 112</td>
<td>Heating Technology</td>
<td>4</td>
</tr>
<tr>
<td>AHR 113</td>
<td>Comfort Cooling</td>
<td>4</td>
</tr>
<tr>
<td>BPR 130</td>
<td>Blueprint Reading/Construction</td>
<td>2</td>
</tr>
<tr>
<td>ELC 112</td>
<td>DC/AC Electricity</td>
<td>5</td>
</tr>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 110</td>
<td>Workplace Safety</td>
<td>1</td>
</tr>
<tr>
<td>MNT 110</td>
<td>Introduction to Maintenance Procedures</td>
<td>2</td>
</tr>
<tr>
<td>MNT 150</td>
<td>Basic Building Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>MNT 240</td>
<td>Industrial Equipment Troubleshooting</td>
<td>2</td>
</tr>
<tr>
<td>PLU 111</td>
<td>Introduction to Basic Plumbing</td>
<td>2</td>
</tr>
<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements ............................................ 38 Credit Hours

MANUFACTURING TECHNOLOGY/PLASTICS †

Plastics is a concentration under the curriculum title of Manufacturing Technology. This curriculum provides training in all aspects of the polymer processing industry, one of today’s fastest growing manufacturing technologies. It will prepare individuals for employment by utilizing the latest technologies in both plastics materials and plastics processing.

Course work includes rigorous study of the polymer processing industry, including materials technology, injection molding, extrusion, thermoforming, blow molding and other related areas. Students also will gain knowledge in machine operation, maintenance, setup, design and research, quality assurance and safety.

Diploma graduates should qualify for employment in the design and/or production of plastic-related items, including such job titles as molding technician, estimator, QC technician, setup technician or supervisor.

MANUFACTURING TECHNOLOGY/PLASTICS – D5032AB †

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>or MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 131</td>
<td>Introduction to Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 131A</td>
<td>Introduction to Chemistry Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>PLA 115</td>
<td>Polymer Processing</td>
<td>3</td>
</tr>
<tr>
<td>PLA 120</td>
<td>Injection Molding</td>
<td>3</td>
</tr>
<tr>
<td>PLA 210</td>
<td>Mold Maintenance/Design</td>
<td>3</td>
</tr>
<tr>
<td>PLA 215</td>
<td>Polymeric Materials</td>
<td>3</td>
</tr>
<tr>
<td>PLA 220</td>
<td>Moldflow</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives List 1

Choose one of the following

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR 112</td>
<td>Introduction to Automation</td>
<td>3</td>
</tr>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 128</td>
<td>Industrial Leadership</td>
<td>2</td>
</tr>
</tbody>
</table>
MECHANICAL DRAFTING TECHNOLOGY

The Mechanical Drafting Technology curriculum prepares technicians to produce drawings of mechanical parts, components of mechanical systems, and mechanisms. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

Course work includes mechanical drafting, CAD, and proper drawing documentation. Concepts such as machine shop processes, basic materials, and physical sciences as they relate to the design process are also included. The use of proper dimensioning and tolerance techniques is stressed.

Graduates should qualify for employment in mechanical areas such as manufacturing, fabrication, research and development, and service industries.

MECHANICAL DRAFTING TECHNOLOGY — D50340A

General Education Courses

ENG 110 Freshman Composition 3
PSY 118 Interpersonal Psychology 3

Major Courses

DDF 211 Design Drafting I 4
DDF 221 Design Drafting Project 2
DFT 111 Technical Drafting I 2
DFT 111A Technical Drafting I Lab 1
DFT 112 Technical Drafting II 2
DFT 112A Technical Drafting II Lab 1
DFT 121 Introduction to GD and T 2
DFT 151 CAD I 3
DFT 152 CAD II 3
DFT 153 CAD III 3
DFT 214 Descriptive Geometry 2
ISC 110 Workplace Safety 1
MEC 110 Introduction to CAD/CAM 2
MEC 111 Machine Processes I 3
MEC 141 Introduction to Manufacturing Processes 3

Graduation Requirements 40 Credit Hours

MEDICAL ASSISTING

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, medical transcription, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electro-cardiography, supervised medication administration; and ethical/legal issues associated with patient care.

MEC 110 Mathematical Measurement 3
ENG 111 Expository Writing 3
MAT 110 Expository Writing 3

Graduation Requirements 38 Credit Hours

MEDICAL ASSISTING — D45400A

General Education Courses

ENG 111 Expository Writing 3
MAT 110 Mathematical Measurement 3

Major Courses

BIO 161 Intro to Human Biology 3
MED 110 Orientation to Medical Assisting 1
MED 113 Orientation to Clinical Setting II 2
MED 114 Professional Interaction in Health Care 1
MED 118 Medical Law and Ethics 2
MED 121 Medical Terminology I 3
MED 122 Medical Terminology II 3
MED 130 Administrative Office Procedures I 2
MED 131 Administrative Office Procedures II 2
MED 134 Medical Transcription 3
MED 140 Examining Room Procedures I 5
MED 150 Laboratory Procedures I 5
MED 260 Medical Clinical Examship 5
MED 262 Clinical Perspectives 1

Graduation Requirements 44 Credit Hours

OFFICE SYSTEMS TECHNOLOGY

The Office Systems Technology diploma program is designed for the individual entering, upgrading, or retraining in the office occupation field. Special emphasis is on keyboarding and basic office duties and responsibilities.

Through study in areas such as keyboarding, records management, written communications, machine transcription, and word processing the individual will be able to function effectively in a variety of office occupations.

OFFICE SYSTEMS TECHNOLOGY — D25360A

General Education Courses

ENG 111 Expository Writing 3
ENG 114 Professional Research and Reporting 3
or
ENG 138 English Grammar 3

Major Courses

CIS 111 Basic PC Literacy 2
CIS 120 Spreadsheet I 3
OST 122 Office Computations 2
OST 134 Text Entry and Formatting 3
OST 136 Word Processing 2
OST 137 Office Software Applications 2
OST 164 Text Editing Applications 3

2006-2007 Catalog
PLUMBING

The Plumbing curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repair of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain knowledge of state codes and requirements.

Graduates should qualify for employment at parts supply houses, maintenance companies, and plumbing contractors to assist with various plumbing applications.

PLUMBING — D35300

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ENG 110</td>
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<tr>
<td>PHY 121</td>
<td>Applied Physics I</td>
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Major Courses

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BPR 130</td>
<td>Blueprint Reading/Construction</td>
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<tr>
<td>PLU 110</td>
<td>Modern Plumbing</td>
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<tr>
<td>PLU 120</td>
<td>Plumbing Applications</td>
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<td>PLU 130</td>
<td>Plumbing Systems</td>
<td>6</td>
</tr>
<tr>
<td>PLU 140</td>
<td>Introduction to Plumbing Codes</td>
<td>2</td>
</tr>
<tr>
<td>PLU 150</td>
<td>Plumbing Diagrams</td>
<td>2</td>
</tr>
<tr>
<td>PLU 192</td>
<td>Selected Topics in Plumbing</td>
<td>2</td>
</tr>
<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements ..................................41 Credit Hours

SIMULATION AND GAME DEVELOPMENT

This diploma is designed for individuals seeking employment in the digital game, movie industry, or related companies, as game programmers, programmer trainees, game testers or designers/developers.

Topics include the study of applications in game engines, logic, graphics, game programming API's, game design implementation techniques. Primary emphasis is hands-on training in digital game design/programming that provides a student the ability to adapt as digital game technology evolves. Upon completion, students will have the necessary skills to develop computer games using appropriate tools.

SIMULATION AND GAME DEVELOPMENT — D25450A

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>DRA 126</td>
<td>Storytelling</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra/Trigonometry I</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

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<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concepts</td>
<td>3</td>
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<tr>
<td>SGD 111</td>
<td>Introduction to Simulation and Game Development</td>
<td>3</td>
</tr>
<tr>
<td>SGD 112</td>
<td>SGD Design</td>
<td>3</td>
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<tr>
<td>SGD 113</td>
<td>SGD Programming</td>
<td>3</td>
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<tr>
<td>SGD 114</td>
<td>3D Modeling</td>
<td>3</td>
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<tr>
<td>SGD 174</td>
<td>SG Level Design</td>
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<tr>
<td>SGD 212</td>
<td>SGD Design II</td>
<td>3</td>
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<tr>
<td>SGD 213</td>
<td>SGD Programming II</td>
<td>3</td>
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<tr>
<td>SGD 214</td>
<td>3D Modeling II</td>
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<tr>
<td>SGD 285</td>
<td>Software Engineering</td>
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<tr>
<td>SGD 289</td>
<td>SGD Project</td>
<td>3</td>
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</tbody>
</table>

Graduation Requirements ..................................41 Credit Hours

SURGICAL TECHNOLOGY

The Surgical Technology curriculum prepares individuals to assist in the care of the surgical patient in the operating room and to function as a member of the surgical team.

Students will apply theoretical knowledge to the care of patients undergoing surgery and develop skills necessary to prepare supplies, equipment, and instruments; maintain aseptic conditions; prepare patients for surgery; and assist surgeons during operations.

Employment opportunities include labor/delivery/ emergency departments, inpatient/ outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

SURGICAL TECHNOLOGY — D45740

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>BIO 163</td>
<td>Basic Anatomy and Physiology</td>
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Major Courses

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUR 110</td>
<td>Introduction to Surgical Technology</td>
<td>3</td>
</tr>
<tr>
<td>SUR 111</td>
<td>Preoperative Patient Care</td>
<td>7</td>
</tr>
<tr>
<td>SUR 122</td>
<td>Surgical Procedures I</td>
<td>6</td>
</tr>
<tr>
<td>SUR 123</td>
<td>Clinical Practice I</td>
<td>7</td>
</tr>
<tr>
<td>SUR 134</td>
<td>Surgical Procedures II</td>
<td>5</td>
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<tr>
<td>SUR 135</td>
<td>Clinical Practice II</td>
<td>4</td>
</tr>
<tr>
<td>SUR 137</td>
<td>Professional Success Preparation</td>
<td>1</td>
</tr>
</tbody>
</table>

Graduation Requirements ..................................41 Credit Hours
THERAPEUTIC MASSAGE
The Therapeutic Massage curriculum prepares graduates to work in direct client care settings to provide manipulation, methodical pressure, friction and kneading of the body for maintaining wellness or treating alterations in wellness throughout the lifespan.

Courses will include content in normal human anatomy and physiology, therapeutic massage, ethical/legal issues, business practices, nutrition and psychology.

Employment opportunities in North Carolina may be found in hospitals, rehabilitation centers, health departments, home health, medical offices, nursing homes, spas, health and sports clubs, and private practice. Graduates may be eligible to take the National Certification for Therapeutic Massage and Bodywork.

THERAPEUTIC MASSAGE – D45750

General Education Courses
ENG 111 Expository Writing ..................................................3
PSY 118 Interpersonal Psychology ........................................3

Major Courses
BIO 155 Nutrition ..................................................................3
or
BIO 271 Pathophysiology .....................................................3
BIO 163 Basic Anatomy and Physiology ..............................5
BUS 230 Small Business Management ................................3
MTH 110 Fundamentals of Massage ...................................10
MTH 120 Therapeutic Massage Applications ......................10
MTH 125 Ethics of Massage ..................................................2

Graduation Requirements ................................................. 39 Credit Hours

WELDING TECHNOLOGY
The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and non-destructive testing provide the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology curriculum may be employed as entry-level technicians in the welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

WELDING TECHNOLOGY – D50420A

General Education Courses
ENG 110 Freshman Composition ............................................. 3
PHY 121 Applied Physics I ...................................................... 4

Major Courses
WLD 110 Cutting Processes .................................................... 2
WLD 111 Oxygen-Fuel Welding ............................................. 2
WLD 115 SMAW (Stick) Plate .................................................. 5

WLD 116 SMAW (Stick) Plate/ Pipe ........................................ 4
WLD 121 GMAW (MIG) FCAW/Plate ..................................... 4
WLD 122 GMAW (MIG) Plate/ Pipe ....................................... 3
WLD 131 GTAW (TIG) Plate .................................................. 4
WLD 132 GTAW (TIG) Plate/ Pipe ........................................ 3
WLD 141 Symbols and Specifications ..................................... 3
WLD 261 Certification Practices .......................................... 2
WLD 262 Inspection and Testing ........................................... 3

Graduation Requirements .................................................. 42 Credit Hours
CERTIFICATE PROGRAMS*

Advertising and Graphic Design:
  Graphics and Design
  Web and Graphic Design
Air Conditioning, Heating, and Refrigeration Technology
Architectural Technology: Architectural CAD
Automation Engineering Technology
  PLC Programming
  Robotics
Basic Law Enforcement Training
Business Administration:
  Customer Service
  Entrepreneurship
  Sales Development
Business Administration/Human Resources Management
Civil Engineering Technology: Civil Design
Computed Tomography Technology
Computer Engineering Technology:
  C-Programming—Open Source Development
  Linux Kernel Development
  Pentium System Architecture
Computer Information Technology:
  Computer Forensics
  Hardware Troubleshooting (A+)
  IT Support Management
  IT Support Technician (MCDST)
  Microsoft Office Specialist (MOS)
  Spreadsheet Management
Computer Programming:
  C++ Programming
  Computer Science
  JAVA Programming
  Visual BASIC Programming
Construction Management Technology
Culinary Technology
Culinary Technology: Baking
Database Management:
  Oracle DBA Programming
  Oracle Developer
Early Childhood Associate
Early Childhood Associate: Infant/Toddler Care
Electrical/Electronics Technology:
  Commercial Wiring Methods
  Residential Wiring Methods
Electronics Engineering Technology: Basic Electronics
Heavy Equipment and Transport Technology/Construction Equipment Systems:
  Fuel Injection, Electrical, and Electronics
  Hydraulics, Engines, and Transmissions
High Performance Computing:
  Bioinformatics Computing
  Linux/Red Hat Administration
Hotel and Restaurant Management
  Hotel Management
  Restaurant Management
Human Services Technology/Substance Abuse
Industrial Engineering Technology:
  Advanced Quality
  Quality Assurance
Information Systems Security: Network Security Administration
Industrial Systems Technology
Landscape Architecture Technology: Landscape Architecture
Machining Technology
  Machinery Technology: CNC Machining
  Machining Technology/Tool, Die, and Mold Making
Magnetic Resonance Imaging Technology
Manufacturing Technology/Plastics:
  Engineering Materials †
  Manufacturing Practices †
  Plastics Extrusion †
  Plastics Injection Molding †
Mechanical Drafting Technology
Mechanical Engineering Technology:
  Mechanical Design
  Thermal Mechanics
Medical Office Administration:
  Medical Billing and Coding
  Medical Office Specialist
  Medical Transcription Specialist
Networking Technology:
  CISCO Certified Network Associate (CCNA)
  CISCO Certified Network Professional (CCNP)
  Microsoft Certified Systems Engineer (MCSE)
Nursing Assistant
Office Systems Technology:
  Integrated Office Systems
  Office Publications Certificate
  Office Specialist I
  Office Specialist II
  Word Processing
Office Systems Technology/Legal
Phlebotomy
Plumbing:
  Applications and Diagrams
  Modern Plumbing Codes and Blueprint Reading
Real Estate
Real Estate Appraisal
Surveying Technology: Surveying
Web Technologies:
  E-Commerce Programming
  Web Designer
  Web Developer
Welding Technology

*Students should contact their advisors for updates to program offerings. Students admitted to programs that require a clinical or co-op component may be required to provide the college with an official criminal background check in order to meet the requirements of the clinical or co-op site. Convictions for certain crimes and/or evidence of drug use may disqualify students from participating in clinical or co-op experiences, which would limit their progress toward graduation.

† These programs are not open to new students.
ADVERTISING AND GRAPHIC DESIGN: GRAPHICS AND DESIGN — A30100A

GRD 110 Typography I .............................................................. 3
GRD 111 Typography II ............................................................. 3
GRD 151 Computer Design Basics ......................................... 3
GRD 152 Computer Design Technology I ............................. 3
GRD 153 Computer Design Technology II ......................... 3
GRD 263 Illustrative Imaging .................................................... 3

Completion Requirements .................................................... 18 Credit Hours

ADVERTISING AND GRAPHIC DESIGN: WEB AND GRAPHIC DESIGN — A30100B

GRD 110 Typography I .............................................................. 3
GRD 151 Computer Design Basics ......................................... 3
GRD 152 Computer Design Technology I ............................. 3
GRD 153 Computer Design Technology II ......................... 3
WEB 111 Introduction to Web Graphics ............................... 3
WEB 140 Web Development Tools ....................................... 3

Completion Requirements .................................................... 18 Credit Hours

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — C35100B

AHR 111 HVACR Electricity .................................................... 3
AHR 112a Heating Technology-Part 1 ................................ 2
AHR 112b Heating Technology-Part 2 ................................ 2
AHR 113 Comfort Cooling .................................................... 4
AHR 130 HVAC Controls ...................................................... 3
AHR 133 HVAC Servicing .................................................... 4

Completion Requirements .................................................... 18 Credit Hours

ARCHITECTURAL TECHNOLOGY: ARCHITECTURAL CAD — C40100A

ARC 111 Introduction to Architectural Technology .............. 3
ARC 114 Architectural CAD .................................................. 2
ARC 220 Advanced Architectural CAD ............................... 2
ARC 221 Architectural 3-D CAD ........................................ 3
CIV 125 Civil/Surveying CAD ........................................... 3

Completion Requirements .................................................... 13 Credit Hours
AUTOMATION ENGINEERING TECHNOLOGY: PLC PROGRAMMING

AUTOMATION ENGINEERING TECHNOLOGY: PLC PROGRAMMING — C40120B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR 213</td>
<td>Programmable Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ATR 214</td>
<td>Advanced PLCs</td>
<td>4</td>
</tr>
<tr>
<td>ATR 215</td>
<td>Sensors and Transducers</td>
<td>3</td>
</tr>
<tr>
<td>ELN 231</td>
<td>Industrial Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 14 Credit Hours

AUTOMATION ENGINEERING TECHNOLOGY: ROBOTICS

AUTOMATION ENGINEERING TECHNOLOGY: ROBOTICS— C40120C

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR 211</td>
<td>Robot Programming</td>
<td>3</td>
</tr>
<tr>
<td>ATR 213</td>
<td>Programmable Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ATR 214</td>
<td>Advanced PLCs</td>
<td>4</td>
</tr>
<tr>
<td>EGR 125</td>
<td>Applications Software for Tech</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 13 Credit Hours

BUSINESS ADMINISTRATION: CUSTOMER SERVICE

BUSINESS ADMINISTRATION: CUSTOMER SERVICE — C25120B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>BUS 151</td>
<td>People Skills</td>
<td>3</td>
</tr>
<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>MKT 223</td>
<td>Customer Service</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 17 Credit Hours

BUSINESS ADMINISTRATION: ENTREPRENEURSHIP

BUSINESS ADMINISTRATION: ENTREPRENEURSHIP — C25120C

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 139</td>
<td>Entrepreneurship I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 245</td>
<td>Entrepreneurship II</td>
<td>3</td>
</tr>
<tr>
<td>MKT 120</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 12 Credit Hours

BUSINESS ADMINISTRATION: SALES DEVELOPMENT

BUSINESS ADMINISTRATION: SALES DEVELOPMENT — C25120C

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 139</td>
<td>Entrepreneurship I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 245</td>
<td>Entrepreneurship II</td>
<td>3</td>
</tr>
<tr>
<td>MKT 120</td>
<td>Principles of Marketing</td>
<td>3</td>
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</table>

Completion Requirements ........................................ 12 Credit Hours

BASIC LAW ENFORCEMENT TRAINING

BASIC LAW ENFORCEMENT TRAINING — C55120

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJC 100</td>
<td>Basic Law Enforcement Training</td>
<td>18</td>
</tr>
</tbody>
</table>

Major Courses

Completion Requirements ........................................ 18 Credit Hours

Wake Technical Community College

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BUSINESS ADMINISTRATION: 
SALES DEVELOPMENT — C25120A

BUS 121 Business Mathematics ........................................... 3
ENG 111 Expository Writing ................................................. 3
MKT 120 Principles of Marketing ........................................... 3
MKT 123 Fundamentals of Selling ......................................... 3
MKT 221 Consumer Behavior ................................................ 3
PSY 118 Interpersonal Psychology ....................................... 3

Completion Requirements ..............................................18 Credit Hours

BUSINESS ADMINISTRATION/ 
HUMAN RESOURCES MANAGEMENT
Evening Only

This program is intended to prepare students for positions in human resource management in business and government. When they are enrolled in the courses unique to this program, students will be expected to practice the routines that they would have as human resource specialists: write job descriptions, interview job applicants, design and conduct training sessions, and evaluate profit-sharing programs. Also, they will gain respect for the growing body of laws, regulations, and court decisions that affect the daily activities of everyone in the workplace. Those completing this program should be able to provide knowledgeable assistance to higher-level managers, either inside or outside the human resource department.

BUSINESS ADMINISTRATION/HUMAN RESOURCES MANAGEMENT — C2512CA

BUS 153 Human Resource Management ................................ 3
BUS 217 Employment Law and Regulations ............................ 3
BUS 234 Training and Development ........................................ 3
BUS 256 Recruitment, Selection, and Personnel Planning ......... 3
BUS 258 Compensation and Benefits ..................................... 3

Completion Requirements ..............................................15 Credit Hours

CIVIL ENGINEERING TECHNOLOGY: 
CIVIL DESIGN
Day

CIVIL ENGINEERING TECHNOLOGY: 
CIVIL DESIGN— C40140A

CIV 125 Civil/Surveying CAD ............................................. 3
Or
DFT 120 Advanced CAD ................................................... 2
DFT 119 Basic CAD .......................................................... 2
EGR 115 Introduction to Technology .................................... 3
GIS 111 Introduction to GIS ............................................... 3
SRV 110 Surveying I ......................................................... 4

Completion Requirements .......................................14-15 Credit Hours

COMPUTED TOMOGRAPHY TECHNOLOGY

The Computed Tomography Technology Certificate, a specialty for radiographers, prepares the individual to use specialized equipment to visualize cross-sectional anatomical structures and aid physicians in the demonstration of pathologies and disease processes. Individuals entering this certificate program must be registered or registry-eligible radiologic technologists by the American Registry of Radiologic Technologists.

Course work prepares the technologist to provide patient care and perform studies utilizing imaging equipment, professional communication, and quality assurance in scheduled and emergency procedures through academic and clinical studies.

Graduates may be eligible to sit for the American Registry of Radiologic Technologists Advanced-Level testing in the Computed Tomography examination. They may find employment in facilities, which perform these imaging procedures.

COMPUTED TOMOGRAPHY 
TECHNOLOGY — C45200A

CAT 210 CT Physics and Equipment ................................. 3
CAT 211 CT Procedures ..................................................... 4
CAT 231 CT Clinical Practicum ......................................... 11

Completion Requirements .................................18 Credit Hours

COMPUTER ENGINEERING TECHNOLOGY: 
C LANGUAGE PROGRAMMING—OPEN SOURCE DEVELOPMENT
Day and Evening

This certificate provides a solid programming foundation in C and C++, the primary programming languages used for Linux kernel, system, and utility code. Students may choose to substitute Java instead, with permission of the CET department head. Once a solid foundation is built with respect to the key elements of open source programs (i.e. threads, processes, dynamic libraries, and so on), the student will master some of the many tools that support the open source development community. Examples of such tools are CVS, SourceForge, Bugzilla, GNU tools, Eclipse, and scripting languages. The tools covered may evolve to keep pace with the fast changing open source landscape.

Upon completion, students should be able to participate in open source code development, whether contributing bug reports to existing SourceForge projects or sponsoring their own projects.

COMPUTER ENGINEERING 
TECHNOLOGY: C LANGUAGE PROGRAMMING—OPEN SOURCE DEVELOPMENT — C40160B

CET 251 Software Engineering Principles .......................... 4
CSC 133 C Programming ............................................... 3
CSC 134 C++ Programming ............................................ 3
CSC 233 Advanced C ..................................................... 3

Completion Requirements .................................13 Credit Hours
COMPUTER ENGINEERING TECHNOLOGY: LINUX KERNEL DEVELOPMENT  
Day and Evening  
The Linux phenomenon is driven by a combination of the open source Linux kernel, open source tools, and the widespread porting of these to diverse processor platforms. Linux now runs on everything from cell phones to super-servers, and Linux distributions are too numerous to keep up with.  
This certificate provides a foundation in programming languages, development tools, and processor architecture to provide the kernel context, followed by a detailed examination of kernel operation and creation. Various kernel configurations, such as live (CD-bootable) kernels, remote boot (PXE) kernels, and small footprint kernels for embedded systems will be studied and built by the students.

COMPUTER ENGINEERING TECHNOLOGY: LINUX KERNEL DEVELOPMENT — C40160E  
CET 193 Selected Topics in Computer Engineering ............... 3  
CET 222 Computer Architecture .................................... 2  
CET 251 Software Engineering Principles ......................... 4  
CSC 233 Advanced C .................................................. 3  
Completion Requirements ............................................. 12 Credit Hours

COMPUTER ENGINEERING TECHNOLOGY: PENTIUM SYSTEM ARCHITECTURE  
Day and Evening  
The Pentium (x86) processor family, long familiar to consumers due to its dominance in the personal computer market, is increasingly being deployed in new settings from aircraft control to embedded robotic systems. Extension of the x86 platform is also driven by the widespread adoption of Linux, a free, high performance operating system applicable to everything from cell phones to super-servers.  
This certificate provides the student with a solid foundation in digital electronics and microprocessor operations, followed by a specific examination of the Pentium architecture versus PowerPC, AMD, and various microcontrollers. This certificate can help students build a broad range of skills, from understanding how to tune PC performance to building new processor-based systems of their own.

COMPUTER ENGINEERING TECHNOLOGY: PENTIUM SYSTEM ARCHITECTURE — C40160D  
CET 111 Computer Upgrade/Repair I .................................. 3  
CET 222 Computer Architecture .................................... 2  
ELN 133 Digital Electronics ........................................... 4  
ELN 232 Introduction to Microprocessors .......................... 4  
Completion Requirements ............................................. 13 Credit Hours

COMPUTER INFORMATION TECHNOLOGY: COMPUTER FORENSICS  
Day and Evening  
The Computer Forensics certificate is designed to provide students with advanced technical skills and knowledge related to retrieving and securing computer-related information for use in legal investigations.

COMPUTER INFORMATION TECHNOLOGY: COMPUTER FORENSICS—C25260J  
CTS 120 Hardware/Software Support .................................. 3  
CTS 210 Computer Ethics ............................................. 3  
CTS 220 Advanced Hardware/Software Support ................... 3  
CTS 298 Seminar in Computer Information Technology: Computer Forensics ........................................... 3  
NOS 111 Operating System—DOS .................................... 3  
Completion Requirements ............................................. 15 Credit Hours

COMPUTER INFORMATION TECHNOLOGY: HARDWARE TROUBLESHOOTING  
Day and Evening  
This certificate is designed for individuals interested in acquiring advanced technical skills and knowledge to maintain and repair personal computers. Students gain skills in buying parts, upgrading, building, and configuring personal computers. Major hands-on topics include documentation, troubleshooting techniques, PC architectures, disk drives and controller cards, memory management, add-on boards, and communications devices.  
This certificate is designed to prepare the student for A+ certification. A program prerequisite of CIS 110 or CIS 111 is required.

COMPUTER INFORMATION TECHNOLOGY: HARDWARE TROUBLESHOOTING — C25260G  
CTS 120 Hardware/Software Support .................................. 3  
CTS 220 Advanced Hardware/Software Support ................... 3  
NET 110 Networking Concepts ........................................ 3  
NOS 110 Operating System Concepts ............................... 3  
Completion Requirements ............................................. 12 Credit Hours
COMPUTER INFORMATION TECHNOLOGY:
IT SUPPORT MANAGEMENT
Day and Evening

COMPUTER INFORMATION TECHNOLOGY:
IT SUPPORT MANAGEMENT—C25260L

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CTS 118</td>
<td>IS Professional Communication</td>
<td>2</td>
</tr>
<tr>
<td>CTS 240</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CTS 255</td>
<td>Advanced Tech Support Functions</td>
<td>3</td>
</tr>
<tr>
<td>CTS 285</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>CTS 292</td>
<td>Selected Topics in Computer Information Technology: HDI Management Certificate Preparation</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 16 Credit Hours

COMPUTER INFORMATION TECHNOLOGY:
IT SUPPORT TECHNICIAN
Day and Evening

This certificate provides students with the knowledge and practical skills necessary to support users of computing technologies. The course work will help students prepare for the Microsoft Certified Desktop Support Technician (MCDST) certification and develop the ability to work in helpdesk and technical support positions.

COMPUTER INFORMATION TECHNOLOGY:
IT SUPPORT TECHNICIAN—C25260K

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 155</td>
<td>Tech Support Functions</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220</td>
<td>Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 250</td>
<td>User Support and Software Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>CTS 255</td>
<td>Advanced Tech Support Functions</td>
<td>3</td>
</tr>
<tr>
<td>CTS 297</td>
<td>Seminar in Computer Information Technology: MCDST Applications Preparation</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 14 Credit Hours

COMPUTER INFORMATION TECHNOLOGY:
MICROSOFT OFFICE SPECIALIST (MOS)
— C25260A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 125</td>
<td>Presentation Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 235</td>
<td>Integrated Software Advanced</td>
<td>4</td>
</tr>
<tr>
<td>CTS 293</td>
<td>Seminar in Computer Information Technology: Post-Advanced MOS</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 14 Credit Hours

COMPUTER INFORMATION TECHNOLOGY:
SPREADSHEET MANAGEMENT
Day and Evening

This certificate provides advanced-level courses for individuals who wish to acquire expert level spreadsheet skills. Topics include: creating professional looking spreadsheets, macro customization techniques, financial calculations, and utilizing advanced spreadsheet features.

Upon completion, students will gain necessary skills to pursue the Microsoft Office Specialist (MOS) certification examinations in Excel at the Core Level and the Expert Level.

COMPUTER INFORMATION TECHNOLOGY:
SPREADSHEET MANAGEMENT — C25260E

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CTS 130</td>
<td>Spreadsheet</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 230</td>
<td>Advanced Spreadsheet</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 13 Credit Hours

COMPUTER PROGRAMMING:
C++ PROGRAMMING
Day and Evening

The C++ Programming certificate offers courses for students interested in upgrading their programming skills by acquiring proficiency in an object-oriented programming language. This program is also appropriate for individuals who are new to programming. Instruction in C++ programming includes object-oriented programming topics (classes, inheritance, and polymorphism) as well as procedural programming topics (data types, control structures, functions, arrays, pointers and strings).
COMPUTER PROGRAMMING: C++ PROGRAMMING — C25130C

CIS 115 Introduction to Programming and Logic .................. 3
CSC 134 C++ Programming ........................................... 3
CSC 141 Visual C++ Programming .................................... 3
CSC 234 Advanced C++ .................................................. 3
CSC 291 Selected Topics in Computer Programming: C++ Project .... 1

Completion Requirements ............................................. 13 Credit Hours

COMPUTER PROGRAMMING: COMPUTER SCIENCE
Day and Evening

This certificate is designed for the College/University Transfer student who wishes to acquire a foundation in Computer Science. All course work is approved for transferability to a four-year institution. Students will learn computer architecture topics, object-oriented design analysis, software methodology, introductory programming concepts, algorithm analysis, computer ethics, basic network security, and related mathematical topics including encryption techniques. Proficiency in advanced algebra (MAT 080 or its equivalent) is required to enter this program.

COMPUTER PROGRAMMING: COMPUTER SCIENCE — C25130E

CIS 115 Introduction to Programming and Logic .................. 3
CSC 120 Computing Fundamentals I .................................. 4
CSC 130 Computing Fundamentals II .................................. 4
CSC 134 C++ Programming ............................................... 3
or
CSC 151 JAVA Programming ............................................. 3

Completion Requirements ............................................. 14 Credit Hours

COMPUTER PROGRAMMING: JAVA PROGRAMMING
Day and Evening

This certificate is designed for the student who wishes to acquire programming skills for Internet and Intranet application development. Students will learn to program Internet user interfaces, HTML, C++, JAVA, and other computer languages currently used for Internet and Intranet application and applet development.

COMPUTER PROGRAMMING: JAVA PROGRAMMING — C25130A

CIS 115 Introduction to Programming and Logic .................. 3
CSC 151 JAVA Programming ............................................. 3
CSC 251 Advanced JAVA Programming ................................ 3
CSC 258 JAVA Enterprise Programs .................................. 3
CSC 278 JAVA Message Service ........................................ 3

Completion Requirements ............................................. 15 Credit Hours

COMPUTER PROGRAMMING: VISUAL BASIC PROGRAMMING
Day and Evening

Designed for individuals interested in acquiring the advanced programming skills necessary to design and implement Visual BASIC programs. The student will learn how to design Visual BASIC programs using event-driven programming techniques, implement current interface design standards, create reusable code, manipulate records in both a file-based system and a database system, and program customization using API calls. Emphasis is placed on proper program design techniques.

COMPUTER PROGRAMMING: VISUAL BASIC PROGRAMMING — C25130B

CIS 115 Introduction to Programming and Logic .................. 3
CSC 139 Visual BASIC Programming .................................. 3
CSC 239 Advanced Visual BASIC ....................................... 3
CSC 292 Selected Topics in Computer Programming: Visual Basic Project .... 2
DBA 110 Database Concepts ........................................... 3
WEB 180 Active Server Pages ......................................... 3

Completion Requirements ............................................. 17 Credit Hours

CONSTRUCTION MANAGEMENT TECHNOLOGY
Evening Only

The Construction Management Technology Certificate is designed for the individuals that have a background in the construction industry and wish to advance in that industry. Topics include Safety; OSHA Regulations and Compliance; Construction Blueprint Reading; Project Planning and Scheduling; Cost and Production; Human Relations Issues; and Professional Construction Supervision.

Individuals that complete this certificate will have completed an essential step in the process of becoming a construction project manager, superintendent, foreman, or estimator.

CONSTRUCTION MANAGEMENT TECHNOLOGY — C35190B

BPR 130 Blueprint Reading/Construction .......................... 2
CMT 210 Professional Construction Supervision .................. 3
CMT 212 Total Safety Performance ................................... 3
CMT 214 Planning and Scheduling .................................... 3
CMT 216 Costs and Productivity ....................................... 3
CMT 218 Human Relations Issues ...................................... 3

Completion Requirements ............................................. 17 Credit Hours
**CULINARY TECHNOLOGY**  Day and Evening

The Culinary Certificate includes basic courses to help prepare students for entry into the culinary field or to advance in their current foodservice jobs. Courses address both the art and the science of food preparation. Students learn basic sanitation, cooking and baking principles, and garnishing and presentation skills. Modern supervision techniques are also studied and practiced. The majority of class time is devoted to actual hands-on kitchen skill development. Courses credits are transferable to the Culinary Technology associate degree program.

**CULINARY TECHNOLOGY — C55200A**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL 110</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>CUL 140</td>
<td>Basic Culinary Skills</td>
<td>5</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUL 160</td>
<td>Baking I</td>
<td>3</td>
</tr>
<tr>
<td>CUL 170</td>
<td>Garde-Manger I</td>
<td>3</td>
</tr>
<tr>
<td>CUL 240</td>
<td>Advanced Culinary Skills</td>
<td>5</td>
</tr>
<tr>
<td>HRM 145</td>
<td>Hospitality Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 18 Credit Hours

**CULINARY TECHNOLOGY: BAKING**  Day and Evening

The Baking certificate includes basic courses to help prepare students for entry into the baking field or to advance in their current food service jobs. Course addresses both the art and the science of baking. Students learn basic sanitation, cooking and baking principles, as well as pastry, confection and production baking skills. The majority of class is devoted to actual hands-on baking skill development.

**CULINARY TECHNOLOGY: BAKING — C55200B**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPA 250</td>
<td>Desert and Bread Production</td>
<td>5</td>
</tr>
<tr>
<td>CUL 110</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>CUL 160</td>
<td>Baking I</td>
<td>3</td>
</tr>
<tr>
<td>CUL 260</td>
<td>Baking II</td>
<td>3</td>
</tr>
<tr>
<td>CUL 280</td>
<td>Pastries and Confections</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 16 Credit Hours

**DATABASE MANAGEMENT: ORACLE DBA PROGRAMMING — C25150B**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA 120</td>
<td>Database Programming</td>
<td>3</td>
</tr>
<tr>
<td>DBA 193</td>
<td>Selected Topics in Database Management: Oracle Optimization</td>
<td>3</td>
</tr>
<tr>
<td>DBA 230</td>
<td>Database in Corporate Environments</td>
<td>3</td>
</tr>
<tr>
<td>DBA 240</td>
<td>Database Analysis/Design</td>
<td>3</td>
</tr>
<tr>
<td>DBA 260</td>
<td>Oracle DBMS Administration</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 15 Credit Hours

**DATABASE MANAGEMENT: ORACLE DEVELOPER**  Day and Evening

This certificate is designed for the student who wishes to acquire Oracle 9i database developer skills. Students will learn database theory and the logic necessary to build enterprise-class, scalable database applications. In addition, students will learn to construct sophisticated database forms and to develop logic skills in reports processing. Upon completion, students will be prepared to pursue certification examinations in Oracle Developer Associate and Oracle Developer Professional. Completion of CIS 115 or its equivalent is required before entering this program.

**DATABASE MANAGEMENT: ORACLE DEVELOPER — C25150A**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA 120</td>
<td>Database Programming</td>
<td>3</td>
</tr>
<tr>
<td>DBA 192</td>
<td>Selected Topics in Database Management: Oracle Internet Applications</td>
<td>1</td>
</tr>
<tr>
<td>DBA 220</td>
<td>Oracle DB Programming II</td>
<td>3</td>
</tr>
<tr>
<td>DBA 240</td>
<td>Database Analysis/Design</td>
<td>3</td>
</tr>
<tr>
<td>DBA 291</td>
<td>Selected Topics in Database Management: Oracle Project</td>
<td>1</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 11 Credit Hours

**EARLY CHILDHOOD ASSOCIATE**  Evening Only

The Early Childhood certificate prepares individuals to work at entry-level employment in child development centers, nursery schools, camps, and recreation centers. This certificate provides instruction in child development and the behavior patterns of infants through four-year olds. This course work will transfer to the Early Childhood diploma and associate degree.

**EARLY CHILDHOOD ASSOCIATE — C55220B**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU 119</td>
<td>Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>EDU 144</td>
<td>Child Development I</td>
<td>3</td>
</tr>
<tr>
<td>EDU 145</td>
<td>Child Development II</td>
<td>3</td>
</tr>
<tr>
<td>EDU 146</td>
<td>Child Guidance</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ..................................... 13 Credit Hours
EARLY CHILDHOOD ASSOCIATE: INFANT/TODDLER CARE

The Infant/Toddler Care certificate provides a strong foundation for Early Childhood Professionals working with very young children. The North Carolina Division of Child Development includes this certificate as one option in obtaining quality points in the revised Star Rated License system.

EARLY CHILDHOOD ASSOCIATE — C55220C

EDU 119 Early Childhood Education ........................................... 4
EDU 131 Child, Family, and Community ...................................... 3
EDU 144 Child Development I ...................................................... 3
EDU 153 Health, Safety, and Nutrition ........................................ 3
EDU 234 Infant, Toddlers, and Twos ........................................... 3

Completion Requirements ..................................................... 16 Credit Hours

ELECTRICAL/ELECTRONICS TECHNOLOGY: COMMERCIAL WIRING METHODS

Evening Only

The Commercial Wiring Methods certificate is a continuation of the Residential Wiring Methods certificate and is designed to provide training for persons interested in the installation and maintenance of electrical systems found in commercial facilities. Training, most of which is hands-on, will include such topics as basic commercial wiring practices, motors and controls, the National Electrical Code, and other subjects as local needs require. Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of commercial electrical systems.

NOTE: Residential Wiring Methods certificate must be completed before enrolling in the Commercial Wiring Methods program.

ELECTRICAL/ELECTRONICS TECHNOLOGY: COMMERCIAL WIRING METHODS — C35220C

ELC 112a DC/AC Electricity-Part 1 ............................................. 3
ELC 112b DC/AC Electricity-Part 2 ............................................. 2
ELC 113a Basic Wiring I-Part 1 .................................................. 2
ELC 113b Basic Wiring I-Part 2 .................................................. 2
ELC 118 National Electrical Code .............................................. 2
ELC 126a Electrical Computations-Part 1 .................................... 2
ELC 126b Electrical Computations-Part 2 .................................... 1

Completion Requirements ..................................................... 14 Credit Hours

ELECTRICITY ENGINEERING TECHNOLOGY: BASIC ELECTRONICS

The Basic Electronics certificate provides the student with a program of study necessary for developing basic electronic skills. The student will gain an understanding of AC/DC basic circuits, digital circuits, and basic electronic devices. Courses are an adjunct of the Electronics Engineering Technology program and may be transferred directly toward completion of the A.A.S. degree in Electronics Engineering Technology.

ELECTRICITY ENGINEERING TECHNOLOGY: BASIC ELECTRONICS — C40200A

CIS 111 Basic PC Literacy* ...................................................... 2
ELC 131 DC/AC Circuit Analysis .............................................. 5
ELN 131 Electronics Devices .................................................. 4
ELN 133 Digital Electronics ................................................... 4
MAT 121 Algebra and Trigonometry ....................................... 3

Completion Requirements ..................................................... 18 Credit Hours

* CIS 110: Introduction to Computers or NOS 110: Operating System

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY: FUEL INJECTION, ELECTRICAL, AND ELECTRONICS

Evening Only

The Fuel Injection, Electrical, and Electronics certificate curriculum is under Heavy Equipment and Transport Technology/Construction Equipment Systems. This certificate curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair fuel injection, electrical, and electronic systems in construction equipment. Construction equipment includes dozers, scrapers, loaders, and forklifts.
The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for electrical and electronic systems. The concentration courses will also include fuel injection systems.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY: FUEL INJECTION, ELECTRICAL, AND ELECTRONICS — C6024BC

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET 112</td>
<td>Diesel Electrical System</td>
<td>5</td>
</tr>
<tr>
<td>HET 134</td>
<td>Mechanical Fuel Injection</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

Select 4 hours from the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELN 112</td>
<td>Diesel Electronics System</td>
<td>4</td>
</tr>
<tr>
<td>ELN 113</td>
<td>Electronic Fuel Injection</td>
<td>2</td>
</tr>
<tr>
<td>HET 115</td>
<td>Electronic Engines</td>
<td>3</td>
</tr>
<tr>
<td>HET 128</td>
<td>Medium/Heavy Duty Tune-up</td>
<td>2</td>
</tr>
<tr>
<td>HET 192</td>
<td>Selected Topics in Heavy Equipment and Transport Technology</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................12 Credit Hours

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY: HYDRAULICS, ENGINES, AND TRANSMISSIONS

Evening Only

The Hydraulics, Engines, and Transmissions certificate is under the Heavy Equipment and Transport Technology/Construction Equipment Systems curriculum. This certificate is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair hydraulics, engines, and transmissions in construction equipment.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and hydraulics systems. The concentration courses will also include transmissions.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY: HYDRAULICS, ENGINES, AND TRANSMISSIONS — C6024BB

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET 110a</td>
<td>Diesel Engines-Part 1</td>
<td>4</td>
</tr>
<tr>
<td>HET 110b</td>
<td>Diesel Engines-Part 2</td>
<td>2</td>
</tr>
<tr>
<td>HET 114</td>
<td>Power Trains</td>
<td>5</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................13 Credit Hours

HIGH PERFORMANCE COMPUTING: BIOINFORMATICS COMPUTING

Day And Evening

Bioinformatics is the field of science in which biology and information technology merge into a single discipline. The study of Bioinformatics combines the basic knowledge of Biology with the computer skills necessary to manage the data generated by biological researchers. Topics include the development and application of computer methods for management, analysis, interpretation and predictions of biological databases. Students will use software tools for database creation, data warehousing, data mining and analysis. Bioinformatics as a field of study is becoming increasingly important due to the interest of the pharmaceutical industry in genome sequencing projects. The certificate focus will be on the database related IT skills necessary for a bioinformatics student.

Prerequisites to enter the program include biology course work at the post-secondary level or the permission of the department.

Completion Requirements ........................................15 Credit Hours

HIGH PERFORMANCE COMPUTING: BIOINFORMATICS COMPUTING—C25230B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPC 154</td>
<td>Introduction to Bioinformatics Computing</td>
<td>3</td>
</tr>
<tr>
<td>HPC 170</td>
<td>Introduction to HPC Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>HPC 293</td>
<td>Selected Topics: Bioinformatics Capstone</td>
<td>3</td>
</tr>
<tr>
<td>NOS 120</td>
<td>Linux/UNIX Single User</td>
<td>3</td>
</tr>
<tr>
<td>WEB 183</td>
<td>Perl Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................15 Credit Hours

HIGH PERFORMANCE COMPUTING: LINUX/RED HAT ADMINISTRATION

Day and Evening

This certificate is designed to prepare students for the Red Hat Certified Engineer (RHCE) examination. Topics include network installation, Red Hat Linux file system and kernel concepts, scripts, system recovery, cron system, LILO configuration, implement configure, log and restrict various Red Hat network services, configuration issues associated with using Red Hat Linux as a router, basic firewall policies, and basics of the XWindow system.

Upon completion of the four-course sequence, students will have the expertise needed to pass the test required to achieve RHCE status. Completion of NET 110 or CIS 282 or the equivalent is required to begin this program.

Completion Requirements ........................................15 Credit Hours

Wake Technical Community College

2006-2007 Catalog

Volume XVIII No. 3 July 2007
support areas of food and equipment sales.

The Restaurant Management certificate prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in restaurants, institutions, and clubs. Course work includes guest services, sanitation, quality management, accounting, and other areas critical to the success of restaurant professionals. Upon completion graduates should qualify for supervisory or entry-level management positions in lodging including, front office, and reservations. Opportunities are also available in the support areas of food and equipment sales.

The Hotel Management certificate prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in hotels, motels, resorts, inns, and clubs. Course work includes front office management, meetings and conventions, guest services, sanitation, quality management, and other areas critical to the success of hospitality professionals. Upon completion graduates should qualify for supervisory or entry-level management positions in lodging including, front office, and reservations. Opportunities are also available in the support areas of food and equipment sales.

The Industrial Management certificate curriculum provides the skills and knowledge needed to understand and perform various job functions in the industrial/manufacturing setting. Course work includes basic math and manufacturing processes introduction. The core of course requirements are self-contained for providing the necessary prerequisites required for entering this certificate program. The development of basic technical skills and knowledge necessary for success in the industrial/manufacturing environment. There are no Board requirements.

The Human Services Technology/Substance Abuse Certificate is designed to appeal to currently employed human service professionals who are interested in gaining specialized training in the substance abuse field. It is expected that these professionals will have appropriate training in basic psychology and/or counseling principles. The certificate program can be completed in three semesters and will provide the training hours needed to meet the North Carolina Substance Abuse Counselor Certification Board requirements.

The Human Services Technology/Substance Abuse Certificate — C4538EA

The Industrial Management certificate curriculum provides the skills and knowledge needed to understand and perform various job functions in the industrial/manufacturing setting. The core of the program is designed to provide the skills and knowledge needed to understand and perform various job functions in the industrial/manufacturing setting.
These courses are currently a part of the Industrial and Manufacturing Engineering Technology curricula and can be transferred directly into the Associate in Applied Science Degree for either curriculum.

INDUSTRIAL ENGINEERING TECHNOLOGY: INDUSTRIAL MANAGEMENT — C40240A

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>EGR 130</td>
<td>Engineering Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>ISC 128</td>
<td>Industrial Leadership</td>
<td>2</td>
</tr>
<tr>
<td>ISC 243</td>
<td>Production and Operations Management I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
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</tbody>
</table>

Completion Requirements .....................................16 Credit Hours

INDUSTRIAL ENGINEERING TECHNOLOGY: QUALITY ASSURANCE

INDUSTRIAL ENGINEERING TECHNOLOGY: QUALITY ASSURANCE— C40240B

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DFT 111</td>
<td>Technical Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>DFT 121</td>
<td>Introduction to GD and T</td>
<td>2</td>
</tr>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>ISC 175</td>
<td>QA Fundamentals</td>
<td>1</td>
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<tr>
<td>ISC 278</td>
<td>cGMP Quality System</td>
<td>2</td>
</tr>
<tr>
<td>MAC 114</td>
<td>Introduction to Metrology</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .....................................12 Credit Hours

INDUSTRIAL SYSTEMS TECHNOLOGY

Day and Evening

The Industrial Systems Technology certificate is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

INDUSTRIAL SYSTEMS TECHNOLOGY — C50240B

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELC 112</td>
<td>DC/AC Electricity</td>
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</tr>
<tr>
<td>ELC 117</td>
<td>Motors and Controls</td>
<td>4</td>
</tr>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 110</td>
<td>Workplace Safety</td>
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<tr>
<td>MEC 131</td>
<td>Metalworking Processes</td>
<td>3</td>
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<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
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</table>

Completion Requirements .....................................18 Credit Hours

INFORMATION SYSTEMS SECURITY

Day and Evening

INFORMATION SYSTEMS SECURITY — C25270A

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>NET 125</td>
<td>Networking Basics</td>
<td>3</td>
</tr>
<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
<td>3</td>
</tr>
<tr>
<td>SEC 150</td>
<td>Secure Communications</td>
<td>3</td>
</tr>
<tr>
<td>SEC 160</td>
<td>Secure Administration I</td>
<td>3</td>
</tr>
<tr>
<td>SEC 210</td>
<td>Intrusion Detection</td>
<td>3</td>
</tr>
<tr>
<td>SEC 220</td>
<td>Defense-in-Depth</td>
<td>3</td>
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</table>

Completion Requirements .....................................18 Credit Hours

LANDSCAPE ARCHITECTURE TECHNOLOGY

LANDSCAPE ARCHITECTURE TECHNOLOGY — C40260A

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>ARC 114</td>
<td>Architecture CAD</td>
<td>2</td>
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<tr>
<td>LAR 111</td>
<td>Introduction to Landscape Architecture Technology</td>
<td>3</td>
</tr>
<tr>
<td>LAR 112</td>
<td>Landscape Materials and Methods</td>
<td>4</td>
</tr>
<tr>
<td>LAR 113</td>
<td>Residential Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>LAR 230</td>
<td>Principles of Horticulture I</td>
<td>4</td>
</tr>
</tbody>
</table>

Completion Requirements .....................................16 Credit Hours

MACHINING TECHNOLOGY

Evening Only

The Machining Technology certificate is designed to develop basic skills in the theory and safe use of hand tools, power machinery, computerized equipment, and precision inspection instruments.

Students will learn to interpret blueprints, set up manual and CNC machines, perform basic machining operations, and make decisions to insure that work quality is maintained.

Employment opportunities exist in manufacturing industries, public institutions, governmental agencies, and in a wide range of specialty machining job shops.
MACHINING TECHNOLOGY:  
CNC MACHINING

The CNC Machining Certificate is designed to develop skills in the setup and programming of CNC machines, including 2-axis conversational programmed mills, 3 and 4-axis mills and machining centers, and CNC lathes. The prospective student should have some prior machining experience or training upon entering this program.

Students will learn to program using G-code text programming, CAD/CAM software, and on-board programming systems at the machine controls. Use of tool setting gages and electronic probes are also covered.

Employment opportunities exist in manufacturing industries, public institutions, governmental agencies, and in a wide range of specialty machining job shops.

MACHINING TECHNOLOGY:  
CNC MACHINING — C50300C

MAC 121 Introduction to CNC .................................................. 2
MAC 122 CNC Turning .............................................................. 2
MAC 124 CNC Milling ............................................................... 2
MAC 229 CNC Programming .................................................. 2
MAC 231 CNC Graphics Programming: Turning ................. 3
MAC 232 CNC Graphics Programming: Milling ................. 3

Completion Requirements ..................................................... 14 Credit Hours

MACHINING TECHNOLOGY/TOOL, DIE, AND MOLD MAKING:  
MOLD MAKING

Evening Only

This certificate is designed for graduates of a Machining Technology curriculum or persons with machine trade work experience. Courses selected from the Tool, Die, and Mold Making Associate Degree concentration introduce the students to plastics and plastics manufacturing equipment, moldmaking equipment, and moldmaking techniques.

Students will receive some hands-on lab experience in testing, identifying, and machining plastics. They will work on mold design and toolmaking practices related to molds. They will receive instruction on computerized machining theory and practice, including some programming and complex machining.

Employment opportunities exist in plastics manufacturing industries, molding job shops (who run molds belonging to other manufacturers), and moldmaking or mold repair job shops.

MACHINING TECHNOLOGY/TOOL, DIE, AND MOLD MAKING:  
MOLD MAKING — C5030AA

MAC 121 Introduction to CNC .................................................. 2
MAC 124 CNC Milling ............................................................... 2
MAC 245 Mold Construction I ............................................. 4
MAC 246 Mold Construction II .......................................... 4

Completion Requirements ..................................................... 12 Credit Hours

MAGNETIC RESONANCE IMAGING TECHNOLOGY

The Magnetic Resonance Imaging Technology Certificate, a specialty for radiographers, prepares the individual to use specialized equipment to visualize cross-sectional anatomical structures and aid physicians in the demonstration of pathologies and disease processes. Individuals entering this certificate program must be registered or registry-eligible radiologic technologists by the American Registry of Radiologic Technologists.

Course work prepares the technologist to provide patient care and perform studies utilizing imaging equipment, professional communication, and quality assurance in scheduled and emergency procedures through academic and clinical studies.

Graduates may be eligible to sit for the American Registry of Radiologic Technologists Advanced-Level testing in the Magnetic Resonance Imaging examination. They may find employment in facilities, which perform these imaging procedures. MRI 225, MRI Clinical Practicum, is a required pre- or co-requisite for this certificate and is strongly suggested to sit for the ARRT Advanced Registry for MRI.

MAGNETIC RESONANCE IMAGING TECHNOLOGY — D45200B

MRI 210 MRI Physics and Equipment ................................. 3
MRI 211 MRI Procedures ..................................................... 4
MRI 231 MRI Clinical Practicum ......................................... 11

Completion Requirements ..................................................... 18 Credit Hours

MANUFACTURING TECHNOLOGY/PLASTICS:  
ENGINEERING MATERIALS

MANUFACTURING TECHNOLOGY/PLASTICS:  
ENGINEERING MATERIALS — C5032AH

MEC 180 Engineering Materials ........................................... 3
PLA 115 Polymer Processing .............................................. 3
PLA 215 Polymeric Materials ............................................. 3
PLA 220 Moldflow ............................................................. 3

Completion Requirements ..................................................... 12 Credit Hours
MANUFACTURING TECHNOLOGY/PLASTICS: MANUFACTURING PRACTICES †

The Manufacturing Practices certificate offers six of the basic courses needed for a Manufacturing Technology A.A.S. degree. The student will learn the basic manufacturing technologies including robotics, hydraulics, safety, management, and quality control. These courses are an adjunct of the Manufacturing Technology/Plastics program and can be transferred directly into the Associate in Applied Science degree for these curricula. This certificate together with the Plastics Materials certificate, the Plastics Extrusion certificate, and the Injection Molding certificate are cumulative towards the Manufacturing Technology/Plastics A.A.S. degree and diploma.

Completion Requirements ..................................14 Credit Hours

MANUFACTURING TECHNOLOGY/PLASTICS: PLASTICS EXTRUSION †

The Plastics Extrusion certificate offers courses concentrating on the extrusion process coupled with basic material science aspects of commonly used polymers. The student will gain practical experience in troubleshooting the extrusion process including material characteristic differences, screw design, die design, down stream equipment, etc. Extrusion processes of wire and cable, tubing/pipe, sheet, fiber, and blown film are studied in depth. Quality control aspects such as Statistical Process Control (SPC) and Design of Experiments (DOE) are also covered. This certificate together with the Plastics Materials certificate, the Injection Molding certificate, and the Manufacturing Practices certificate are cumulative towards the A.A.S. degree and diploma.

Completion Requirements ..................................12 Credit Hours

MANUFACTURING TECHNOLOGY/PLASTICS: PLASTICS INJECTION MOLDING †

The Plastics Injection Molding certificate offers courses concentrating on the injection molding process, including mold flow computer analysis of the injection molding process. The student will gain practical experience in troubleshooting the injection molding process including machine start up and shut down, mold set up and tear down, material changeovers, mold filling problems, cycle time optimization, etc. These courses and this certificate are an adjunct of the Manufacturing Technology/Plastics program and can be transferred directly into the Associate in Applied Science degree and diploma.

Completion Requirements.................................. 16 Credit Hours

MANUFACTURING TECHNOLOGY/PLASTICS: PLASTICS MATERIALS †

The Plastics Materials certificate offers courses for students interested in the properties of plastics materials, both thermoplastic and thermoset. The student will learn the basics of material properties and testing methods. These courses and this certificate are an adjunct of the Manufacturing Technology/Plastics program and are an excellent start for the student who wishes to build towards their A.A.S. Degree or Diploma. This certificate together with the Plastics Extrusion certificate, the Injection Molding certificate, and the Manufacturing Technology certificate are cumulative towards the A.A.S. degree and diploma.

Completion Requirements.................................. 16 Credit Hours
MECHANICAL DRAFTING TECHNOLOGY

The Mechanical Drafting Technology certificate curriculum prepares technicians to produce drawings of mechanical parts and components of mechanical systems. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

Course work includes mechanical drafting, CAD, and proper drawing documentation. The use of proper dimensioning and tolerance techniques is stressed.

Graduates should qualify for employment in mechanical areas such as manufacturing, fabrication, research and development, and service industries requiring entry-level drafting and CAD skills.

MECHANICAL DRAFTING TECHNOLOGY — C50340B

DFT 111 Technical Drafting I ...................................................... 2
DFT 111A Technical Drafting I Lab............................................... 1
DFT 151 CAD I ........................................................................... 3
DFT 152 CAD II ........................................................................... 3
DFT 153 CAD III ........................................................................... 3

Completion Requirements .......................................................... 12 Credit Hours

MEDICAL OFFICE ADMINISTRATION:
MEDICAL BILLING AND CODING

The Medical Billing and Coding certificate prepares individuals for entry-level positions in medical and allied health facilities. Careers include patient services representative, medical records clerk, claims clerk, and referral clerk. Course work focuses on medical terminology, patient and insurance billing, and diagnostic and procedural coding.

Employment opportunities include the offices of allied health facilities, HMOs, insurance claims processors, laboratories, and medical equipment manufacturers and suppliers.

MEDICAL OFFICE ADMINISTRATION:
MEDICAL BILLING AND CODING — C25310B

OST 141 Medical Terms I – Medical Office ................................. 3
OST 142 Medical Terms II – Medical Office ................................. 3
OST 148 Medical Coding, Billing, and Insurance ......................... 3
OST 149 Medical Legal Issues ..................................................... 3
OST 198 Seminar in Patient Management Systems ................. 2
OST 247 CPT Coding in the Medical Office ............................... 2
OST 248 Diagnostic Coding ....................................................... 2

Completion Requirements .......................................................... 18 Credit Hours

MEDICAL OFFICE ADMINISTRATION:
MEDICAL OFFICE SPECIALIST

The Medical Office Specialist certificate prepares individuals for entry-level positions in medical and allied health facilities. Careers include patient services representative, medical records clerk, claims clerk, and referral clerk. Course work focuses on medical terminology, computer software, and records management. Employment opportunities include the offices of allied health facilities, HMOs, insurance claims processors, laboratories, and medical equipment manufacturers and suppliers.

MEDICAL OFFICE ADMINISTRATION:
MEDICAL OFFICE SPECIALIST — C25310A

CIS 111 Basic PC Literacy .......................................................... 2
OST 136 Word Processing ......................................................... 2
OST 141 Medical Terms I – Medical Office ................................. 3
OST 142 Medical Terms II – Medical Office ................................. 3
OST 164 Text Editing Applications ............................................. 3
OST 184 Records Management ................................................. 2
OST 188 Issues in Office Technology ......................................... 2

Completion Requirements .......................................................... 17 Credit Hours
MEDICAL OFFICE ADMINISTRATION:
MEDICAL TRANSCRIPTION SPECIALIST

The Medical Transcription Specialist certificate prepares individuals for entry-level positions in medical and allied health facilities. Careers include patient services representative, medical records clerk, claims clerk, and referral clerk. Employment opportunities include the offices of allied health facilities, HMOs, insurance claims processors, laboratories, and medical equipment manufacturers and suppliers.

MEDICAL OFFICE ADMINISTRATION:
MEDICAL OFFICE SPECIALIST — C25310C

OST 134  Text Entry and Formatting................................. 3
OST 141  Medical Terms I – Medical Office ...................... 3
OST 142  Medical Terms II – Medical Office ..................... 3
OST 164  Text Editing Applications ................................. 3
OST 241  Medical Office Transcription I ......................... 3
OST 242  Medical Office Transcription .................... 3

Completion Requirements ........................................ 12 Credit Hours

NETWORKING TECHNOLOGY:
CISCO CERTIFIED NETWORK ASSOCIATE (CCNA)

This certificate is designed to prepare students for the CISCO Certified Network Associate (CCNA) examination. Topics include network topologies and design, router configuration and protocols, switching theory, virtual LANS and threaded case studies.

Upon completion of the four-course sequence, students will have the expertise they need to pass the test required to achieve CCNA status. Completion of NET 110 or CIS 282 or its equivalent is required to begin this program.

NETWORKING TECHNOLOGY:
CISCO CERTIFIED NETWORK ASSOCIATE (CCNA) — C25340C

NET 125  Routing and Switching I............................... 3
NET 126  Routing and Switching II............................. 3
NET 225  Advanced Router and Switching I* ............... 3
NET 226  Advanced Router and Switching II* ............. 3

Completion Requirements ........................................ 12 Credit Hours

* TNE 111 can be substituted for NET 225 and TNE 121 can be substituted for NET 226.

NETWORKING TECHNOLOGY:
CISCO CERTIFIED NETWORK PROFESSIONAL (CCNP)

The CISCO Certified Network Professional (CCNP) certificate provides the student with advanced skills in LAN/WAN networking technologies with an emphasis on CISCO methodology. These courses will provide an in-depth study of theory, as well as practical hands-on lab activities to prepare the student for the CCNP certification objectives. Topics include routing protocols, switching technology, remote access setup and maintenance, building multi-layer networks, and networking troubleshooting.

NETWORKING TECHNOLOGY:
CCNP — C25340I

NET 270  Scalable Networks Design.............................. 3
NET 271  Multi-Layer Networks ................................. 3
NET 272  Remote Access Networks ......................... 3
NET 273  Internetworking Support ...................... 3

Completion Requirements ........................................ 12 Credit Hours

NETWORKING TECHNOLOGY: MICROSOFT CERTIFIED SYSTEMS ENGINEER (MCSE)

The MCSE certificate provides the student with the knowledge and skills necessary to prepare for the Microsoft Certified Systems Engineer (MCSE) examinations. Topics include: analysis of business requirements for a system architecture, design solutions, deploy, install and configure architecture components, and troubleshoot system problems. Completion of NET 110 or its equivalent is required to begin this program.

NETWORKING TECHNOLOGY:
MICROSOFT CERTIFIED SYSTEMS ENGINEER (MCSE) — C25340A

NET 198  Seminar in Networking Technology: MCSE ...... 3
NOS 230  Windows Administration I......................... 3
NOS 231  Windows Administration II ......................... 3
NOS 232  Windows Administration III ...................... 3

Completion Requirements ........................................ 12 Credit Hours

NURSING ASSISTANT

Day Only

Curriculum prepares individuals to work under the supervision of licensed health care professionals in performing nursing care and services for persons of all ages.

Course work emphasizes growth and development throughout the life span, personal care, vital signs, communication, nutrition, medical asepsis, therapeutic activities, accident and fire safety, household environment and equipment management; family resources and services; and employment skills.

Graduates of this curriculum may be eligible to be listed on the registry as a Nursing Assistant I and Nursing Assistant II. They may be employed in home health agencies, hospitals, clinics, nursing homes, extended care facilities, and doctor's offices.

NURSING ASSISTANT — C45480

Major Courses

NAS 101  Nursing Assistant I .................................... 5
NAS 102  Nursing Assistant II ................................... 6
NAS 103  Home Health Care .................................... 2

Completion Requirements ....................................... 13 Credit Hours
OFFICE SYSTEMS TECHNOLOGY:
INTEGRATED OFFICE SYSTEMS
Day and Evening

OFFICE SYSTEMS TECHNOLOGY:
INTEGRATED OFFICE SYSTEMS — C25360D

CIS 111 Basic PC Literacy .............................................. 2
OST 136 Word Processing ............................................... 2
OST 137 Office Software Applications .............................. 2
OST 138 Advanced Software Applications ......................... 3
OST 233 Office Publications Design .................................. 3
OST 236 Advanced Word/Information Processing ................. 3
OST 284 Emerging Technologies ...................................... 2

Completion Requirements ............................................. 17 Credit Hours

OFFICE SYSTEMS TECHNOLOGY:
OFFICE PUBLICATIONS CERTIFICATE
Day and Evening

OFFICE SYSTEMS TECHNOLOGY:
OFFICE PUBLICATIONS CERTIFICATE — C25360E

OST 134 Text Entry and Formatting .................................. 3
OST 136 Word Processing ............................................... 2
OST 137 Office Software Applications .............................. 2
OST 164 Text Editing Applications ................................... 3
OST 233 Office Publications Design .................................. 3
OST 236 Advanced Word/Information Processing ................. 3

Completion Requirements ............................................. 16 Credit Hours

OFFICE SYSTEMS TECHNOLOGY:
OFFICE SPECIALIST I
Day and Evening

OFFICE SYSTEMS TECHNOLOGY:
OFFICE SPECIALIST I — C25360F

OST 122 Office Computations .......................................... 2
OST 134 Text Entry and Formatting .................................. 3
OST 137 Office Software and Applications ......................... 2
OST 184 Records Management ......................................... 2
OST 136 Word Processing ............................................... 2
OST 164 Text Editing Applications ................................... 3
OST 188 Issues in Office Technology ................................. 2

Completion Requirements ............................................. 16 Credit Hours

OFFICE SYSTEMS TECHNOLOGY:
OFFICE SPECIALIST II
Day and Evening

OFFICE SYSTEMS TECHNOLOGY:
OFFICE SPECIALIST II — C25360C

CIS 111 Basic PC Literacy .............................................. 2
OST 135 Advanced Text Entry and Formatting ................. 4
OST 181 Introduction to Office Systems ......................... 3
OST 236 Advanced Word/Information Processing ............... 3
OST 284 Emerging Technologies ...................................... 2
OST 298 Seminar in Office Financial Software ................. 3

Completion Requirements ............................................. 17 Credit Hours

OFFICE SYSTEMS TECHNOLOGY:
WORD PROCESSING
Day and Evening

The Word Processing certificate program is designed for persons interested in acquiring knowledge and skills in word processing. This intense, concentrated program prepares participants for positions requiring expert skills using state-of-the-art word processing software applications.

OFFICE SYSTEMS TECHNOLOGY:
WORD PROCESSING — C25360B

CIS 111 Basic PC Literacy .............................................. 2
CIS 169 Business Presentations ....................................... 2
OST 136 Word Processing ............................................... 2
OST 164 Text Editing Applications ................................... 3
OST 233 Office Publications Design .................................. 3
OST 236 Advanced Word/Information Processing ................. 3

Completion Requirements ............................................. 15 Credit Hours
### OFFICE SYSTEMS TECHNOLOGY/LEGAL

**Day and Evening**

The Office Systems Technology/Legal certificate prepares individuals for entry-level positions in legal or government-related offices and provides professional development for the currently employed.

Course work includes terminology, operational procedures, preparation and transcription of documents, and records management in the legal office context.

**OFFICE SYSTEMS TECHNOLOGY/LEGAL—C2536AA**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>OST 134</td>
<td>Text Entry and Formatting</td>
<td>3</td>
</tr>
<tr>
<td>OST 136</td>
<td>Word Processing</td>
<td>2</td>
</tr>
<tr>
<td>OST 155</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>OST 156</td>
<td>Legal Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OST 184</td>
<td>Records Management</td>
<td>2</td>
</tr>
<tr>
<td>OST 252</td>
<td>Legal Transcription I</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 16 Credit Hours

### PHLEBOTOMY

**Day Only**

The Phlebotomy curriculum prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis.

Course work includes proper specimen collection and handling, communication skills, and maintaining patient data.

Graduates may qualify for employment in hospitals, clinics, physicians’ offices, and other health care settings and may be eligible for national certification as phlebotomy technicians.

The Phlebotomy program is provided by a consortium of Wake Technical Community College and Durham Technical Community College. The program will be one semester long and will alternate having class on each campus.

**PHLEBOTOMY — C45600**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBT 100</td>
<td>Phlebotomy Technology</td>
<td>6</td>
</tr>
<tr>
<td>PBT 101</td>
<td>Phlebotomy Practicum</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 12 Credit Hours

### PLUMBING APPLICATIONS AND DIAGRAMS

**Day Only**

The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes interpretation of blueprints and practices in plumbing assembly. Students will be introduced to State Codes and requirements.

Graduates should qualify for entry-level employment at parts supply houses, maintenance companies, and plumbing contractors to assist with various plumbing applications.

**PLUMBING APPLICATIONS AND DIAGRAMS — C35300A**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PLU 120</td>
<td>Plumbing Applications</td>
<td>9</td>
</tr>
<tr>
<td>PLU 140</td>
<td>Introduction to Plumbing Codes</td>
<td>2</td>
</tr>
<tr>
<td>PLU 192</td>
<td>Selected Topics in Plumbing</td>
<td>2</td>
</tr>
<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 15 Credit Hours

### PLUMBING: MODERN PLUMBING CODES AND BLUEPRINT READING

**Day Only**

The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain additional knowledge of State Codes and requirements.

Graduates should qualify for employment at parts supply houses, and for entry-level positions with maintenance companies and plumbing contractors to assist with various plumbing applications.

**PLUMBING: MODERN PLUMBING, CODES, AND BLUEPRINT READING — C35300B**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPR 130</td>
<td>Blueprint Reading/Construction</td>
<td>2</td>
</tr>
<tr>
<td>PHY 121</td>
<td>Applied Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PLU 110</td>
<td>Modern Plumbing</td>
<td>9</td>
</tr>
<tr>
<td>PLU 150</td>
<td>Plumbing Diagrams</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................ 17 Credit Hours
REAL ESTATE
Day and Evening
The Real Estate curriculum provides the prelicensing education required by the North Carolina Real Estate Commission, prepares individuals to enter the profession, and offers additional education to meet professional development needs.
Course work includes the practices and principles of real estate, emphasizing financial and legal applications, property development, and property values.
Graduates should qualify for North Carolina Real Estate Sales and Broker examinations. They should be able to enter apprenticeship training and to provide real estate services to consumers in a competent manner.

REAL ESTATE — C25400A
BUS 121 Business Math ................................................. 3
RLS 112 Real Estate Fundamentals ..................................... 5
RLS 117 Real Estate Broker ............................................. 4
Completion Requirements ........................................... 12 Credit Hours

REAL ESTATE APPRAISAL
Day and Evening
The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels.
Course work includes appraisal theory and concepts with applications, the North Carolina Appraisers Act, North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice.
Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

REAL ESTATE APPRAISAL — C25420A
REA 111 Introduction to Real Estate Appraisal R-1 ............... 2
REA 112 Valuation Principles and Practices R-2 ................. 2
REA 113 Applied Residential Property Valuation R-3 .......... 1
REA 114 USPAP R-4 ..................................................... 1
REA 210 Introduction to Income Property Appraisal G-1 ....... 2
REA 212 Advanced Income Capital Procedures G-2 .......... 2
REA 213 Applied Income Property Valuation G-3 ............. 2
Completion Requirements ........................................... 12 Credit Hours

SURVEYING TECHNOLOGY:
SURVEYING

SURVEYING TECHNOLOGY:
SURVEYING — C40380A
EGR 115 Introduction to Technology* ..................................... 3
GIS 112 Introduction to GPS ............................................. 3
SRV 110 Surveying I ................................................... 4
SRV 111 Surveying II .................................................. 4
Completion Requirements ........................................... 14 Credit Hours
* ARC 114 or DFT 111 can be substituted for EGR 115.

WEB TECHNOLOGIES:
E-COMMERCE PROGRAMMING
Day and Online

WEB TECHNOLOGIES:
E-COMMERCE PROGRAMMING — C25290B
WEB 115 Web Markup and Scripting .................................. 3
WEB 180 Active Server Pages .......................................... 3
WEB 198 Seminar in Web Technologies: Microsoft FrontPage 3
WEB 250 Database-Driven Websites .................................. 3
WEB 260 E-Commerce Infrastructure .................................. 3
Completion Requirements ........................................... 15 Credit Hours

WEB TECHNOLOGIES:
WEB DESIGNER
Day and Online

WEB TECHNOLOGIES:
WEB DESIGNER — C25290C
WEB 111 Introduction to Web Graphics ............................. 3
WEB 120 Introduction to Internet Multimedia ...................... 3
WEB 140 Web Development Tools .................................... 3
WEB 210 Web Design ................................................... 3
WEB 211 Advanced Web Graphics ................................. 3
Completion Requirements ........................................... 15 Credit Hours

WEB TECHNOLOGIES:
WEB DEVELOPER
Day and Online

WEB TECHNOLOGIES:
WEB DEVELOPER — C25290A
WEB 110 Internet/Web Fundamentals ............................... 3
WEB 115 Web Markup and Scripting ................................. 3
WEB 186 XML Technology ............................................. 3
WEB 198 Seminar in Internet Technologies: Microsoft FrontPage 3
WEB 230 Implementing Web Servers ............................... 3
Completion Requirements ........................................... 15 Credit Hours
**WELDING TECHNOLOGY**

*Evening Only*

The Welding Technology certificate provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes an introduction to consumable and non-consumable electrode welding and cutting processes. Additional courses in blueprint reading, metallurgy, and destructive testing provides the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology certificate curriculum may be employed as entry-level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, and welding-related self-employment.

**WELDING TECHNOLOGY — C50420B**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 115a</td>
<td>SMAW (Stick) Plate-Part 1</td>
<td>4</td>
</tr>
<tr>
<td>WLD 115b</td>
<td>SMAW (Stick) Plate-Part 2</td>
<td>1</td>
</tr>
<tr>
<td>WLD 141</td>
<td>Symbols and Specifications</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Electives**

*Choose 4 credit hours from the following*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 116</td>
<td>SMAW (Stick) Plate/Pipe</td>
<td>4</td>
</tr>
<tr>
<td>WLD 121</td>
<td>GMAW (MIG) FCAW/Plate</td>
<td>4</td>
</tr>
<tr>
<td>WLD 131</td>
<td>GTAW (TIG) Plate</td>
<td>4</td>
</tr>
</tbody>
</table>

**Completion Requirements** ................................12 Credit Hours
COLLABORATIVE AGREEMENTS WITH OTHER COMMUNITY COLLEGES

COURT REPORTING AND CAPTIONING

Wake Technical Community College has a collaborative agreement with Lenoir Community College. Students may take the classes listed below at Wake Tech and they will count toward the associate in applied science degree in Court Reporting and Captioning at Lenoir. Most of the remaining courses may be taken by telecourse in Raleigh. Students must contact Lenoir Community College for admissions into the program.

The Court Reporting and Captioning curriculum is designed to provide specialized training in accepted court reporting and conference procedures such as recording court proceedings in a computer-integrated courtroom, depositions, business and convention meetings, and realtime captioning activities.

Course work includes training in realtime machine shorthand theory, realtime computer software and technology, word processing, legal and medical terminology, specialized vocabularies, court procedures, dictation, and transcription.

Graduates should qualify for employment as an official court reporter, freelance reporter, television and video captioner, stenointerpreter, conference reporter, stenographer, or transcriptionist.

### Court Reporting and Captioning — A25140

#### General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>BIO 161</td>
<td>Introduction to Human Biology</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Social/Behavioral Sciences Elective

Select 3 hours from the following courses

- ANT 210 General Anthropology                3
- ECO 251 Principles of Microeconomics        3
- ECO 252 Principles of Macroeconomics        3
- HIS 121 Western Civilization I               3
- HIS 122 Western Civilization II              3
- HIS 131 American History I                   3
- HIS 132 American History II                  3
- POL 120 American Government                 3
- PSY 150 General Psychology                  3
- SOC 210 Introduction to Sociology           3
- SOC 213 Sociology of the Family             3
- SOC 220 Social Problems                      3

#### Humanities/Fine Arts Elective

Select 3 hours from the following courses

- ART 111 Art Appreciation                    3
- ENG 231 American Literature I               3
- ENG 232 American Literature II              3
- ENG 241 British Literature I                3
- ENG 242 British Literature II               3
- FRE 111 Elementary French I                 3
- FRE 112 Elementary French II                3
- FRE 211 Intermediate French I               3
- FRE 212 Intermediate French II              3
- HUM 110 Technology and Society              3
- MUS 110 Music Appreciation                  3
- PHI 215 Philosophical Issues                3
- REL 110 World Religions                     3
- REL 211 Introduction to Old Testament       3
- REL 212 Introduction to New Testament       3
- SPA 111 Elementary Spanish I                3
- SPA 112 Elementary Spanish II               3
- SPA 211 Intermediate Spanish I              3
- SPA 212 Intermediate Spanish II             3
- FRE 111 Elementary French I                 3
- FRE 112 Elementary French II                3
- FRE 211 Intermediate French I               3
- FRE 212 Intermediate French II              3
- HUM 110 Technology and Society              3
- MUS 110 Music Appreciation                  3
- PHI 215 Philosophical Issues                3
- REL 110 World Religions                     3
- REL 211 Introduction to Old Testament       3
- REL 212 Introduction to New Testament       3
- SPA 111 Elementary Spanish I                3
- SPA 112 Elementary Spanish II               3
- SPA 211 Intermediate Spanish I              3
- SPA 212 Intermediate Spanish II             3

In addition to the Court Reporting and Electric Lineman programs, Wake Tech students can also participate in a collaborative Phlebotomy program with Durham Technical Community College.

Wake Tech collaborates with Johnston Community College, Nash Community College, and Wilson Technical Community College to offer Industrial Pharmaceutical courses for their students.

For more information about the courses offered in these programs, see the Associate Degree Programs section of this catalog.
## Pre-Curriculum Program

Any person who has a high school diploma or a GED may enroll in the Pre-Curriculum Program, a series of courses designed to help students develop their academic skills in the areas of mathematics, reading, and writing, before proceeding with their regular curriculum courses. The number of courses needed and, consequently, the length of time required to complete the courses will vary. Some students may need only one course, while other students may take several semesters to complete a series of courses. Students are placed in Pre-Curriculum courses on the basis of their admissions test scores, upon the recommendation of their advisor or curriculum instructor, or due to voluntary selection of courses. Depending on their individual circumstances and with the approval of their advisor, students may take a combination of Pre-Curriculum and regular curriculum courses during the same term. The majority of these courses are offered every term, both day and evening.

**Progression Criteria:** A student taking required Pre-Curriculum courses must earn a grade of “C” or better in order to progress to the curriculum program or to the next Pre-Curriculum course level. A grade of “F” requires the student to repeat the course.

### PRE-CURRICULUM PROGRAM

#### CURRICULUM OFFERINGS

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours Per Week</th>
<th>Semester</th>
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<tbody>
<tr>
<td><strong>Course Title</strong></td>
<td><strong>Class</strong></td>
<td><strong>Lab</strong></td>
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<tr>
<td>ACA 090 Study Skills</td>
<td>3</td>
<td>0</td>
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<tr>
<td>BIO 094 Concepts of Human Biology</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>CHM 090 Chemistry Concepts</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>CHM 092 Fundamentals of Chemistry</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>CIS 070 Fundamentals of Computing</td>
<td>2</td>
<td>0</td>
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<tr>
<td>EFL 030 English for Special Purposes</td>
<td>3</td>
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<td>EFL 050 English for Academic Purposes</td>
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<tr>
<td>EFL 061 Listening/Speaking I</td>
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<td>EFL 062 Listening/Speaking II</td>
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<td>EFL 063 Listening/Speaking III</td>
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<tr>
<td>EFL 064 Listening/Speaking IV</td>
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<td>EFL 071 Reading I</td>
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<td>EFL 072 Reading II</td>
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<td>EFL 073 Reading III</td>
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<td>EFL 081 Grammar I</td>
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<td>EFL 082 Grammar II</td>
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<td>EFL 083 Grammar III</td>
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<td>EFL 084 Grammar IV</td>
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<td>EFL 091 Composition I</td>
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<td>EFL 092 Composition II</td>
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<td>EFL 093 Composition III</td>
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<td>EFL 094 Composition IV</td>
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<td>EFL 095 Composition V</td>
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<tr>
<td>ENG 070 Basic Language Skills</td>
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<tr>
<td>ENG 075 Reading and Language Essentials</td>
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<td>ENG 075A Reading and Language Essentials Lab</td>
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<tr>
<td>ENG 080 Writing Foundations</td>
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<tr>
<td>ENG 090 Composition Strategies</td>
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<td>ENG 090A Composition Strategies Lab</td>
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<td>MAT 050 Basic Math Skills</td>
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<tr>
<td>MAT 060 Essential Mathematics</td>
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<tr>
<td>MAT 070 Introductory Algebra</td>
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<tr>
<td>MAT 080 Intermediate Algebra</td>
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<tr>
<td>MAT 090 Accelerated Algebra</td>
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<tr>
<td>MAT 095 Algebraic Concepts</td>
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<tr>
<td>MAT 099 Using Technology in Math</td>
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<tr>
<td>OST 080 Keyboarding Literacy</td>
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<tr>
<td>RED 070 Essential Reading Skills</td>
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<tr>
<td>RED 080 Introduction to College Reading</td>
<td>3</td>
<td>2</td>
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<tr>
<td>RED 090 Improved College Reading</td>
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### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>ACA 090 Study Skills</strong></td>
<td>None</td>
<td>None</td>
<td>This course is intended for those who placed into credit-level course work but who are not maintaining satisfactory academic progress toward meeting program goals. Topics include study skills, note taking, learning styles and strategies, test taking, goal setting, and self-assessment skills. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.</td>
</tr>
<tr>
<td><strong>ACA 111 College Student Success</strong></td>
<td>None</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td><strong>ACA 115 Success and Study Skills</strong></td>
<td>None</td>
<td>None</td>
<td>This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.</td>
</tr>
<tr>
<td><strong>ACA 118 College Study Skills</strong></td>
<td>None</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td><strong>ACA 120 Career Assessment</strong></td>
<td>None</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td><strong>ACC 120 Principles of Financial Accounting</strong></td>
<td>RED 090 or EFL 074, and MAT 070,</td>
<td>None</td>
<td>This course introduces business decision-making 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.</td>
</tr>
<tr>
<td><strong>ACC 121 Principles of Managerial Accounting</strong></td>
<td>ACC 120</td>
<td>None</td>
<td>This course includes a greater emphasis on managerial and cost accounting skills. 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 requirement.</td>
</tr>
<tr>
<td><strong>ACC 125 Mathematics of Finance</strong></td>
<td>BUS 121 or MAT 115</td>
<td>None</td>
<td>This course covers computations necessary in accounting for various business transactions. Emphasis is placed on time value of money concepts and calculations needed for topics such as stocks and bonds, annuities, sinking funds, and amortization. Upon completion, students should be able to make computations necessary in accounting for transactions involving these topics.</td>
</tr>
<tr>
<td><strong>ACC 129 Individual Income Taxes</strong></td>
<td>CIS 111</td>
<td>None</td>
<td>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.</td>
</tr>
</tbody>
</table>

*Changes may have been made since the printing of this catalog. Students should contact their advisors for updates.*
<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>ACC 130</td>
<td>Business Income Taxes</td>
<td>2 2 0 3</td>
<td>Prerequisites: ACC 129</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 140</td>
<td>Payroll Accounting</td>
<td>1 2 0 2</td>
<td>Prerequisites: ACC 115 or ACC 120</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 149</td>
<td>Introduction to Accounting Spreadsheets</td>
<td>1 2 0 2</td>
<td>Prerequisites: ACC 115 or ACC 120, and CIS 111</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 150</td>
<td>Accounting Software Applications</td>
<td>1 2 0 2</td>
<td>Prerequisites: ACC 115 or ACC 120, and CIS 111</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 175</td>
<td>Hotel and Restaurant Accounting</td>
<td>3 2 0 4</td>
<td>Prerequisites: MAT 115</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 215</td>
<td>Ethics in Accounting</td>
<td>3 0 0 3</td>
<td>Prerequisites: ACC 121</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 220</td>
<td>Intermediate Accounting I</td>
<td>3 2 0 4</td>
<td>Prerequisites: ACC 121</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 221</td>
<td>Intermediate Accounting II</td>
<td>3 2 0 4</td>
<td>Prerequisites: ACC 220</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 225</td>
<td>Cost Accounting</td>
<td>3 0 0 3</td>
<td>Prerequisites: ACC 121</td>
<td>Corequisites: None</td>
</tr>
<tr>
<td>ACC 226</td>
<td>Advanced Managerial Accounting</td>
<td>3 0 0 3</td>
<td>Prerequisites: ACC 121</td>
<td>Corequisites: None</td>
</tr>
</tbody>
</table>

This course introduces the relevant laws governing business and fiduciary income taxes. Topics include tax law relating to business organizations, electronic research and methodologies, and the use of technology for the 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.

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.

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.

This course introduces microcomputer 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 package to solve accounting problems.

This course covers generally accepted accounting principles and the uniform system of accounts for small hotels and motels of the American Hotel and Motel Association. Emphasis is placed on the accounting cycle, analysis of financial statements, and payroll procedures including treatment of tips. Upon completion, students should be able to demonstrate competence in the accounting principles and procedures used in hotels and restaurants.

This course introduces students to professional codes of conduct and ethics adopted by professional associations and state licensing boards for accountants, auditors, and fraud examiners. Topics include research and discussions of selected historical and contemporary ethical cases and issues as they relate to accounting and business. Upon completion, students should be able to apply codes, interpret facts and circumstances, as they relate to accounting firms and business activities.

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 an extensive analysis 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.

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.

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.

This course is designed to develop an appreciation for the uses of cost information in the administration and control of business organizations. Emphasis is placed on how accounting data can be interpreted and used by management in planning and controlling business activities. Upon completion, students should be able to analyze and interpret cost information and present this information in a form that is usable by management.
ACC 227 Practices in Accounting  3  0  0  3  
Prerequisites:  ACC 220  
Corequisites:  None  
This course provides an advanced in-depth study of selected topics in accounting using case studies and individual and group problem solving. Topics include cash flow, financial statement analysis, individual and group problem solving, practical approaches to dealing with clients, ethics, and critical thinking. Upon completion, students should be able to demonstrate competent analytical skills and effective communication of their analysis in written and/or oral presentations.

ACC 240 Governmental and Not-for-Profit Accounting  3  0  0  3  
Prerequisites:  ACC 121  
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 268 Information Systems and Internal Controls  3  0  0  3  
Prerequisites:  ACC 121  
Corequisites:  None  
This course covers the design and operation of accounting information systems, with emphasis placed upon transaction cycles and the necessary controls for reliable data. Topics include accounting procedures; authorizing, documentation, and monitoring; flowcharting, data flow diagrams, and scheduling; and some auditing concepts. Upon completion, students should be able to demonstrate an analytical problem-solving ability and to communicate effectively their analysis in written or oral presentations.

ACC 269 Audit & Assurance Services  3  0  0  3  
Prerequisites:  ACC 220  
Corequisites:  None  
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics 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.

AHR 110 Introduction to Refrigeration  2  6  0  5  
Prerequisites:  None  
Corequisites:  None  
This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade.

AHR 111 HVACR Electricity  2  2  0  3  
Prerequisites:  None  
Corequisites:  None  
This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.

AHR 112 Heating Technology  2  4  0  4  
Prerequisites:  None  
Corequisites:  None  
This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

AHR 112a Heating Technology-Part 1  1  2  0  2  
Prerequisites:  None  
Corequisites:  None  
This course is the first half of AHR 112 (see the description for AHR 112 above).

AHR 112b Heating Technology-Part 2  1  2  0  2  
Prerequisites:  AHR 112a  
Corequisites:  None  
This course is the second half of AHR 112 (see the description for AHR 112 above).

AHR 113 Comfort Cooling  2  4  0  4  
Prerequisites:  None  
Corequisites:  None  
This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.
AHR 114  Heat Pump Technology  2 4 0 4
Prerequisites:  AHR 110 or AHR 113
Corequisites: None
This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

AHR 115  Refrigeration Systems  1 3 0 2
Prerequisites:  AHR 110
Corequisites: None
This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

AHR 130  HVAC Controls  2 2 0 3
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  2 6 0 4
Prerequisites: None
Corequisites: AHR 112 or AHR 113
The 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 151  HVAC Duct Systems I  1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces the techniques used to lay out and fabricate duct work commonly found in HVAC systems. Emphasis is placed on the skills required to fabricate duct work. Upon completion, students should be able to lay out and fabricate simple duct work.

AHR 152  HVAC Duct Systems II  1 3 0 2
Prerequisites: AHR 151
Corequisites: None
This course introduces the techniques used to lay out and fabricate more advanced types of duct work found in HVAC systems. Emphasis is placed on the skills required to work with complex rectangular and round fittings and transitions. Upon completion, students should be able to lay out and fabricate complex rectangular and round fittings. This course also includes field measuring for unit tie-ins.

AHR 160  Refrigerant Certification  1 0 0 1
Prerequisites: None
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  1 0 0 1
Prerequisites: None
Corequisites: None
This course introduces 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 210  Residential Building Code  1 2 0 2
Prerequisites: None
Corequisites: None
This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.

AHR 211  Residential System Design  2 2 0 3
Prerequisites: None
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 psychrometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

AHR 212  Advanced Comfort Systems  6 0 4
Prerequisites: AHR 114
Corequisites: None
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.

AHR 215  Commercial HVAC Controls  1 3 0 2
Prerequisites: AHR 111 or ELC 111
Corequisites: None
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.

AHR 220  Commercial Building Codes  2 3 0 3
Prerequisites: None
Corequisites: None
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.
### AHR 225 Commercial System Design
Prerequisites: AHR 211
Corequisites: None

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.

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<tbody>
<tr>
<td>AHR 225</td>
<td>Commercial System Design</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

### AHR 240 Hydronic Heating
Prerequisites: AHR 110
Corequisites: None

This course introduces the fundamentals of liquid chilling equipment. Topics include characteristics of water, principles of water chilling, the chiller, the refrigerant, water and piping circuits, freeze prevention, purging, and equipment flexibility. Upon completion, students should be able to describe the components, controls, and overall operation of liquid chilling equipment and perform basic maintenance tasks.

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<tbody>
<tr>
<td>AHR 240</td>
<td>Hydronic Heating</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

### AHR 250 HVAC System Diagnostics
Prerequisites: None
Corequisites: AHR 212

This course is a comprehensive study of air conditioning, heating, and refrigeration system diagnostics and corrective measures. Topics include advanced system analysis, measurement of operating efficiency, and inspection and correction of all major system components. Upon completion, students should be able to restore a residential or commercial AHR system so that it operates at or near manufacturers’ specifications. This course also includes variable air volume box set-up, test and balance air and water systems.

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<tbody>
<tr>
<td>AHR 250</td>
<td>HVAC System Diagnostics</td>
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<td>4</td>
</tr>
</tbody>
</table>

### AHR 263 Energy Management
Prerequisites: AHR 125 or AHR 215
Corequisites: None

This course covers building automation computer programming as currently used in energy management. Topics include night setback, duty cycling, synchronization, schedule optimization, and anticipatory temperature control. Upon completion, students should be able to write programs utilizing the above topics and connect computer systems to HVAC systems.

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<tbody>
<tr>
<td>AHR 263</td>
<td>Energy Management</td>
<td>1</td>
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</table>

### ANT 200 Cultural Anthropology
Prerequisites: ENG 090, RED 090
Corequisites: None

This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed.

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<tbody>
<tr>
<td>ANT 200</td>
<td>Cultural Anthropology</td>
<td>3</td>
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</tr>
</tbody>
</table>

### ANT 220 General Anthropology
Prerequisites: ENG 090, RED 090
Corequisites: None

This course introduces the scientific study of human evolution. Emphasis is placed on evolutionary theory, population genetics, biocultural adaptation and human variation, as well as non-human primate evolution, morphology, and behavior. Upon completion, students should be able to demonstrate an understanding of the biological and cultural processes which have resulted in the formation of the human species.

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<tbody>
<tr>
<td>ANT 220</td>
<td>General Anthropology</td>
<td>3</td>
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</tbody>
</table>

### ANT 221 Comparative Cultures
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None

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.

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<tbody>
<tr>
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<td>Comparative Cultures</td>
<td>3</td>
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</tbody>
</table>

### ANT 230 Physical Anthropology
Prerequisites: ENG 090, RED 090
Corequisites: ANT 230A

This course introduces the scientific study of human evolution. Emphasis is placed on laboratory exercises which may include fossil identification, genetic analysis, skeletal comparisons, forensics, computer simulations, and field observations. Upon completion, students should be able to demonstrate an understanding of the analytical skills employed by anthropologists in the study of primate evolution and variation.

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<tbody>
<tr>
<td>ANT 230</td>
<td>Physical Anthropology</td>
<td>3</td>
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</table>

### ANT 230A Physical Anthropology Lab
Prerequisites: ENG 090, RED 090
Corequisites: ANT 230

This course provides laboratory work that reinforces the material presented in ANT 230. Emphasis is placed on laboratory exercises which may include fossil identification, genetic analysis, skeletal comparisons, forensics, computer simulations, and field observations. Upon completion, students should be able to demonstrate an understanding of the analytical skills employed by anthropologists in the study of primate evolution and variation.

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<tr>
<td>ANT 230A</td>
<td>Physical Anthropology Lab</td>
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</tr>
</tbody>
</table>

### ANT 240 Archaeology
Prerequisites: ENG 090, RED 090
Corequisites: None

This course introduces the scientific study of the unwritten record of the human past. Emphasis is placed on the process of human cultural evolution as revealed through archaeological methods of excavation and interpretation. Upon completion, students should be able to demonstrate an understanding of how archaeologists reconstruct the past and describe the variety of past human cultures.

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<tr>
<td>ANT 240</td>
<td>Archaeology</td>
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</tbody>
</table>

### ARC 111 Introduction to Architectural Technology
Prerequisites: None
Corequisites: None

This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and 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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<td>Introduction to Architectural Technology</td>
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<tr>
<td>ARC 112</td>
<td>Construction Materials and Methods</td>
<td>3 2 0 4</td>
<td>None</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>ARC 113</td>
<td>Residential Architectural Technology</td>
<td>1 6 0 3</td>
<td>ARC 111, ARC 112</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>ARC 114</td>
<td>Architectural CAD</td>
<td>1 3 0 2</td>
<td>ARC 111 or LAR 111</td>
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<tr>
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<td>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. This course is an introduction to CAD using AutoCAD software.</td>
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<tr>
<td>ARC 114A</td>
<td>Architectural CAD Lab</td>
<td>0 3 0 1</td>
<td>None</td>
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<td>This course provides a laboratory setting to enhance architectural CAD skills. Emphasis is placed on further development of commands and system operation. Upon completion, students should be able to prepare and plot scaled architectural drawings.</td>
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<tr>
<td>ARC 131</td>
<td>Building Codes</td>
<td>2 2 0 3</td>
<td>ARC 112</td>
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<td>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.</td>
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<tr>
<td>ARC 160</td>
<td>Residential Design</td>
<td>1 6 0 3</td>
<td>ARC 111</td>
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<td>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.</td>
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<tr>
<td>ARC 211</td>
<td>Light Construction Technology</td>
<td>1 6 0 3</td>
<td>ARC 111, ARC 113, ARC 114</td>
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<tr>
<td></td>
<td>This course covers working drawings for light construction. Topics include plans, elevations, sections, and details; schedules; and other related topics. Upon completion, students should be able to prepare a set of working drawings which are within accepted architectural standards.</td>
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<tr>
<td>ARC 212</td>
<td>Commercial Construction Technology</td>
<td>1 6 0 3</td>
<td>ARC 111</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ARC 213</td>
<td>Design Project</td>
<td>2 6 0 4</td>
<td>ARC 111, ARC 112, ARC 113,</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ARC 220</td>
<td>Advanced Architectural CAD</td>
<td>1 3 0 2</td>
<td>ARC 114</td>
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<td></td>
<td>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 prototype drawings and symbol libraries, compose sheets with multiple details, and use advanced drawing and editing commands. This course is advanced CAD using AutoCAD software.</td>
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<tr>
<td>ARC 221</td>
<td>Architectural 3-D CAD</td>
<td>1 4 0 3</td>
<td>ARC 114</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ARC 230</td>
<td>Environmental Systems</td>
<td>3 3 0 4</td>
<td>ARC 111, MAT 121</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>ARC 240</td>
<td>Site Planning</td>
<td>2 2 0 3</td>
<td>ARC 111 or LAR 111</td>
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<tr>
<td></td>
<td>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.</td>
<td></td>
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</tbody>
</table>
ARC 241 Contract Administration 1 2 0 2
Prerequisites: ARC 111 and ARC 112, or LAR 111 and LAR 112
Corequisites: None
This course covers the techniques for reviewing the progress of construction projects. Topics include site observations, field reports, applications for payment, change orders, and other related topics. Upon completion, students should be able to review construction progress and produce appropriate documentation.

ARC 250 Survey of Architecture 3 0 0 3
Prerequisites: None
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 design a passive solar system.

ARC 261 Solar Technology 1 2 0 2
Prerequisites: ARC 111
Corequisites: None
This course introduces passive and active solar design theory and application. Topics include passive solar design, active solar theory, heat loss analysis, and other related topics. Upon completion, students should be able to design a passive solar system.

ARC 264 Digital Architecture 1 3 0 2
Prerequisites: ARC 114
Corequisites: None
This course covers multiple digital architectural techniques. Topics include spreadsheets and word processing procedures, on-line resources, modems, e-mail, image capture, multimedia, and other related topics. Upon completion, students should be able to transmit/receive electronic data, create multimedia presentations, and produce a desktop publishing document.

ARC 291 Selected Topics in Architectural Technology - - 1
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Architectural Technology. Emphasis is placed on subject matter appropriate to architectural technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ARC 292 Selected Topics in Architectural Technology - - 2
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Architectural Technology. Emphasis is placed on subject matter appropriate to architectural technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ARC 293 Selected Topics in Architectural Technology - - 3
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Architectural Technology. Emphasis is placed on subject matter appropriate to architectural technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ART 111 Art Appreciation 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
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.

ART 113 Art Methods and Materials 2 2 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of media and techniques. Emphasis is placed on exploration and manipulation of materials. Upon completion, students should be able to demonstrate familiarity with a variety of methods, materials, and processes.

ART 114 Art History Survey I 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
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.

ART 115 Art History Survey II 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
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.

ART 116 Survey of American Art 3 0 0 3
Prerequisites: RED 090, ENG 090, or placement
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.

ART 117 Non-Western Art History 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
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.

ART 121 Design I 0 6 0 3
Prerequisites: None
Corequisites: None
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 122  Design II  0 6 0 3
Prerequisites:  ART 121
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.

ART 130  Basic Drawing  0 4 0 2
Prerequisites:  None
Corequisites:  None
This course introduces basic drawing techniques and is designed to increase observation skills. Emphasis is placed on the fundamentals of drawing. Upon completion, students should be able to demonstrate various methods and their application to representational imagery.

ART 131  Drawing I  0 6 0 3
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.

ART 132  Drawing II  0 6 0 3
Prerequisites:  ART 131
Corequisites:  None
This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques.

ART 140  Basic Painting  0 4 0 2
Prerequisites:  None
Corequisites:  None
This course introduces the mechanics of painting. Emphasis is placed on the exploration of painting media through fundamental techniques. Upon completion, students should be able to demonstrate a basic understanding and application of painting.

ART 240  Painting I  0 6 0 3
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.

ART 244  Watercolor  0 6 0 3
Prerequisites:  None
Corequisites:  None
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.

ART 281  Sculpture I  0 6 0 3
Prerequisites:  None
Corequisites:  None
This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in variety of sculptural approaches.

AST 111  Descriptive Astronomy  3 0 0 3
Prerequisites:  MAT 161 or MAT 171
Corequisites:  AST 111A
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.

AST 111A  Descriptive Astronomy Lab  0 2 0 1
Prerequisites:  MAT 161 or MAT 171
Corequisites:  AST 111
The 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.

AST 151  General Astronomy I  3 0 0 3
Prerequisites:  MAT 161 or MAT 171
Corequisites:  AST 151A
This 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.

AST 151A  General Astronomy I Lab  0 2 0 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.

AST 152  General Astronomy II  3 0 0 3
Prerequisites:  AST 151
Corequisites:  AST 152A
This 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.

AST 152A  General Astronomy II Lab  0 2 0 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>ATR 112</td>
<td>Introduction to Automation</td>
<td>2 3 0 3</td>
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<td>ATR 211</td>
<td>Robot Programming</td>
<td>2 3 0 3</td>
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<tr>
<td>ATR 213</td>
<td>Programmable Controllers</td>
<td>3 3 0 4</td>
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<td>ATR 214</td>
<td>Advanced PLCs</td>
<td>3 3 0 4</td>
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<tr>
<td>ATR 215</td>
<td>Sensors and Transducers</td>
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<tr>
<td>ATR 218</td>
<td>Computer Integrated Manufacturing</td>
<td>2 3 0 3</td>
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<tr>
<td>ATR 219</td>
<td>Automated Systems</td>
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<tr>
<td>AUT 110</td>
<td>Introduction to Automotive Technology</td>
<td>2 2 0 3</td>
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<tr>
<td>AUT 115</td>
<td>Engine Fundamentals</td>
<td>2 3 0 3</td>
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<tr>
<td>AUT 116</td>
<td>Engine Repair</td>
<td>1 3 0 2</td>
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<tr>
<td>AUT 131</td>
<td>Drive Trains</td>
<td>2 3 0 3</td>
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<tr>
<td>AUT 132</td>
<td>Drive Trains Lab</td>
<td>0 3 0 1</td>
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</tbody>
</table>

**ATR 112 - Introduction to Automation**
- **Prerequisites:** None
- **Corequisites:** None
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.

**ATR 211 - Robot Programming**
- **Prerequisites:** CIS 110 or CIS 111
- **Corequisites:** None
This course provides the operational characteristics of industrial robots and programming in their respective languages. Topics include robot programming utilizing teach pendants, PLCs, and personal computers; and the interaction of external sensors, machine vision, network systems, and other related devices. Upon completion, students should be able to program and demonstrate the operation of various robots.

**ATR 213 - Programmable Controllers**
- **Prerequisites:** ELC 131
- **Corequisites:** None
This course provides a detailed study of the PLC, related hardware and programming format, and applications in the automated work cell. Topics include input/output modules, power supplies, operator interface, ladder logic, and Boolean language programming. Upon completion, students should be able to install, program, and maintain PLC-controlled systems.

**ATR 214 - Advanced PLCs**
- **Prerequisites:** ATR 213
- **Corequisites:** None
This course introduces the study of high-level programming languages and advanced I/O modules. Topics include STATEMENT, GRAFCET, or other advanced programming languages; system networking; computer interfacing; analog and other intelligent I/O modules; and system troubleshooting. Upon completion, students should be able to write and troubleshoot systems using high-level languages and complex I/O modules.

**ATR 215 - Sensors and Transducers**
- **Prerequisites:** ELC 131
- **Corequisites:** None
This course provides the theory and application of sensors typically found in an automated manufacturing system. Topics include physical properties, operating range, and other characteristics of numerous sensors and transducers used to detect temperature, pressure, position, and other desired physical parameters. Upon completion, students should be able to properly interface a sensor to a PLC, PC, or process control system.

**ATR 218 - Computer Integrated Manufacturing**
- **Prerequisites:** ATR 211
- **Corequisites:** None
This course introduces high technology systems which are currently being used in new automated manufacturing facilities. Topics include integration of robots and work cell components, switches, proxies, vision and photoelectric sensors, with automated control and data gathering systems. Upon completion, students should be able to install, program, and troubleshoot an automated manufacturing cell and its associated data communications systems.

**ATR 219 - Automated Systems Troubleshooting**
- **Prerequisites:** ATR 213
- **Corequisites:** None
This course introduces troubleshooting procedures used in automated systems. Topics include logical fault isolation, diagnostic software usage, component replacement techniques, and calibration; safety of equipment; and protection of equipment while troubleshooting. Upon completion, students should be able to analyze and troubleshoot an automated system.

**AUT 110 - Introduction to Automotive Technology**
- **Prerequisites:** AUT 115, AUT 116, AUT 131, AUT 132, AUT 141, AUT 151, AUT 152, AUT 161, AUT 162, AUT 281, AUT 282
- **Corequisites:** None
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.

**AUT 115 - Engine Fundamentals**
- **Prerequisites:** None
- **Corequisites:** AUT 116
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.

**AUT 116 - Engine Repair**
- **Prerequisites:** None
- **Corequisites:** AUT 115
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.

**AUT 131 - Drive Trains**
- **Prerequisites:** None
- **Corequisites:** AUT 132
This course introduces principles of operation of basic automotive drive trains. Emphasis is placed on manual and automatic transmissions, transaxles, and final drive components. Upon completion, students should be able to describe, diagnose, and determine needed service and repairs.

**AUT 132 - Drive Trains Lab**
- **Prerequisites:** None
- **Corequisites:** None
This course provides a laboratory setting to enhance the skills for diagnosing and repairing automotive drive trains. Emphasis is placed on practical experiences that enhance the topics presented in AUT 131. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 131.
AUT 141  Suspension and Steering Systems  2  4  0  4
Prerequisites: AUT 162
Corequisites: AUT 151, AUT 152
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.

AUT 151  Brake Systems  2  2  0  3
Prerequisites: AUT 162
Corequisites: AUT 141, AUT 152
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.

AUT 152  Brake Systems Lab  0  2  0  1
Prerequisites: AUT 162
Corequisites: AUT 141
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.

AUT 161  Electrical Systems  2  6  0  4
Prerequisites: AUT 162
Corequisites: AUT 281, AUT 282
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.

AUT 162  Chassis Electrical and Electronics  2  2  0  3
Prerequisites: None
Corequisites: None
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.

AUT 171  Heating and Air Conditioning  2  3  0  3
Prerequisites: AUT 162
Corequisites: None
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.

AUT 185  Emission Controls  1  2  0  2
Prerequisites: AUT 110, AUT 115, AUT 116, AUT 131, AUT 132, AUT 141, AUT 151, AUT 152, AUT 161, AUT 162, AUT 222, AUT 281, AUT 282, AUT 284
Corequisites: None
This course covers the design and function of emission control devices. Topics include chemistry of combustion as well as design characteristics and emission control devices that limit tailpipe, crankcase, and evaporative emissions. Upon completion, students should be able to troubleshoot, test, and service emission control systems.

AUT 222  Advanced Automotive Drive Trains  2  2  0  3
Prerequisites: AUT 131, AUT 132, AUT 161, AUT 162, AUT 281, AUT 282
Corequisites: None
This course covers advanced diagnosis and repair of automatic drive trains. Topics include testing of sensors, actuators, and control modules using on-board diagnostics, appropriate service information, and equipment. Upon completion, students should be able to perform advanced automatic drive train diagnosis and repair.

AUT 276  ASE Certifications and Applications  3  9  0  6
Prerequisites: AUT 110, AUT 115, AUT 116, AUT 131, AUT 132, AUT 141, AUT 151, AUT 152, AUT 161, AUT 162, AUT 171, AUT 282, AUT 281, AUT 282, AUT 284
Corequisites: None
This course includes a comprehensive overview of all vehicle systems with emphasis on diagnostics, service and repair. Topics include all areas of Automotive Service Excellence (ASE) Certifications through the advance levels. Upon completion, students should be able to assume duties in the automotive industry and be qualified to take ASE certification tests.

AUT 281  Advanced Engine Performance  2  2  0  3
Prerequisites: AUT 162
Corequisites: AUT 161, AUT 282
This course utilizes service information and specialized test equipment to diagnose/repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform advanced engine performance diagnosis and repair.

AUT 282  Engine Electrical Management  3  9  0  6
Prerequisites: AUT 162
Corequisites: AUT 161, AUT 281
This course includes principles, systems, and procedures required for diagnosing and restoring engine performance/driveability and emission control through mechanical, electrical, and gas analysis. Emphasis is placed on diagnostics using mechanical, electrical (including on-board), and gas analysis to determine root causes for repair purposes. Upon completion, students should be able to diagnose and repair PCM-related engine performance/driveability and emission problems.
AUT 284  Emerging Automotive Technologies 2 6 0 4
Prerequisites: AUT 115, AUT 116, AUT 131, AUT 132, AUT 141, AUT 151, AUT 152, AUT 161, AUT 162, AUT 281, AUT 282
Corequisites: None
This course covers emerging technologies in the automotive industry and the diagnostics associated with those technologies. Topics include exploring new technologies, diagnostic tools and methods, and repairs. Upon completion, students should be able to understand emerging automotive technologies.

BAF 235  Analyzing Financial Statements 3 0 0 3
Prerequisites: ACC 120
Corequisites: None
This course provides practice in constructing and analyzing long-range, multiple-year forecasts of income statements and balance sheets, and cash budgets. Topics include trend, ratio, common size, comparative analysis, programs, projections, and cash budgets. Upon completion, students should be able to analyze income statements, balance sheets, and pro forma statements.

BIO 094  Concepts of Human Biology 3 2 0 4
Prerequisites: None
Corequisites: RED 090
This course focuses on fundamental concepts of human biology. Topics include terminology, biochemistry, cell biology, tissues, body systems, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level anatomy and physiology courses.

BIO 106  Introduction to Anatomy/Physiology/Microbiology 2 2 0 3
Prerequisites: None
Corequisites: None
This course covers the fundamental and principle concepts of human anatomy and physiology and microbiology. Topics include an introduction to the structure and function of cells, tissues, and human organ systems, and an overview of microbiology, epidemiology, and control of microorganisms. Upon completion, students should be able to identify structures and functions of the human body and describe microorganisms and their significance in health and disease.

BIO 110  Principles of Biology 3 3 0 4
Prerequisites: ENG 090, and MAT 070, and RED 090
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. Laboratory exercises are designed to illustrate the basic principles presented in lecture.

BIO 111  General Biology I 3 3 0 4
Prerequisites: ENG 090, MAT 070, RED 090, or placement
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 is the first in a two-semester series intended for science majors.

BIO 112  General Biology II 3 3 0 4
Prerequisites: BIO 111
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 is the second in a two-semester series intended for science majors.

BIO 120  Introductory Botany 3 3 0 4
Prerequisites: BIO 110 or BIO 111
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 survey 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. Laboratory exercises are correlated with lecture topics.

BIO 130  Introductory Zoology 3 3 0 4
Prerequisites: BIO 110 or BIO 111
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. The evolutionary relatedness of the organisms studied will be emphasized.

BIO 140  Environmental Biology 3 0 0 3
Prerequisites: BIO 110 or BIO 111
Corequisites: BIO 140A
This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues. Individual action as part of the solution to regional environmental problems is stressed.

BIO 140A  Environmental Biology Lab 0 3 0 1
Prerequisites: BIO 110 or BIO 111
Corequisites: BIO 140
This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues. Environmentally responsible behavior at the individual level is investigated.
BIO 145 Ecology  3 3 0 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. The laboratory component of this course provides an introduction to basic field techniques used in modern ecological research.

BIO 150 Genetics in Human Affairs  3 0 0 3  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course describes the importance of genetics in everyday life. Topics include the role of genetics in human development, birth defects, cancer and chemical exposure, and current issues including genetic engineering and fertilization methods. Upon completion, students should be able to understand the relationship of genetics to society today and its possible influence on our future. Through the analysis of current topics in genetics, students will develop skills in reading scientific articles and in compiling information into written and oral communications.

BIO 155 Nutrition  3 0 0 3  
Prerequisites: CHM 090 or equivalent  
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 160 Introductory Life Sciences  2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces scientific and biological concepts. Topics include basic chemistry, cell structure and function, cell division, basic genetic concepts, anatomical terminology, and metric-English measurements and conversions. Upon completion, students should be able to demonstrate an understanding of basic chemistry, cell biology, genetic concepts; anatomical terminology; and metric-English measurements and conversions.

BIO 161 Introduction to Human Biology  3 0 0 3  
Prerequisites: None  
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 and Physiology I  4 2 0 5  
Prerequisites: CHM 090 or equivalent  
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 165 Anatomy and Physiology I  3 3 0 4  
Prerequisites: ENG 090, RED 090, or placement  
Corequisites: None  
This course is the first of a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships.

BIO 166 Anatomy and Physiology II  3 3 0 4  
Prerequisites: BIO 165  
Corequisites: None  
This course is the second in a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and the interrelationships of all body systems.

BIO 168 Anatomy and Physiology I  3 3 0 4  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, 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. Laboratory exercises will include investigation of structural and functional aspects of the indicated organ systems.

BIO 169 Anatomy and Physiology II  3 3 0 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. Laboratory exercises will include investigation of structural and functional aspects of the indicated organ systems.
<table>
<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>BIO 175</td>
<td>General Microbiology</td>
<td>3 0 0 3</td>
<td>BIO 163 or BIO 166</td>
<td>None</td>
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<td></td>
<td>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.</td>
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<tr>
<td>BIO 180</td>
<td>Biological Chemistry</td>
<td>3 0 0 3</td>
<td>BIO 110 or BIO 111</td>
<td>None</td>
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<td>This course provides an introduction to basic biochemical processes in living systems. Topics include properties of carbohydrates, lipids, proteins, nucleic acids, vitamins, and buffers, with emphasis on biosynthesis, degradation, function, and equilibrium. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical concepts. Laboratory exercises will complement the basic principles presented in lecture.</td>
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<tr>
<td>BIO 230</td>
<td>Entomology</td>
<td>3 0 0 4</td>
<td>BIO 112</td>
<td>None</td>
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<td>This course covers the biology of insects. Topics include harmful and beneficial insects, their identification, classification, life cycles, behavior, distribution, economic importance, and the methods involved in collection and preservation. Upon completion, students should be able to identify common insects and describe their biology and ecology.</td>
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<tr>
<td>BIO 231</td>
<td>Invertebrate Zoology</td>
<td>3 0 0 4</td>
<td>BIO 112</td>
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<td>This course introduces the principles of invertebrate animal biology. Emphasis is placed on the diversity, comparative anatomy, reproduction, development, behavior, ecology, evolution, and the importance of the major invertebrate phyla. Upon completion, students should be able to demonstrate knowledge of life at the invertebrate level. Modern evolutionary theory is used to interpret the relationships among the organisms studied in this course.</td>
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<tr>
<td>BIO 232</td>
<td>Vertebrate Zoology</td>
<td>3 0 0 4</td>
<td>BIO 112</td>
<td>None</td>
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<td>This course introduces the principles of animal biology of the chordate phylum. Emphasis is placed on the diversity, morphology, reproduction, development, behavior, ecology, evolution, and importance of the chordates. Upon completion, students should be able to demonstrate increased knowledge and comprehension of zoology as it applies to life. Local species are emphasized in the laboratory component of this course.</td>
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<td>BIO 242</td>
<td>Natural Resources Conservation</td>
<td>3 0 0 3</td>
<td>BIO 112</td>
<td>None</td>
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<td>This course describes the importance of natural resources and their role in our environment. Emphasis is placed on the physical, biological, and ecological principles underlying natural resource conservation with attention to the biological consequences of human impacts. Upon completion, students should be able to demonstrate an understanding of natural resource conservation. Local environmental issues dealing with resource conservation are emphasized.</td>
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<tr>
<td>BIO 243</td>
<td>Marine Biology</td>
<td>3 0 0 4</td>
<td>BIO 110 or BIO 111</td>
<td>None</td>
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<td>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.</td>
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<td>BIO 250</td>
<td>Genetics</td>
<td>3 0 0 4</td>
<td>BIO 112</td>
<td>None</td>
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<td>This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles.</td>
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<tr>
<td>BIO 271</td>
<td>Pathophysiology</td>
<td>3 0 0 3</td>
<td>BIO 163 or BIO 166</td>
<td>None</td>
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<td>This course provides an in-depth study of human pathological processes and their effects on homeostasis. Emphasis is placed on interrelationships among organ systems in deviations from homeostasis. Upon completion, students should be able to demonstrate a detailed knowledge of pathophysiology.</td>
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<tr>
<td>BIO 275</td>
<td>Microbiology</td>
<td>3 0 0 4</td>
<td>BIO 110, BIO 112, BIO 163</td>
<td>None</td>
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<td></td>
<td>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, immunity, 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.</td>
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<td>BPR 111</td>
<td>Blueprint Reading</td>
<td>1 2 0 2</td>
<td>None</td>
<td>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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<td>BPR 121</td>
<td>Blueprint Reading: Mechanical</td>
<td>1 2 0 2</td>
<td>None</td>
<td>None</td>
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<td>This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.</td>
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<tr>
<td>BPR 130</td>
<td>Blueprint Reading/Construction</td>
<td>1-2-0-2</td>
<td>None</td>
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<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
<td>3-0-0-3</td>
<td>Prerequisites: ENG 090</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 115</td>
<td>Business Law I</td>
<td>3-0-0-3</td>
<td>Prerequisites: BUS 115</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 116</td>
<td>Business Law II</td>
<td>3-0-0-3</td>
<td>Prerequisites: BUS 115</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>2-2-0-3</td>
<td>Prerequisites: MAT 060</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 125</td>
<td>Personal Finance</td>
<td>3-0-0-3</td>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 137</td>
<td>Principles of Management</td>
<td>3-0-0-3</td>
<td>Prerequisites: BUS 230</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 147</td>
<td>Business Insurance</td>
<td>3-0-0-3</td>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 151</td>
<td>People Skills</td>
<td>3-0-0-3</td>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 153</td>
<td>Human Resource Management</td>
<td>3-0-0-3</td>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 193</td>
<td>Selected Topics in Business Administration</td>
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<td>Prerequisites: MKT 120</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 217</td>
<td>Employment Law and Regulations</td>
<td>3-0-0-3</td>
<td>Prerequisites: None</td>
<td>Corequisites: None</td>
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<tr>
<td>BUS 225</td>
<td>Business Finance</td>
<td>2-2-0-3</td>
<td>Prerequisites: ACC 120</td>
<td>Corequisites: None</td>
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</tbody>
</table>
BUS 228 Business Statistics  2 2 0 3
Prerequisites: ENG 090, RED 090; and MAT 115, MAT 140, or MAT 161
Corequisites: None
This course introduces the use of statistical methods and tools in evaluating research data for business applications. Emphasis is placed on basic probability, measures of spread and dispersion, central tendency, sampling, regression analysis, and inductive inference. Upon completion, students should be able to apply statistical problem solving to business.

BUS 230 Small Business Management  3 0 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 0 3
Prerequisites: BUS 153
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 239 Business Applications Seminar  1 2 0 2
Prerequisites: ACC 120, ACC 121, BUS 115, BUS 116, BUS 137, ECO 151, ENG 114, MAT 115, MKT 120, MKT 221
Corequisites: None
This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the work place.

BUS 254 Advanced People Skills  3 0 0 3
Prerequisites: BUS 151
Corequisites: None
This course provides an advanced study of the concepts included in BUS 151. Topics include causes for communication breakdown, behavior styles, and advanced techniques for assertiveness and conflict resolution in the business environment. Upon completion, students should be able to recognize and handle conflict situations and the difficult people who create them.

BUS 256 Recruitment, Selection, and Personnel Planning  3 0 0 3
Prerequisites: BUS 153
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.

BUS 258 Compensation and Benefits  3 0 0 3
Prerequisites: BUS 153
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.

BUS 259 HRM Applications  3 0 0 3
Prerequisites: BUS 217, BUS 234, BUS 256, 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.

BUS 260 Business Communication  3 0 0 3
Prerequisites: ENG 111, OST 136, OST 164
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.

BUS 285 Business Management Issues  2 2 0 3
Prerequisites: BUS 137
Corequisites: None
This course covers contemporary issues that affect successful businesses and their managers and employees. Emphasis is placed on using case studies and exercises to develop analytical and problem-solving skills, ethics, quality management concepts, team skills, and effective communication. Upon completion, students should be able to apply the specific knowledge and skills covered to become more effective managers and employees.

CAT 210 CT Physics and Equipment  3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the system operations and components, image processing and display, image quality, and artifacts in computed tomography. Emphasis is placed on the data acquisition components, tissue attenuation conversions, image manipulation, and factors controlling image resolution. Upon completion, students should be able to understand the physics and instrumentation used in computed tomography.
<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>CET 211</td>
<td>CT Procedures</td>
<td>4</td>
<td>None</td>
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<td>Corequisites: CET 210</td>
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<td>This course is designed to cover specialized</td>
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<td></td>
<td>patient care, cross-sectional anatomy, contrast</td>
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<td>media, and scanning procedures in computed</td>
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<td>tomography. Emphasis is placed on patient</td>
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<td>assessment and monitoring, contrast agents' use,</td>
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<td>radiation safety, methods of data acquisition,</td>
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<td>and identification of cross-sectional anatomy.</td>
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<td>Upon completion, students should be able to</td>
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<td>integrate all facets of the imaging procedures</td>
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<td></td>
<td>in computed tomography.</td>
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<td>CAT 231</td>
<td>CT Clinical Practicum</td>
<td>3</td>
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<td>Corequisites: None</td>
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<td>This course provides the opportunity to apply</td>
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<td>knowledge gained from classroom instruction to</td>
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<td>the computed tomography clinical setting.</td>
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<td>Emphasis is placed on patient care and</td>
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<td>positioning, scanning procedures, and image</td>
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<td>production in computed tomography.</td>
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<td>Upon completion, students should be able to</td>
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<td>assume a variety of duties and responsibilities</td>
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<td>within the computed tomography clinical</td>
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<td>environment.</td>
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<td>CET 111</td>
<td>Computer Upgrade/Repair I</td>
<td>3</td>
<td>None</td>
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<td>Corequisites: None</td>
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<td>covering repairing, servicing, and upgrading</td>
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<td>computers and peripherals in preparation for</td>
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<td>industry certification. Topics include safe-</td>
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<td>practices, CPU/memory/bus identification, disk</td>
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<td>subsystem, hardware/software installation/</td>
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<td>configuration, common device drivers, data</td>
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<td>recovery, system maintenance, and other</td>
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<td>related topics. Upon completion, students</td>
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<td>should be able to safely repair and/or</td>
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<td>upgrade computer systems to perform within</td>
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<td>specifications.</td>
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<td>CET 193</td>
<td>Selected Topics in Computer Engineering Technology</td>
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<td>Varies, based on topic</td>
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<td>Corequisites: None</td>
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<td>areas of current interest in Computer</td>
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<td>Engineering Technology. Emphasis is placed on</td>
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<td>subject matter appropriate to computer</td>
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<td>engineering technology. Upon completion,</td>
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<td>students should be able to demonstrate an</td>
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<td>understanding of the specific area of study.</td>
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<td>CET 211</td>
<td>Computer Upgrade/Repair II</td>
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<td>CET 111</td>
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<td>computers and peripherals in preparation for</td>
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<td>industry certification. Topics include</td>
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<td>resolving resource conflicts and system</td>
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<td>bus specifications, configuration and</td>
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<td>troubleshooting peripherals, operating system</td>
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<td>configuration and optimization, and other</td>
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<td>related topics. Upon completion, students</td>
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<td></td>
<td>should be able to identify and resolve system</td>
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<td>conflicts and optimize system</td>
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<td>performance.</td>
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<td>CET 222</td>
<td>Computer Architecture</td>
<td>2</td>
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<td>Corequisites: None</td>
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<td>This course introduces the organization and</td>
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<td>design philosophy of computer systems with</td>
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<td>respect to resource management, throughput,</td>
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<td></td>
<td>and operating system interaction. Topics</td>
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<td>include instruction sets, registers, data types,</td>
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<td>memory management, virtual memory, cache,</td>
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<td>storage management, multi-processing, and</td>
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<td>pipelining. Upon completion, students should</td>
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<td></td>
<td>be able to evaluate system hardware and</td>
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<td>resources for installation and configuration</td>
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<td>purposes.</td>
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<td>CET 225</td>
<td>Digital Signal Processing</td>
<td>3</td>
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<td>Corequisites: None</td>
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<td>This course covers the theory and use of digital</td>
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<td></td>
<td>signal processing techniques. Topics include</td>
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<td></td>
<td>Fourier analysis, digital filtering, Z transforms,</td>
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<td>IIR, FIR, convolution, pulse methods, and DSP</td>
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<td>programming. Upon completion, students should</td>
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<td>be able to implement and troubleshoot DSP systems</td>
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<td></td>
<td>in hardware and software.</td>
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<td>CET 251</td>
<td>Software Engineering Principles</td>
<td>3</td>
<td>None</td>
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<td>Corequisites: CSC 132 or CSC 134</td>
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<td></td>
<td>This course introduces the methodology used</td>
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<td>to manage the development process for complex</td>
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<td>software systems. Topics include the software</td>
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<td>life cycle, resource allocation, team dynamics,</td>
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<td>design techniques, and tools that support these</td>
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<td>activities. Upon completion, students should</td>
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<td>be able to design and build robust software in</td>
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<td>a team setting.</td>
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<td>CHM 090</td>
<td>Chemistry Concepts</td>
<td>4</td>
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<td>Corequisites: ENG 090, MAT 070,</td>
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<td></td>
<td>This course provides a non-laboratory based</td>
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<td></td>
<td>introduction to basic concepts of chemistry.</td>
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<td>Topics include measurements, matter, energy,</td>
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<td>atomic theory, bonding, molecular structure,</td>
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<td>nomenclature, balancing equations, stoichiometry,</td>
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<td>solutions, acids and bases, gases, and basic</td>
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<td>organic chemistry. Upon completion, students</td>
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<td>should be able to understand and apply basic</td>
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<td>chemical concepts necessary for success in</td>
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<td>college-level science courses.</td>
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<td>CHM 092</td>
<td>Fundamentals of Chemistry</td>
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<td>Corequisites: ENG 090, MAT 070,</td>
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<td></td>
<td>This course covers fundamentals of chemistry</td>
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<td>with laboratory applications. Topics include</td>
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<td>measurements, matter, energy, atomic theory,</td>
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<td>bonding, molecular structure, nomenclature,</td>
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<td>balancing equations, stoichiometry, solutions,</td>
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<td>acids and bases, gases, and basic organic</td>
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<td>chemistry. Upon completion, students should be</td>
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<td>able to understand and apply basic chemical</td>
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<td>concepts and demonstrate basic laboratory</td>
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<td>skills necessary for success in college-level</td>
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<td>science courses.</td>
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<td>CHM 130</td>
<td>General, Organic, and Biochemistry</td>
<td>3</td>
<td>None</td>
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<td>Corequisites: ENG 090, MAT 070,</td>
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<td>This course provides a survey of basic facts</td>
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<td>and principles of general, organic, and</td>
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<td>biochemistry. Topics include measurement,</td>
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<td>molecular structure, nuclear chemistry,</td>
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<td>solutions, acid-base chemistry, gas laws, and</td>
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<td>the structure, properties, and reactions of</td>
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<td></td>
<td>major organic and biological groups. Upon</td>
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<td>completion, students should be able to</td>
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<td>demonstrate an understanding of fundamental</td>
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<td>chemical concepts.</td>
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<td>CHM 131</td>
<td>Introduction to Chemistry</td>
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<td>Corequisites: CHM 131A</td>
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<td>This course introduces the fundamental concepts</td>
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<td>of inorganic chemistry. Topics include</td>
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<td>measurement, matter and energy, atomic and</td>
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<td>molecular structure, nuclear chemistry,</td>
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<td>stoichiometry, chemical formulas and reactions,</td>
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<td>chemical bonding, gas laws, solutions, and</td>
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<td>acids and bases. Upon completion, students</td>
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<td>should be able to demonstrate a basic</td>
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<td>understanding of chemistry as it applies to</td>
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<td></td>
<td>other fields.</td>
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</table>
CHM 131A  Introduction to Chemistry Lab  0 3 0 1
Prerequisites:  ENG 090, RED 090
Corequisites:  CHM 131
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.

CHM 132  Organic and Biochemistry  3 3 0 4
Prerequisites:  CHM 131
Corequisites:  None
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 understanding of fundamental chemical concepts needed to pursue studies in related professional fields.

CHM 151  General Chemistry I  3 3 0 4
Prerequisites:  ENG 090, RED 090; and MAT 161 or MAT 171
Corequisites:  None
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermodynamics, and solutions. Upon completion, students should be able to develop an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. Students will develop laboratory techniques and learn how to effectively communicate experimental results in written reports.

CHM 152  General Chemistry II  3 3 0 4
Prerequisites:  CHM 151
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. Students will develop laboratory skills learned in CHM 151 and give oral presentation on a chemically relevant subject.

CHM 251  Organic Chemistry I  3 3 0 4
Prerequisites:  CHM 152
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 organic chemistry as needed in CHM 252. Students will perform basic synthetic and analytic techniques on organic compounds.

CHM 252  Organic Chemistry II  3 3 0 4
Prerequisites:  CHM 251
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. Students will conduct a multi-step synthetic scheme in the laboratory component.

CHM 261  Quantitative Analysis  2 6 0 4
Prerequisites:  CHM 152
Corequisites:  None
This course introduces classical methods of chemical analysis with an emphasis on laboratory techniques. Topics include statistical data treatment; stoichiometric and equilibrium calculations; and titrimetric, gravimetric, acid-base, oxidation-reduction, and complexometric methods. Upon completion, students should be able to perform classical quantitative analytical procedures.

CIS 001  Microcomputer Skills Lab  - - - -
Prerequisites:  None
Corequisites:  None
Designed to support the technical microcomputer courses by offering supplementary assistance in various software programs such as computer keyboarding, word processing, and programming.

CIS 070  Fundamentals of Computing  0 2 0 1
Prerequisites:  None
Corequisites:  None
This course covers fundamental functions and operations of the computer. Topics include identification of components, overview of operating systems, and other basic computer operations. Upon completion, students should be able to operate computers, access files, print documents, and perform basic applications operations.

CIS 110  Introduction to Computers  2 2 0 3
Prerequisites:  RED 090
Corequisites:  None
This course provides an introduction to computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems.

CIS 111  Basic PC Literacy  1 2 0 2
Prerequisites:  RED 080
Corequisites:  None
This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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</thead>
<tbody>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>2/2/0/3</td>
<td>MAT 070, RED 090</td>
<td>None</td>
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<td></td>
<td>This course introduces computer programming and problem solving in a programming environment, including an introduction to operating systems, text editor, and a language translator. 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-own algorithm design, and implement algorithmic solutions in a programming language.</td>
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<td>CIS 118</td>
<td>See CTS 118.</td>
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<td>CIS 120</td>
<td>See CTS 130.</td>
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<td>CIS 121</td>
<td>See CTS 250.</td>
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<tr>
<td>CIS 122</td>
<td>Introduction to Business Computers</td>
<td>2/2/0/3</td>
<td>CIS 110 or CIS 111</td>
<td>None</td>
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<td>This course provides preparation in solving business problems using computers. Topics include hardware and software concepts, the DOS operating system, Windows, spreadsheets, and communications. Upon completion, students should be able to use DOS commands, navigate a Windows environment, use spreadsheet capabilities, and access information in a business environment.</td>
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<td>CIS 130</td>
<td>See NOS 110.</td>
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<td>CIS 135</td>
<td>See CTS 120.</td>
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<td>CIS 143</td>
<td>See WEB 186.</td>
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<td>CIS 144</td>
<td>See NOS 111.</td>
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<td>CIS 145</td>
<td>See NOS 130.</td>
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<td>CIS 147</td>
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<td>CIS 152</td>
<td>See DBA 110.</td>
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<td>CIS 153</td>
<td>See DBA 115.</td>
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<td>CIS 154</td>
<td>See DBA 112.</td>
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<td>CIS 155</td>
<td>Database Theory/Analysis</td>
<td>2/2/0/3</td>
<td>CIS 152 or CIS 157</td>
<td>None</td>
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<td>This course introduces database design theories and analyses. Emphasis is placed on data dictionaries, normalization, data integrity, and data modeling. Upon completion, students should be able to design normalized database structures that exhibit data integrity.</td>
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<td>CIS 157</td>
<td>See DBA 120.</td>
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<td>CIS 162</td>
<td>MM Presentation Software</td>
<td>2/2/0/3</td>
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<td>This course is designed to integrate visual and audio resources using presentation software in a simple interactive multimedia project. Emphasis is placed upon design and audience considerations, general prototyping, and handling of media resources. Upon completion, students should be able to demonstrate an original interactive multimedia presentation implementing all of these resources in a professional manner.</td>
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<tr>
<td>CIS 163</td>
<td>Programming Interfaces Internet</td>
<td>2/2/0/3</td>
<td>CIS 110 or CIS 111, CIS 172 or CSC 160</td>
<td>None</td>
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<td>This course creates interactive multimedia applications and applets for the Internet using web-specific languages. Emphasis is placed on audio, video, graphic, and network resources and various file formats. Upon completion, students should be able to create an interactive multimedia application or applet for the Internet.</td>
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<tr>
<td>CIS 165</td>
<td>Desktop Publishing I</td>
<td>2/2/0/3</td>
<td>CIS 110 or CIS 111</td>
<td>None</td>
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<td>This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications; hardware/software compatibility; and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.</td>
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<tr>
<td>CIS 166</td>
<td>Desktop Publishing II</td>
<td>2/2/0/3</td>
<td>CIS 165</td>
<td>None</td>
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<td>This course provides advanced training in the use of a variety of desktop publishing software. Emphasis is placed on evaluation of software and hardware available for desktop publishing. Upon completion, students should be able to create and design complex publications using a variety of page layout software.</td>
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<td>CIS 169</td>
<td>See CTS 125.</td>
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<td>CIS 170</td>
<td>See CTS 155.</td>
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<td>CIS 171</td>
<td>See CTS 255.</td>
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<td>CIS 172</td>
<td>See WEB 110.</td>
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<td>CIS 175</td>
<td>See NOS 231.</td>
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<td>CIS 192</td>
<td>Selected Topics in Information Systems</td>
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<td>This course provides an opportunity to explore areas of current interest in information systems. Emphasis is placed on subject matter appropriate to information systems. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
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</tbody>
</table>
CIS 193  Selected Topics in
Information Systems:  -  -  -  3
Prerequisites:  Varies, based on topic
Corequisites:  None
This course provides an opportunity to explore areas of current
interest in information systems. Emphasis is placed on subject
matter appropriate to information systems. Upon completion,
students should be able to demonstrate an understanding of the
specific area of study.

CIS 198  Seminar: Computer
Forensics  2 2 0 3
Prerequisites:  None
Corequisites:  None
This course provides an opportunity to explore areas of current
interest in Computer Forensics. Emphasis is placed on the
development of critical listening skills and the presentation of
computer investigation and data acquisition issues. Upon
completion, students should be able to critically analyze issues
and establish informed opinions as an entry-level computer
forensic investigator.

CIS 210  See CTS 120.

CIS 215  Hardware Installation/
Maintenance  2 3 0 3
Prerequisites:  CIS 110 or CIS 111 or CIS 115
Corequisites:  None
This course covers the basic hardware of a personal computer,
including operations and interactions with software. Topics
include component identification, the memory system, peripheral
installation and configuration, preventive maintenance, and
diagnostics and repair. Upon completion, students should be able
to select appropriate computer equipment, upgrade and maintain
existing equipment, and troubleshoot and repair non-functioning
personal computers.

CIS 216  See CTS 220.

CIS 217  See CTS 217.

CIS 219  Advanced PC Application
Development  2 3 0 3
Prerequisites:  CIS 116
Corequisites:  None
This course provides an advanced study of the principles of
application development and end-user interface design principles.
Emphasis is placed on advanced arrays/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 advanced level.

CIS 220  See CTS 230.

CIS 226  See CTS 287.

CIS 228  See CTS 240.

CIS 235  Advanced PC Diagnostic/
Configuration  2 2 0 3
Prerequisites:  CIS 135 or CIS 215
Corequisites:  None
A continuation of CIS 135, this course covers upgrading and
repairing personal computers and peripherals. Topics include
configuring and troubleshooting peripherals, installing device
drivers, resolving resource conflicts, configuring and optimizing
operating systems, and related topics. Upon completion, students
should be able to install peripherals and upgrade personal
computers components, diagnose problems, resolve resource
conflict, and optimize system performance.

CIS 245  Operating System –
Multi-User  2 3 0 3
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 254  See DBA 210.

CIS 255  See DBA 230.

CIS 256  See DBA 240.

CIS 257  Database Programming II  2 2 0 3
Prerequisites:  CIS 157
Corequisites:  None
This course is designed to enhance programming skills developed
in CIS 157. Topics include application development with GUI front
ends and embedded programming. Upon completion, students
should be able to develop a DBMS application which includes a
GUI front end and report generation.

CIS 258  See DBA 289.

CIS 260  Business Graphics
Applications  2 2 0 3
Prerequisites:  CIS 110 or CIS 111
Corequisites:  None
This course utilizes graphics software in a variety of business
applications. Topics include terminology, design and evaluation,
graphics formats and conversion, practical applications of
graphics software, and integration of peripherals. Upon
completion, students should be able to create and incorporate
graphic designs to enhance business communications.

CIS 270  See CTS 270.

CIS 278  See CTS 289.

CIS 293  Selected Topics in
Information Systems:
FrontPage  2 2 0 3
Prerequisites:  CIS 110 or CIS 111
Corequisites:  CIS 172
This course introduces the peripherals and attendant software
needed to create stand-alone or networked interactive multimedia
applications. Emphasis is placed on using audio, video, graphic,
and resources; using peripheral-specific software; and
understanding file formats. Upon completion, students should be
able to utilize multimedia peripherals to create various sound and
visual files to create a multimedia application.

CIS 297  Seminar in MCDST  1 2 0 2
Prerequisites:  CIS 116
Corequisites:  None
This course provides an opportunity to explore areas of current
interest in Microsoft Certified Desktop Support Technician
(MCDST). 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.
CIS 298  Seminar in Information Systems  3
Prerequisites:  CIS 153
Corequisites:  None
This course provides an opportunity to explore areas of current interest in Information Systems. Emphasis in 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.

CIV 110  Statics/Strength of Materials  4
Prerequisites:  MAT 121
Corequisites:  None
This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. 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.

CIV 111  Soils and Foundations  3
Prerequisites:  CIV 110 or MEC 250
Corequisites:  None
This course presents an overview of soil as a construction material using both analysis and testing procedures. 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.

CIV 125  Civil/Surveying CAD  3
Prerequisites:  ARC 114 or DFT 111 or EGR 115
Corequisites:  None
This course introduces civil/surveying computer-aided drafting (CAD) software. 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. This course is an introduction to Land Development Desktop.

CIV 210  Engineering Materials  2
Prerequisites:  None
Corequisites:  None
This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. 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.

CIV 211  Hydraulics and Hydrology  3
Prerequisites:  CIV 110 or MEC 250
Corequisites:  None
This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. 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.
CJC 111 Introduction to Criminal Justice 3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: None
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.

CJC 112 Criminology 3 0 0 3
Prerequisites: None
Corequisites: None
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.

CJC 113 Juvenile Justice 3 0 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 0 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 0 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 0 3
Prerequisites: ENG 090, RED 090
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.

CJC 122 Community Policing 3 0 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 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 and Evidence 3 0 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 133 Corrections 3 0 0 3
Prerequisites: ENG 090, RED 090
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.

CJC 141 Community Policing 3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: None
This course covers 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 212 Ethics and Community Relations 3 0 0 3
Prerequisites: None
Corequisites: None
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.
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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>CJC 213</td>
<td>Substance Abuse</td>
<td>3 0 0 3</td>
<td>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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<tr>
<td>CJC 215</td>
<td>Organization and Administration</td>
<td>3 0 0 3</td>
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<td>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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<tr>
<td>CJC 221</td>
<td>Investigative Principles</td>
<td>3 2 0 4</td>
<td>CJC 111</td>
<td>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 appropriate 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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<tr>
<td>CJC 222</td>
<td>Criminalistics</td>
<td>3 0 0 3</td>
<td>CJC 221</td>
<td>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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<tr>
<td>CJC 223</td>
<td>Organized Crime</td>
<td>3 0 0 3</td>
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<td>This course introduces the evolution of traditional and non-traditional 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 231</td>
<td>Constitutional Law</td>
<td>3 0 0 3</td>
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<td>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.</td>
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<td>CJC 232</td>
<td>Civil Liability</td>
<td>3 0 0 3</td>
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<td>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.</td>
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<tr>
<td>CJC 233</td>
<td>Correctional Law</td>
<td>3 0 0 3</td>
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<td>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.</td>
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<td>CJC 241</td>
<td>Community-Based Corrections</td>
<td>3 0 0 3</td>
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<td>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/discuss the various programs from the perspective of the criminal justice professional, the offender, and the community.</td>
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<tr>
<td>CJC 293</td>
<td>Selected Topics in Criminal Justice Technology</td>
<td>- - - 3</td>
<td>Varies, based on topics</td>
<td>None</td>
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<td>This course provides an opportunity to explore areas of current interest in Criminal Justice Technology. Emphasis is placed on subject matter appropriate to criminal justice. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
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<td>CMT 210</td>
<td>Professional Construction Supervision</td>
<td>3 0 0 3</td>
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<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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CMT 212  Total Safety Performance 3 0 0 3
Prerequisites: None
Corequisites: None
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, the student should be able to properly supervise safety at a construction jobsite and qualify for OSHA Thirty-Hour Train Certification.

CMT 214  Planning and Scheduling 3 0 0 3
Prerequisites: CMT 210 and BPR 130
Corequisites: None
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.

CMT 216  Costs and Productivity 3 0 0 3
Prerequisites: CMT 210
Corequisites: None
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.

CMT 218  Human Relations Issues 3 0 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.

COE 111  Co-op Work Experience I 0 0 10 1
Prerequisites: None
Corequisites: None
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.

COE 112  Co-op Work Experience I 0 0 20 2
Prerequisites: None
Corequisites: None
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.

COE 113  Co-op Work Experience I 0 0 30 3
Prerequisites: None
Corequisites: None
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.

COE 114  Co-op Work Experience I 0 0 40 4
Prerequisites: None
Corequisites: None
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.

COE 115  Work Experience Seminar I 1 0 0 1
Prerequisites: None
Corequisites: COE 111 or COE 112 or COE 113 or COE 114
This is a seminar course designed to enrich the student's cooperative education work experience.

COE 121  Co-op Work Experience II 0 0 10 1
Prerequisites: None
Corequisites: None
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.

COE 122  Co-op Work Experience II 0 0 20 2
Prerequisites: None
Corequisites: None
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.
<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>COE 123</td>
<td>Co-op Work Experience III</td>
<td>0 0 30 3</td>
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<tr>
<td>COE 124</td>
<td>Co-op Work Experience II</td>
<td>0 0 40 4</td>
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<tr>
<td>COE 125</td>
<td>Work Experience Seminar II</td>
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<tr>
<td>COE 131</td>
<td>Co-op Work Experience III</td>
<td>0 0 10 1</td>
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<tr>
<td>COM 110</td>
<td>Introduction to Communication</td>
<td>3 0 0 3</td>
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<td>COM 111</td>
<td>Voice and Dictation I</td>
<td>3 0 0 3</td>
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<td>COM 120</td>
<td>Interpersonal Communication</td>
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<tr>
<td>COM 130</td>
<td>Nonverbal Communication</td>
<td>3 0 0 3</td>
<td>COM 120</td>
<td>None</td>
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<tr>
<td>COM 231</td>
<td>Public Speaking</td>
<td>3 0 0 3</td>
<td>ENG 111</td>
<td>None</td>
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<tr>
<td>COM 232</td>
<td>Election Rhetoric</td>
<td>3 0 0 3</td>
<td>ENG 090, RED 090</td>
<td>None</td>
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</tbody>
</table>

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.

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.

This is a seminar course designed to enrich the student's cooperative education work experience.

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.

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.

This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal group, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts.

This course provides guided practice in the proper production of speech. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective natural speech in various contexts.

This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations.

This course introduces the contemporary study of nonverbal communication in daily life. Topics include haptics, kinesics, proxemics, facial displays, and appearance. Upon completion, students should be able to analyze/interpret nonverbal communication and demonstrate greater awareness of their own nonverbal communication habits.

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.

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 0 3
Prerequisites: ENG 112 or ENG 113
Corequisites: None
This course introduces theory and history of persuasive speaking, 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.

COM 251 Debate I 3 0 0 3
Prerequisites: None
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.

CSC 120 Computing Fundamentals I 3 2 0 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.

CSC 125 Introduction to Parallel Programming 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces students to the techniques and tools used to write parallel programs. Topics include principles of parallel program design including architecture, algorithms, performance modeling, parallel programming standards, Message Passing Interface (MPI), OpenMP, API, and modern parallel languages. Upon completion, students should be able to discuss programming issues in a High Performance Computing system.

CSC 129 Technical Programming 2 3 0 3
Prerequisites: MAT 121
Corequisites: None
This course introduces the analysis of technical problems by using different software tools. Emphasis is placed on solving technical problems using structured programming logic and tools such as a computer language, spreadsheet software, or an advanced programmable calculator. Upon completion, students should be able to derive solutions to complex technical problems using various software tools.

CSC 130 Computing Fundamentals II 3 2 0 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.

CSC 133 C Programming 2 3 0 3
Prerequisites: MAT 070
Corequisites: None
This course introduces computer programming using the C programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, 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 0 3
Prerequisites: MAT 070, RED 090
Corequisites: CIS 115 or CSC 133
This course introduces object-oriented computer programming using the C++ programming language. Topics include input/output operations, iteration, arithmetic operations, arrays, subprograms, and other related topics. Upon completion, students should be able to design, code, test, and debug C++ language programs. Additional topics will include classes, polymorphism, inheritance, operator overloading, and encapsulation.

CSC 136 FORTRAN Programming 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the FORTRAN programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, subprograms, and other related topics. Upon completion, students should be able to design, code, test, and debug FORTRAN language programs.

CSC 139 Visual BASIC Programming 2 3 0 3
Prerequisites: MAT 070, RED 090
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 will learn the basic concepts of good interface design and program documentation.

CSC 142 Visual COBOL Prog 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the Visual COBOL 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.

CSC 144 AS/400 CL Programming 2 3 0 3
Prerequisites: CIS 115 and NOS 211
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 See CSC 151.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 150</td>
<td>Visual RPG Programming</td>
<td>2 3 0 3</td>
<td>This course introduces computer programming using the Visual RPG 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.</td>
</tr>
<tr>
<td>CSC 151</td>
<td>JAVA Programming</td>
<td>2 3 0 3</td>
<td>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.</td>
</tr>
<tr>
<td>CSC 152</td>
<td>SAS</td>
<td>2 3 0 3</td>
<td>This course introduces the fundamentals of SAS programming. Emphasis is placed on learning basic SAS commands and statements for solving a variety of data processing applications. Upon completion, students should be able to use SAS data and procedure steps to create SAS data sets, do statistical analysis, and general customized reports.</td>
</tr>
<tr>
<td>CSC 153</td>
<td>C# Programming</td>
<td>2 3 0 3</td>
<td>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 be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level.</td>
</tr>
<tr>
<td>CSC 158</td>
<td>SAS</td>
<td>2 3 0 3</td>
<td>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 be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level.</td>
</tr>
<tr>
<td>CSC 159</td>
<td>MSS</td>
<td>2 3 0 3</td>
<td>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 be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level.</td>
</tr>
<tr>
<td>CSC 160</td>
<td>See WEB 115.</td>
<td></td>
<td></td>
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<tr>
<td>CSC 175</td>
<td>See WEB 182.</td>
<td></td>
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<tr>
<td>CSC 185</td>
<td>See WEB 183.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSC 192</td>
<td>Selected Topics: MFC Project</td>
<td>1 2 0 2</td>
<td>This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
</tr>
<tr>
<td>CSC 193</td>
<td>Selected Topics: Oracle Performance Tuning</td>
<td>2 2 0 3</td>
<td>This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course will prepare students for Oracle DBA certification.</td>
</tr>
<tr>
<td>CSC 198</td>
<td>Seminar in C Programming</td>
<td>2 2 0 3</td>
<td>This course provides an opportunity to explore areas of current interest in Computer Programming. 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.</td>
</tr>
<tr>
<td>CSC 220</td>
<td>Machine Implementation of Algorithms</td>
<td>3 2 0 4</td>
<td>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.</td>
</tr>
<tr>
<td>CSC 225</td>
<td>Advanced Parallel Programming</td>
<td>2 3 0 3</td>
<td>The course introduces students to advanced topics in parallel programming and reviews available tools and libraries for parallel programming. Topics include partitioning and scheduling techniques, performance metrics and scalability, cluster environment programming, vector processing, compiler directives, code optimization and algorithms for parallel computers. Upon completion, students should be able to design an application in a HPC environment.</td>
</tr>
<tr>
<td>CSC 229</td>
<td>MPI Programming</td>
<td>2 3 0 3</td>
<td>This course introduces students to the Message Passing Interface (MPI) library. Topics include writing programs using the MPI routines, adding parallelism to application code, collective operations, timing, manipulation communicators, PTP operations, and tuning parallel programs. Upon completion, students should be able to design and code a program using the MPI library.</td>
</tr>
<tr>
<td>CSC 233</td>
<td>Advanced C</td>
<td>2 3 0 3</td>
<td>This course is a continuation of CSC 133 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.</td>
</tr>
<tr>
<td>CSC 234</td>
<td>Advanced C++</td>
<td>2 3 0 3</td>
<td>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. Additional topics will include binary and text file manipulation, virtual functions and classes, templates, class libraries, and windows programming.</td>
</tr>
</tbody>
</table>
CSC 236 Advanced Fortran Programming
Prerequisites: CSC 136
Corequisites: None
This course is a continuation of CSC 136 using the Fortran programming language 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 Adv RPG Programming
Prerequisites: CSC 138
Corequisites: None
This course is a continuation of CSC 138 using the RPG programming language 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
Prerequisites: CSC 139
Corequisites: DBA 110
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. Emphasis will be placed on linking to and manipulating a database through tables, queries, and customization using API calls.

CSC 240 Adv Visual C++ Programming
Prerequisites: CSC 141
Corequisites: None
This course is a continuation of CSC 141 using the Visual 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 242 Advanced Visual COBOL Programming
Prerequisites: CSC 142
Corequisites: None
This course is a continuation of CSC 142 using the Visual COBOL programming language 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
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.

CSC 245 Advanced C/C++ Programming
Prerequisites: CSC 133, CSC 134, CSC 140, CSC 141, or CSC 145
Corequisites: None
This course covers additional operations using C dialects primarily relating to operating system interfacing. Topics include advanced file handling, interprocess communications, messages, semaphores, inter-language calls, signals, device drivers, sockets, and client/server techniques. Upon completion, students should be able to write and modify programs using advanced functions.

CSC 246 Realtime Programming
Prerequisites: A high-level or assembly programming language
Corequisites: None
This course covers the techniques for programming in a real-time environment. Topics include signals, critical sections, polling, interface devices, timing, open and closed loop control, speed/size optimization, and special considerations for embedded controllers. Upon completion, students should be able to write and modify interface routines used with time-critical applications.

CSC 247 Advanced Assembly Language
Prerequisites: None
Corequisites: None
This course covers additional techniques used in efficient assembly language programs. Topics include memory models, re-entrant code, recursion, ROM-able code, disassembly, patching, device drivers, and interfacing to high-level languages. Upon completion, students should be able to create, patch, and optimize sub-programs for use in solving problems.

CSC 248 See WEB 215.

CSC 249 Data Structures and Algorithms
Prerequisites: CSC 132, CSC 133, CSC 134, CSC 135, CSC 136, CIS 137, CSC 151
Corequisites: None
This course introduces the data structures and algorithms frequently used in programming applications. Topics include lists, stacks, queues, dequeues, heaps, sorting, searching, mathematical operations, recursion, encryption, random numbers, algorithm testing, and standards. Upon completion, students should be able to design data structures and implement algorithms to solve various problems.

CSC 250 Advanced Visual RPG Programming
Prerequisites: CSC 150
Corequisites: None
This course is a continuation of CSC 150 using the Visual RPG programming language 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 251 Advanced JAVA Programming 2 3 0 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 0 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 255 OpenMP Programming 2 3 0 3
Prerequisites: CSC 125
Corequisites: None
This course introduces students to the basics of using the OpenMP programming standard. Topics include directive-based shared memory parallel processing, incremental parallelization, and developing portable code for shared memory architectures using the OpenMP model. Upon completion, students should be able to design and code a program using the OpenMP standard.

CSC 258 JAVA Enterprise Programs 2 3 0 3
Prerequisites: CSC 148
Corequisites: CSC 248, CSC 251
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.

CSC 260 Programming in Another Language 2 2 0 3
Prerequisites: CSC 120
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 275 HPC Algorithms 2 2 0 3
Prerequisites: CSC 125
Corequisites: None
This course introduces students to the various algorithms available for HPC environments. Topics include distributed algorithms, programming models for massively parallel machines, various parallel standard template libraries, distributed-memory message-passing algorithms, minimal communication and latency-tolerant algorithms. Upon completion, students should be able to discuss and code a program using HPC algorithms.

CSC 278 JAVA Message Service 2 3 0 3
Prerequisites: CSC 148
Corequisites: CSC 248 and CSC 251
This course introduces the student to the Java Message Service (JMS), an application program interface that supports messaging between computers in a network. Topics include point-to-point models, transactions, reliability issues, durable subscriptions and introduces messaging within Enterprise JavaBeans technology. Upon completion, students should be able to complete a project using the JMS technology.

CSC 284 Emerging Computer Programming Technologies 2 3 0 3
Prerequisites: None
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 See CSC 289.

CSC 289 Programming Capstone Project 1 4 0 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.

CSC 291 Selected Topics in Computer Programming: C++ Project 0 2 0 1
Prerequisites: None
Corequisites: CSC 234
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

CSC 292 Selected Topics in Computer Programming: Visual Basic Project 1 2 0 2
Prerequisites: CSC 239
Corequisites: None
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

CSC 293 Selected Topics: ORACLE Projects - - - 3
Prerequisites: CIS 257
Corequisites: None
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.
CTS 118 IS Professional Communication 2 0 0 2
Prerequisites: None
Corequisites: None
This course prepares the information systems professional to communicate with corporate personnel from management to end-users. Topics include information systems cost justification tools, awareness of personal hierarchy of needs, addressing these needs, and discussing technical issues with non-technical personnel. Upon completion, students should be able to communicate information systems issues to technical and non-technical personnel.

CTS 120 Hardware/Software Support 2 3 0 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 0 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 130 Spreadsheet 2 2 0 3
Prerequisites: CIS 110 or CIS 111 or OST 137
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.

CTS 135 Integrated Software Introduction 2 4 0 4
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion, students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.

CTS 155 Technical Support Functions 2 2 0 3
Prerequisites: RED 090
Corequisites: CIS 110 or CIS 111 or NET 110
This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques and support technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems.
CTS 210  Computer Ethics  3 0 0 3  
Prerequisites:  CIS 110 or CIS 111 or NET 110 or TNE 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 220  Adv Hard/Software Support  2 3 0 3  
Prerequisites:  CTS 120  
Corequisites:  None  
This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on: configuring and upgrading; diagnosis and troubleshooting; as well as preventive maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventive maintenance, and maintain basic networking on personal computers.

CTS 230  Advanced Spreadsheet  2 2 0 3  
Prerequisites:  CTS 130  
Corequisites:  None  
This course covers advanced spreadsheet design and development. Topics include advanced functions and statistics, charting, macros, databases, and linking. Upon completion, students should be able to demonstrate competence in designing complex spreadsheets.

CTS 235  Integrated Software Advanced  2 4 0 4  
Prerequisites:  CTS 135  
Corequisites:  None  
This course provides strategies to perform data transfer among software programs. Emphasis is placed on data interchange among word processors, spreadsheets, presentation graphics, databases and communications products. Upon completion, students should be able to integrate data to produce documents using multiple technologies.

CTS 240  Project Management  2 2 0 3  
Prerequisites:  CIS 110 or CIS 111  
Corequisites:  None  
This course introduces computerized project management software. Topics include identifying critical paths, cost management, and problem solving. Upon completion, students should be able to plan a complete project and project time and costs accurately.

CTS 250  User Support & Software Evaluation  2 2 0 3  
Prerequisites:  CTS 120 and NOS 130  
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.

CTS 255  Advanced Technical Support Functions  2 2 0 3  
Prerequisites:  CTS 155  
Corequisites:  None  
This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Topics include technical support management techniques, evaluation, and methods of deployment for technical support technologies. Upon completion, students should be able to determine the best technologies to support and solve more complex technical support problems.

CTS 285  Systems Analysis & Design  3 0 0 3  
Prerequisites:  CIS 115  
Corequisites:  None  
This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOD 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.

CTS 287  Emerging Technologies  3 0 0 3  
Prerequisites:  CIS 110 or CIS 111; and ENG 111  
Corequisites:  None  
This course introduces emerging information technologies. Emphasis is placed on evolving technologies and trends in business and industry. Upon completion, students should be able to articulate an understanding of the current trends and issues in emerging technologies for information systems.

CTS 289  System Support Project  1 4 0 3  
Prerequisites:  CTS 285  
Corequisites:  CTS 255  
This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation.

CTS 292  Selected Topics in Computer Information Technology: Support Center Leadership and Management  - - 2  
Prerequisites:  CTS 255  
Corequisites:  None  
This course provides an opportunity to explore areas of current interest in support center leadership and management. 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.

CTS 293  Selected Topics in Computer Information Technology: Post Advanced Applications  - - 3  
Prerequisites:  CIS 219  
Corequisites:  None  
This course provides an opportunity to explore areas of current interest in post advanced applications. 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.
CTS 297 Seminar in MCDST 2 0 2
Prerequisites: CIS 116
Corequisites: None
This course provides an opportunity to explore areas of current interest in Microsoft Certified Desktop Support Technician (MCDST). 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.

CTS 298 Seminar in Computer Information Technology: Computer Forensics - - - 3
Prerequisites: MAT 171 or MAT 175; and CIS 235
Corequisites: None
This course provides an opportunity to explore areas of current interest in computer forensics. 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.

CUL 110 Sanitation and Safety 2 0 0 2
Prerequisites: ENG 080, RED 080
Corequisites: None
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.

CUL 112 Nutrition for Foodservice 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the principles of nutrition and its relationship to the foodservice industry. Topics include fundamentals of personal nutrition, 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.

CUL 120 Purchasing 2 0 0 2
Prerequisites: CUL 110, CUL 140
Corequisites: CUL 120A
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 foodservice ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product.

CUL 120A Purchasing Lab 0 2 0 1
Prerequisites: CUL 110, CUL 140
Corequisites: CUL 120
This course is a laboratory to accompany CUL 120. Emphasis is placed on practical experiences that enhance the materials presented in CUL 120. Upon completion, students should be able to demonstrate practical applications of purchasing within in the hospitality industry.

CUL 125 Hospitality Information Systems 1 2 0 2
Prerequisites: MAT 115, CIS 111, CUL 140
Corequisites: None
This course introduces hospitality and food service information systems. Topics include planning, cost controls, forecasting, inventory control, recipe control, production control, and nutritional analysis. Upon completion, students should be able to demonstrate competence in utilizing contemporary information application systems in a hospitality setting.

CUL 135 Food and Beverage Service 2 0 0 2
Prerequisites: ENG 080, MAT 080, RED 080
Corequisites: CUL 135A
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. Concepts and skills studied in this course will be applied in CUL 135A, Food and Beverage Service Lab.

CUL 135A Food and Beverage Service Lab 0 2 0 1
Prerequisites: ENG 080, MAT 080, RED 080
Corequisites: CUL 135
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.

CUL 140 Basic Culinary Skills 2 6 0 5
Prerequisites: ENG 090, MAT 070, RED 090
Corequisites: CUL 110
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.

CUL 160 Baking I 1 4 0 3
Prerequisites: CUL 110, CUL 140
Corequisites: None
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 170 Garde-Manger I 1 4 0 3
Prerequisites: CUL 110, CUL 140
Corequisites: None
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 180  International and American Regional Cuisine  1 8 0 5  
Prerequisites:  
CUL 140, CUL 160, CUL 170, CUL 240  
Corequisites:  
None  
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.

CUL 214  Wine Appreciation  1 2 0 2  
Prerequisites:  
ENG 090, RED 090  
Corequisites:  
None  
This course provides comprehensive and detailed information about wine from all the major wine producing countries. Emphasis is placed on the history of wine, production characteristics, laws, and purchasing and storing requirements. Upon completion, students should be able to determine what wines compliment various cuisines and particular tastes.

CUL 240  Advanced Culinary Skills  1 8 0 5  
Prerequisites:  
CUL 110, CUL 140  
Corequisites:  
None  
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.

CUL 250  Classical Cuisine  1 8 0 5  
Prerequisites:  
CUL 140, CUL 240, COE 112  
Corequisites:  
None  
This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d’hôte menus, signature dishes, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting.

CUL 260  Baking II  1 4 0 3  
Prerequisites:  
CUL 160  
Corequisites:  
None  
This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.

CUL 270  Garde-Manager II  1 4 0 3  
Prerequisites:  
CUL 170  
Corequisites:  
None  
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’œuvres, 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 show pieces.

CUL 280  Pastry and Confections  1 4 0 3  
Prerequisites:  
CUL 160, CUL 260  
Corequisites:  
None  
This course is a continuation of CUL 260. Topics include confectons and candy, chocolate tempering and molding, transfer sheets, pulled and blown sugar (basic pulling and ribboning), pastillage, marzipan and custom silicon molding. Upon completion, students will be able to design and produce centerpieces and showpieces made from tempered chocolate, pulled sugar, pastillage and marzipan, as produced through custom molding, pre-set molding, stencil cut-outs, pattern tracing and/or free-hand shaping.

DBA 110  Database Concepts  2 3 0 3  
Prerequisites:  
None  
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.

DBA 112  Database Utilization  2 2 0 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.

DBA 115  Database Applications  2 2 0 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.

DBA 120  Database Programming I  2 2 0 3  
Prerequisites:  
None  
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.

DBA 192  Selected Topics in Database Management: Oracle Internet Application  1 2 0 2  
Prerequisites:  
DBA 120, DBA 240  
Corequisites:  
None  
This course provides an opportunity to explore areas of current interest in Oracle internet applications. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.
DBA 193 Selected Topics in Database Management: Oracle Optimization  2 2 0 3
Prerequisites: DBA 230, DBA 260
Corequisites: None
This course provides an opportunity to explore areas of current interest in Oracle optimization. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

DBA 210 Database Administration  2 3 0 3
Prerequisites: None
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 produce functional DBA documentation and administer a database.

DBA 220 Oracle DB Programming II  2 2 0 3
Prerequisites: DBA 120 and CIS 157
Corequisites: None
This course is designed to enhance programming skills developed in DBA 120. 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.

DBA 221 SQL Server DB Programming II  2 2 0 3
Prerequisites: DBA 120
Corequisites: None
This course is designed to enhance programming skills developed in DBA 120. 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.

DBA 222 DB2 DB Programming II  2 2 0 3
Prerequisites: DBA 120
Corequisites: None
This course is designed to enhance programming skills developed in DBA 120. 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.

DBA 223 MySQL DB Programming II  2 2 0 3
Prerequisites: DBA 120
Corequisites: None
This course is designed to enhance programming skills developed in DBA 120. 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.

DBA 224 SAS DB Programming II  2 2 0 3
Prerequisites: DBA 120
Corequisites: None
This course is designed to enhance programming skills developed in DBA 120. 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.

DBA 230 Database in Corporate Environments  3 0 0 3
Prerequisites: None
Corequisites: None
This course covers database systems as they relate to the corporate environment. Topics include knowledge-based, decision-support, and 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.

DBA 240 Database Analysis/Design  2 3 0 3
Prerequisites: None
Corequisites: None
This course is an exploration of the established and evolving methodologies for the 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.

DBA 260 Oracle DBMS Administration  22 0 3
Prerequisites: None
Corequisites: None
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.

DBA 261 SQL Server DBMS Administration  2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced SQL Server database administration issues and distributed database concepts. Topics include backup 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.

DBA 262 DB2 DBMS Administration  2 2 0 3
Prerequisites: None
Corequisites: None
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.

DBA 263 MySQL DBMS Administration  2 2 0 3
Prerequisites: None
Corequisites: None
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.
<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>DBA 264</td>
<td>SAS DBMS Administration</td>
<td>2 2 0 3</td>
<td>None</td>
<td>None</td>
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<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.</td>
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<td>DBA 270</td>
<td>Oracle Performance Tuning</td>
<td>2 2 0 3</td>
<td>NOS 130</td>
<td>None</td>
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<tr>
<td></td>
<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.</td>
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<tr>
<td>DBA 271</td>
<td>SQL Server Performance Tuning</td>
<td>2 2 3</td>
<td>NOS 130</td>
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</tr>
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<td></td>
<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 an SQL Server database for optimal performance.</td>
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<tr>
<td>DBA 272</td>
<td>DB2 Performance Tuning</td>
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<td>NOS 130</td>
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<td></td>
<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.</td>
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<td>DBA 273</td>
<td>MySQL Performance Tuning</td>
<td>2 3</td>
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<td></td>
<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.</td>
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<tr>
<td>DBA 274</td>
<td>SAS Performance Tuning</td>
<td>2 2 0 3</td>
<td>NOS 130</td>
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<tr>
<td></td>
<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.</td>
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<tr>
<td>DBA 285</td>
<td>Data Warehousing &amp; Mining</td>
<td>3 3</td>
<td>NOS 130</td>
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<td>This course introduces data warehousing and data mining techniques. Emphasis is placed on data warehouse design, data transference, data cleansing, retrieval algorithms, and mining techniques. Upon completion, students should be able to create, populate, and mine a data warehouse.</td>
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<tr>
<td>DBA 289</td>
<td>Database Project</td>
<td>1 4 3</td>
<td>DBA 240 and DBA 120</td>
<td>None</td>
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<td></td>
<td>This course provides an opportunity to complete a significant database systems project with minimal instructor support. Emphasis is placed on written and verbal communication skills, documentation, presentation, and user training. Upon completion, students should be able to present an operational database system which they have created.</td>
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<tr>
<td>DDF 211</td>
<td>Design Drafting I</td>
<td>1 6 0 4</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>This course emphasizes design processes for finished products. Topics include data collection from manuals and handbooks, efficient use of materials, design sketching, specifications, and vendor selection. Upon completion, students should be able to research and plan the design process for a finished product.</td>
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<td>DDF 221</td>
<td>Design Drafting Project</td>
<td>0 4 0 2</td>
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<td>None</td>
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<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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<td>DDT 110</td>
<td>Developmental Disabilities</td>
<td>3 0 0 3</td>
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<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>
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<tr>
<td>DDT 120</td>
<td>Teaching the Developmentally Disabled</td>
<td>3 0 0 3</td>
<td>DDT 110</td>
<td>None</td>
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<td></td>
<td>This course covers teaching modalities which enhance learning among people with developmental disabilities. Topics include assessment, support strategies, teaching behavioral strategies, teaching methods, and documentation. Upon completion, students should be able to demonstrate competence in individual program plan development and implementation.</td>
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</tbody>
</table>
DDT 210  DDT Health Issues  3  0  0  3  
Prerequisites:  DDT 110  
Corequisites:  None  
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.

DDT 220  Program Planning Process  3  0  0  3  
Prerequisites:  None  
Corequisites:  None  
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.

DEN 100  Basic Orofacial Anatomy  2  0  0  2  
Prerequisites:  None  
Corequisites:  None  
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.

DEN 101  Preclinical Procedures  4  6  0  7  
Prerequisites:  None  
Corequisites:  BIO 106, DEN 102, DEN 110, DEN 111  
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, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures.

DEN 102  Dental Materials  3  4  0  5  
Prerequisites:  None  
Corequisites:  BIO 106, DEN 101, DEN 110, DEN 111  
This course provides instruction in the identification, properties, evaluation of quality, principles, and procedures related to 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 demonstrate proficiency in the laboratory and clinical application of routinely used dental materials.

DEN 103  Dental Sciences  2  0  0  2  
Prerequisites:  None  
Corequisites:  DEN 104, DEN 105, DEN 106, DEN 112  
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.

DEN 104  Dental Health Education  2  2  0  3  
Prerequisites:  DEN 101, DEN 111  
Corequisites:  DEN 103, DEN 104, DEN 105, DEN 106, DEN 112  
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.

DEN 105  Practice Management  2  0  0  2  
Prerequisites:  None  
Corequisites:  DEN 103, DEN 104, DEN 106, DEN 112  
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.

DEN 106  Clinical Practice I  1  0  12  5  
Prerequisites:  DEN 101, DEN 111  
Corequisites:  DEN 102, DEN 104, DEN 112  
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.

DEN 107  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.

DEN 110  Orofacial Anatomy  2  2  0  3  
Prerequisites:  None  
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/Hazard Control  2  0  0  2  
Prerequisites:  None  
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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Corequisites</th>
<th>Prerequisites</th>
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<tr>
<td>DEN 112</td>
<td>Dental Radiography</td>
<td>2 3 0 3</td>
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<td>DEN 120</td>
<td>Dental Hygiene Lecture</td>
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<td>DEN 121</td>
<td>Dental Hygiene Lab</td>
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<td>DEN 123</td>
<td>Nutrition/Dental Health</td>
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<td>DEN 124</td>
<td>Periodontology</td>
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<td>DEN 125</td>
<td>Dental Office Emergencies</td>
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<td>Dental Hygiene Theory I</td>
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<td>DEN 131</td>
<td>Dental Hygiene Clinic I</td>
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<td>DEN 141</td>
<td>Dental Hygiene Clinic II</td>
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<td>DEN 220</td>
<td>Dental Hygiene Theory III</td>
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<td>DEN 221</td>
<td>Dental Hygiene Clinic III</td>
<td>0 0 12 4</td>
<td>DEN 141</td>
<td>DEN 220</td>
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</table>
DEN 222 General and Oral Pathology  
Prerequisites: BIO 163 or BIO 165 or BIO 168  
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  
Prerequisites: None  
Corequisites: BIO 163 or BIO 165 or BIO 168  
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  
Prerequisites: DEN 111  
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.

DEN 230 Dental Hygiene Theory IV  
Prerequisites: DEN 220  
Corequisites: DEN 231  
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.

DEN 231 Dental Hygiene Clinic IV  
Prerequisites: DEN 221  
Corequisites: DEN 230  
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 patients’ needs and complete the necessary dental hygiene treatment.

DEN 232 Community Dental Health  
Prerequisites: None  
Corequisites: None  
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.

DEN 233 Professional Development  
Prerequisites: None  
Corequisites: None  
This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, résumés, 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.

DFT 111 Technical Drafting I  
Prerequisites: None  
Corequisites: None  
This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorials drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices. This course is an introduction to CAD using AutoCAD software.

DFT 111A Technical Drafting I Lab  
Prerequisites: None  
Corequisites: DFT 111  
This course provides a laboratory setting to enhance basic drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 111. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 111.

DFT 112 Technical Drafting II  
Prerequisites: DFT 111  
Corequisites: None  
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.

DFT 112A Technical Drafting II Lab  
Prerequisites: None  
Corequisites: DFT 112  
This course provides a laboratory setting to enhance advance drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 112. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 112.

DFT 115 Architectural Drafting  
Prerequisites: None  
Corequisites: None  
This course introduces basic drafting practices used in residential and light commercial design. Topics include floor plans, foundations, details, electrical components, elevations, and dimensioning practice. Upon completion, students should be able to complete a set of working drawings for a simple structure.

DFT 119 Basic CAD  
Prerequisites: None  
Corequisites: None  
This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings. This course is an introduction to MicroStation software.
DFT 120 Advanced CAD 1 2 0 2
Prerequisites: DFT 119
Corequisites: None
This course is designed for non-drafting majors to build upon basic computer-aided drafting skills by the use of application-specific assignments. Emphasis is placed on advanced 2D, 3D, isometric, and modeling applications via the CAD system. Upon completion, students should be able to generate, manage, and output engineering drawings via the computer, printer, and plotter. This course is an introduction to GEOPAK software.

DFT 121 Introduction to GD and T 1 2 0 2
Prerequisites: None
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.

DFT 151 CAD I 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing. This course is advanced CAD using AutoCAD software.

DFT 152 CAD II 2 3 0 3
Prerequisites: None
Corequisites: None
This course is a continuation of DFT 151. Topics include advanced two-dimensional, three-dimensional, and solid modeling and extended CAD applications. Upon completion, students should be able to generate and manage CAD drawings and models to produce engineering documents. This course is an introduction to solid modeling using SolidWorks.

DFT 153 CAD III 2 3 0 3
Prerequisites: None
Corequisites: None
This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models. This course focuses on solid modeling using Inventor software.

DFT 154 Introduction to Solid Models/Rendering 2 3 0 3
Prerequisites: DFT 111 or DFT 170
Corequisites: None
This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models. This course is advanced solid modeling using ProE software.

DFT 161 Pattern Design and Layout 1 2 0 2
Prerequisites: None
Corequisites: DFT 151
This course covers the layout of sheet metal and pipe fittings. Topics include the development of patterns and templates for metalworking industries. Upon completion, students should be able to develop, sketch, produce, and angle layouts.

DFT 170 Engineering Graphics 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces basic engineering graphics skills, equipment, and applications (manual and computer-aided). Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, and sectional and auxiliary views. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices.

DFT 214 Descriptive Geometry 1 2 0 2
Prerequisites: DFT 111, DFT 111A
Corequisites: None
This course includes a graphic analysis of space problems. Topics include points, lines, planes, connectors, and combinations of these. Upon completion, students should be able to solve real world spatial problems using descriptive geometry techniques.

DFT 221 Electrical Drafting 2 6 0 4
Prerequisites: DFT 111, DFT 111A, DFT 151
Corequisites: None
This course covers the practices used for making electrical drawings. Emphasis is placed on symbol identification and various types of electrical diagrams. Upon completion, students should be able to properly utilize electrical symbols in the construction of various electrical diagrams.

DFT 231 Jig & Fixture Design 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the study of jigs and fixtures. Topics include different types, components, and uses of jigs and fixtures. Upon completion, students should be able to design, and complete a set of working drawings for a jig or fixture.

DFT 254 Intermediate Solid Models/Rendering 2 3 0 3
Prerequisites: DFT 154
Corequisites: None
This course presents a continuation of basic three-dimensional solid modeling and design software. Topics include advanced study of parametric design, creation, editing, rendering and analysis of solid model assemblies, and multiview drawing generation. Upon completion, students should be able to use parametric design techniques to create and analyze the engineering design properties of a model assembly.

DRA 111 Theatre Appreciation 3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: None
This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists.
DRA 112 Literature of the Theatre  
Prerequisites: ENG 090, RED 090  
Corequisites: None  
This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works.

DRA 115 Theatre Criticism  
Prerequisites: DRA 111  
Corequisites: None  
This course is designed to develop a critical appreciation of the theatre from the viewpoint of the audience/consumer. Emphasis is placed on viewing, discussing, and evaluating selected theatre performance, either live or on film/video. Upon completion, students should be able to express their critical judgments both orally and in writing.

DRA 120 Voice for Performance  
Prerequisites: None  
Corequisites: None  
This course provides guided practice in the proper production of speech for the theatre. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective theatrical speech.

DRA 122 Oral Interpretation  
Prerequisites: None  
Corequisites: None  
This course introduces the dramatistic study of literature through performance. Emphasis is placed on analysis and performance of poetry, drama, and prose fiction. Upon completion, students should be able to embody and discuss critically the speakers inherent in literature.

DRA 124 Readers Theatre  
Prerequisites: None  
Corequisites: None  
This course provides a theoretical and applied introduction to the medium of readers’ theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of readers’ theatre.

DRA 126 Storytelling  
Prerequisites: None  
Corequisites: None  
This course introduces the art of storytelling and the oral traditions of folk literature. Topics include the history of storytelling, its value and purpose, techniques of the storyteller, and methods of collecting verbal art. Upon completion, students should be able to present and discuss critically stories from the world’s repertory of traditional lore.

DRA 128 Children’s Theatre  
Prerequisites: None  
Corequisites: None  
This course introduces the philosophy and practice involved in producing plays for young audiences. Topics include the selection of age-appropriate scripts and the special demands placed on directors, actors, designers, and educators in meeting the needs of young audiences. Upon completion, students should be able to present and critically discuss productions for children.

DRA 130 Acting I  
Prerequisites: None  
Corequisites: None  
This course provides an applied study of the actor’s craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble.

DRA 131 Acting II  
Prerequisites: DRA 130  
Corequisites: None  
This course provides additional hands-on practice in the actor’s craft. Emphasis is placed on further analysis, characterization, growth, and training for acting competence. Upon completion, students should be able to explore their creativity in an acting ensemble.

DRA 132 Stage Movement  
Prerequisites: None  
Corequisites: DRA 111  
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.

DRA 140 Stagecraft I  
Prerequisites: None  
Corequisites: None  
This course provides additional hands-on practice in the elements of stagecraft. Emphasis is placed on the design and implementation of the arts and crafts of technical theatre. Upon completion, students should be able to pursue vocational or a vocational roles in technical theatre.

DRA 141 Stagecraft II  
Prerequisites: DRA 140  
Corequisites: None  
This course provides additional hands-on practice in the elements of stagecraft. Emphasis is placed on the design and implementation of the arts and crafts of technical theatre. Upon completion, students should be able to pursue vocational or a vocational roles in technical theatre.

DRA 145 Stage Make-up  
Prerequisites: None  
Corequisites: None  
This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the final make-up. Upon completion, students should be able to create and apply make-up, prosthetics, and hairpieces.

DRA 150 Stage Management  
Prerequisites: DRA 140  
Corequisites: None  
This course covers the skills necessary for a stage manager of school or professional productions. Emphasis is placed on scheduling, rehearsal documentation and management, personnel, paperwork, and organization. Upon completion, students should be able to effectively stage-manage entertainment productions.
DRA 170 Play Production I 0 9 0 3
Prerequisites: None
Corequisites: None
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.

DRA 171 Play Production II 0 9 0 3
Prerequisites: DRA 170
Corequisites: None
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.

DRA 230 Acting III 0 6 0 3
Prerequisites: DRA 131
Corequisites: None
This course is designed to include an exploration of acting styles. Emphasis is placed on putting the actor’s skills to work in a major theatrical form—musical, comedy, or drama. Upon completion, students should be able to explore their creativity in an acting ensemble.

DRA 231 Acting IV 0 6 0 3
Prerequisites: DRA 230
Corequisites: None
This course is designed to include further exploration of acting styles. Emphasis is placed on putting the actor’s skills to work in a major theatrical form—musical, comedy, or drama. Upon completion, students should be able to explore their creativity in an acting ensemble.

DRA 243 Scene Design 2 2 0 3
Prerequisites: DRA 140
Corequisites: None
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.

DRA 260 Directing 0 6 0 3
Prerequisites: DRA 130
Corequisites: DRA 140
This course provides an analysis and application of the techniques of theatrical directing. Topics include script selection, analysis, casting, rehearsal planning, blocking, stage business, tempo, and technical considerations. Upon completion, students should be able to plan, execute, and critically discuss a student-directed production.

DRA 270 Play Production III 0 9 0 3
Prerequisites: DRA 171
Corequisites: None
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.

DRA 271 Play Production IV 0 9 0 3
Prerequisites: DRA 270
Corequisites: None
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.

ECM 168 Electronic Business 2 2 0 3
Prerequisites: None
Corequisites: None
This course provides a survey of the world of electronic business. Topics include the definition of electronic business, current practices as they evolve using Internet strategy in business, and application of basic business principles to the world of Electronic Commerce. Upon completion, students should be able to define electronic business and demonstrate an understanding of the benefits of Electronic Commerce as a foundation for developing plans leading to electronic business implementation.

ECM 210 Introduction to Electronic Commerce 2 2 0 3
Prerequisites: ECM 168
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. Discussions of various business strategies, business models, managerial issues, and current research in e-commerce will be included.

ECM 220 Electronic Commerce Planning and Implementation 2 2 0 3
Prerequisites: ECM 210, WEB 110, WEB 111, WEB 140
Corequisites: None
This course builds on currently accepted business practices to develop a business plan and implementation model for Electronic Commerce. Topics include analysis and synthesis of the planning cycle, cost/benefit analysis, technical systems, marketing, security, financial support, Internet strategies, website design, customer support and feedback and assessment. Upon completion, students should be able to develop a plan for Electronic Commerce in a small to medium size business.

ECM 230 Capstone Project 1 6 0 3
Prerequisites: ECM 220
Corequisites: None
This course provides experience in Electronic Commerce. Emphasis is placed on the implementation of an Electronic Commerce model for an existing business. Upon completion, students should be able to successfully develop and implement a plan for Electronic Commerce in a small to medium size business.
<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>ECO 151</td>
<td>Survey of Economics</td>
<td>3</td>
<td>RED 090</td>
<td>None</td>
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<td></td>
<td>This course introduces basic concepts of micro- and macroeconomics. 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.</td>
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<tr>
<td>ECO 251</td>
<td>Principles of Microeconomics</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>This course introduces economic analysis of individual, business, and industry choices 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.</td>
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<tr>
<td>ECO 252</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
<td>None</td>
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<td>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.</td>
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<tr>
<td>EDU 113</td>
<td>Family/Early Child Credentials</td>
<td>2</td>
<td>EDU 119</td>
<td>None</td>
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<td>This course covers business/professional practices for family early childhood providers, developmentally appropriate practices, positive guidance, and methods of providing a safe and healthy environment. Topics include developmentally appropriate practices; health, safety and nutrition; and business and professionalism. Upon completion, students should be able to develop a handbook of policies, procedures, and practices for a family child care home.</td>
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<tr>
<td>EDU 119</td>
<td>Introduction to Early Childhood Education</td>
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<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>EDU 131</td>
<td>Child, Family, and Community</td>
<td>3</td>
<td>None</td>
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<td>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 successfully establishing, supporting, and maintaining respectful collaborative relationships between today’s diverse families, centers/schools, and community resources. Upon completion, students should be able to describe appropriate relationships with parents/caretakers, center/school colleagues, and community agencies that enhance the educational experiences/well-being of all children. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>EDU 144</td>
<td>Child Development I</td>
<td>3</td>
<td>None</td>
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<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>EDU 145</td>
<td>Child Development II</td>
<td>3</td>
<td>EDU 144</td>
<td>None</td>
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<td>This course covers theories of child development and developmental sequences of children from pre-school through middle childhood for early childhood educators. Emphasis is placed on characteristics of physical/motor, social, emotional, and cognitive/language development and appropriate experiences for children. Upon completion, students should be able to identify developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.</td>
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<tr>
<td>EDU 146</td>
<td>Child Guidance</td>
<td>3</td>
<td>EDU 144 or EDU 119</td>
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<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
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<td>EDU 151</td>
<td>Creative Activities</td>
<td>3</td>
<td>EDU 145, EDU 146, EDU 157, EDU 185, ENG 111</td>
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<td>Corequisites: COE 121</td>
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<td>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.</td>
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<tr>
<td>EDU 152</td>
<td>Music, Movement, and Language</td>
<td>3</td>
<td>EDU 151, EDU 157, ENG 111, ENG 112</td>
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<td>Corequisites: COE 211</td>
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<td>This course introduces a historical perspective of music and movement and integrates the whole language concept with emphasis on diversity. Emphasis is placed on designing an environment that emphasizes language development through developmentally and culturally appropriate music and movement. Upon completion, students should be able to design an environment that develops language through a music and movement curriculum that emphasizes diversity.</td>
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<td>EDU 153</td>
<td>Health, Safety, and Nutrition</td>
<td>3</td>
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<td>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, recognizing 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.</td>
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<td>EDU 157</td>
<td>Active Play</td>
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<td>This course introduces the use of indoor and outdoor physical activities to promote the physical, cognitive, and social/emotional development of children. Topics include the role of active play, development of play skills, playground design, selection of safe equipment, and materials and surfacing for active play. Upon completion, students should be able to discuss the stages of play, the role of teachers in play, and the design of appropriate active play areas and activities.</td>
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<td>EDU 185</td>
<td>Cognitive and Language Activities</td>
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<td>Corequisites: COE 111</td>
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<td>This course covers methods of developing cognitive and language/communication skills in children. Emphasis is placed on planning the basic components of language and cognitive processes in developing curriculum activities. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate developmentally appropriate curriculum activities. This course correlates with COE 111.</td>
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<td>EDU 261</td>
<td>Early Childhood Administration I</td>
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<td>EDU 262</td>
<td>Early Childhood Administration II</td>
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<td>EDU 263</td>
<td>Developing School-Age Programs</td>
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<td>EDU 280</td>
<td>Language and Literacy Experiences</td>
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<td>EDU 282</td>
<td>Early Childhood Literature</td>
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<td>EFL 001</td>
<td>Skills Lab</td>
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<td>EFL 030</td>
<td>English for Special Purposes</td>
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<td>EFL 050</td>
<td>English for Academic Purposes</td>
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<td>EFL 061</td>
<td>Listening/Speaking I</td>
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<td>EFL 062</td>
<td>Listening/Speaking II</td>
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<td>Listening/Speaking III</td>
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<td>EFL 064</td>
<td>Listening/Speaking IV</td>
<td>5 0 0 5</td>
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</table>
**EFL 071 Reading I** 5 0 0 5  
Prerequisites: None  
Corequisites: None  
This course is designed to help those with literacy skills achieve reading fluency in English at the beginning level. Emphasis is placed on basic academic and cultural vocabulary and reading strategies which include self-monitoring, and recognizing organizational styles and context clues. Upon completion, students should be able to use these strategies to read and comprehend basic academic, narrative, and expository texts. This course is intended for non-native speakers of English.

**EFL 072 Reading II** 5 0 0 5  
Prerequisites: EFL 071  
Corequisites: None  
This course provides preparation in academic and general purpose reading in order to achieve reading fluency at the low-intermediate level. Emphasis is placed on expanding academic and cultural vocabulary and developing effective reading strategies to improve comprehension and speed. Upon completion, students should be able to read and comprehend narrative and expository texts at the low-intermediate instructional level. This course is intended for non-native speakers of English.

**EFL 073 Reading III** 5 0 0 5  
Prerequisites: EFL 072  
Corequisites: None  
This course is designed to develop fundamental reading and study strategies at the intermediate level needed for curriculum programs. Emphasis is placed on building vocabulary and cultural knowledge, improving comprehension, and developing study strategies on basic-level college materials and literary works. Upon completion, students should be able to read and comprehend narrative and expository texts at the intermediate instructional level. This course is intended for non-native speakers of English.

**EFL 074 Reading IV** 5 0 0 5  
Prerequisites: EFL 073  
Corequisites: None  
This course is designed to enhance the academic reading skills for successful reading ability as required in college-level courses. Emphasis is placed on strategies for effective reading and the utilization of these strategies to improve comprehension, analytical skills, recall, and overall reading speed. Upon completion, students should be able to comprehend, synthesize, and critique multi-disciplinary college-level reading/textbook materials. This course is intended for non-native speakers of English.

**EFL 081 Grammar I** 5 0 0 5  
Prerequisites: None  
Corequisites: EFL 091  
This course provides non-native speakers of English with a variety of fundamental grammatical concepts which enrich language skills and comprehension. Emphasis is on key basic grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate comprehension and correct usage of specified grammatical concepts.

**EFL 082 Grammar II** 5 0 0 5  
Prerequisites: EFL 081  
Corequisites: None  
This course provides non-native speakers of English with a variety of basic grammatical concepts which enrich language skills and comprehension. Emphasis is on key low-intermediate grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate by written and oral means the comprehension and correct usage of specified grammatical concepts.

**EFL 083 Grammar III** 5 0 0 5  
Prerequisites: EFL 082  
Corequisites: None  
This course is designed to provide high-intermediate non-native speakers of English with a knowledge of grammatical structures that improves academic communication. Emphasis is placed on using high-intermediate grammatical structures in meaningful contexts through exercises integrating the use of newly acquired structures with previously learned structures. Upon completion, students should be able to demonstrate improved proficiency, comprehension, and grammatical accuracy.

**EFL 084 Grammar IV** 5 0 0 5  
Prerequisites: EFL 083  
Corequisites: None  
This course is designed to give non-native speakers of English a full understanding of advanced grammatical structures and techniques. Emphasis is placed on oral and written communicative fluency through the study of advanced grammatical forms. Upon completion, students should be able to incorporate the structures covered in both spoken and written form, demonstrating improved proficiency, comprehension, and grammatical accuracy.

**EFL 091 Composition I** 5 0 0 5  
Prerequisites: None  
Corequisites: EFL 081  
This course introduces basic sentence structure and writing paragraphs. Emphasis is placed on word order, verb tense-aspect system, auxiliaries, word forms, and simple organization and basic transitions in writing paragraphs. Upon completion, students should be able to demonstrate a basic understanding of grammar and ability to write English paragraphs using appropriate vocabulary, organization, and transitions. This course is intended for non-native speakers of English.

**EFL 092 Composition II** 5 0 0 5  
Prerequisites: EFL 091  
Corequisites: None  
This course provides preparation in low-intermediate academic and general-purpose writing. Emphasis is placed on writing as a process, paragraph development, and basic essay organization. Upon completion, students should be able to write and independently edit and understand the major elements of the writing process, sentence, paragraph, and essay. This course is intended for non-native speakers of English.

**EFL 093 Composition III** 5 0 0 5  
Prerequisites: EFL 092  
Corequisites: None  
This course covers intermediate-level academic and general-purpose writing. Emphasis is placed on the writing process, content, organization, and language use in formal academic compositions in differing rhetorical modes. Upon completion, students should be able to effectively use the writing process in a variety of rhetorical modes. This course is intended for non-native speakers of English.
EFL 094 Composition IV  5 0 0 5
Prerequisites: EFL 093
Corequisites: None
This course prepares low-advanced non-native speakers of English to determine the purpose of their writing and to write paragraphs and essays to fulfill that purpose. Emphasis is placed on unity, coherence, completeness, audience, and the writing process; and the grammatical forms and punctuation appropriate for each kind of writing. Upon completion, students should be able to write unified, coherent, and complete paragraphs and essays which are grammatical and appropriate for the intended audience. This course is intended for non-native speakers of English.

EFL 095 Composition V  5 0 0 5
Prerequisites: EFL 094
Corequisites: None
This course is designed to prepare advanced non-native speakers of English for college-level composition courses. Emphasis is placed on the study and process of writing formal essays and research papers and the analysis of literary, expository, and descriptive writings. Upon completion, students should be able to write and analyze professional and peer compositions and apply basic research principles. This course is intended for non-native speakers of English.

EGR 115 Introduction to Technology  2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces the fundamental concepts of electricity and test equipment to non-electrical/electronic majors. Topics include soldering/desoldering, safety practices, test equipment, scientific calculators, AWG wire table, resistor color code, electronic devices, problem solving, and use of hand tools. Upon completion, students should be able to solder/desolder, operate test equipment, apply problem-solving techniques, and use a scientific calculator.

EGR 131 Introduction to Electronics Technology  1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the basic skills required for electrical/electronics technicians. Topics include soldering/desoldering, safety practices, test equipment, scientific calculators, AWG wire table, resistor color code, electronic devices, problem solving, and use of hand tools. Upon completion, students should be able to solder/desolder, operate test equipment, apply problem-solving techniques, and use a scientific calculator.

EGR 285 Design Project  0 4 0 2
Prerequisites: None
Corequisites: None
This course provides the opportunity to design and construct an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, construction, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate operational projects.

ELC 110 Telecommunications Circuits/Devices  3 3 0 4
Prerequisites: None
Corequisites: None
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 demonstrate an understanding of the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator. This course is an introduction to CAD using AutoCAD software.

ELC 111 Introduction to Electricity  2 2 0 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 electrical test equipment.

ELC 112 DC/AC Electricity  3 6 0 5
Prerequisites: None
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 112a DC/AC Electricity- Part 1  2 3 0 3
Prerequisites: None
Corequisites: None
This is Part 1 of a course that 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 of Parts 1 and 2, students should be able to construct, verify, and analyze simple DC/AC circuits.
ELC 112b  DC/AC Electricity-Part 2  1 3 0 2
Prerequisites: ELC 112a
Corequisites: None
This is Part 2 of a course that 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 of Parts 1 and 2, students should be able to construct, verify, and analyze simple DC/AC circuits.

ELC 113 Basic Wiring I  2 6 0 4
Prerequisites: None
Corequisites: ELC 112
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 113a Basic Wiring I-Part 1  1 3 0 2
Prerequisites: None
Corequisites: ELC 112a
This is Part 1 of a course that 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 of parts 1 and 2, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.

ELC 113b Basic Wiring I-Part 2  1 3 0 2
Prerequisites: ELC 113a
Corequisites: ELC 112b
This is Part 2 of a course that 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 of Parts 1 and 2, 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 0 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 114a Basic Wiring II-Part 1  1 3 0 2
Prerequisites: ELC 113
Corequisites: None
This is Part 1 of a course that 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 of Parts 1 and 2, students should be able to properly install equipment and conduit associated with electrical installations.

ELC 114b Basic Wiring II-Part 2  1 3 0 2
Prerequisites: ELC 114a
Corequisites: None
This is Part 2 of a course that 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 of Parts 1 and 2, students should be able to properly install equipment and conduit associated with electrical installations.

ELC 115 Industrial Wiring  2 6 0 4
Prerequisites: ELC 113
Corequisites: None
This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.

ELC 116 Telecommunications Cabling  1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the theory and practical application of both copper and fiber cabling for telecom systems. Topics include transmission theory, noise, standards, cable types and systems, connectors, physical layer components, installation, and ground/shielding techniques. Upon completion, students should be able to choose the correct cable, install, test, and troubleshoot cabling for telecom.

ELC 117 Motors and Controls  2 6 0 4
Prerequisites: ELC 111, ELC 112, or ELC 131
Corequisites: None
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 117a Motors and Controls-Part 1  1 3 0 2
Prerequisites: ELC 111, ELC 112, or ELC 131
Corequisites: None
This is Part 1 of a course that introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion of Parts 1 and 2, students should be able to properly select, connect, and troubleshoot motors and control circuits.
ELC 117b Motors and Controls- Part 2 1 3 0 2
Prerequisites: ELC 117a
Corequisites: None
This is Part 2 of a course that introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion of Parts 1 and 2, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 118 National Electrical Code 1 2 0 2
Prerequisites: None
Corequisites: ELC 112, ELC 113
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 0 2
Prerequisites: ELC 118
Corequisites: None
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.

ELC 121 Electrical Estimating 1 2 0 2
Prerequisites: ELC 113, ELC 114
Corequisites: None
This course covers the principles involved in estimating electrical projects. Topics include take-offs of materials and equipment, labor, overhead, and profit. Upon completion, students should be able to estimate simple electrical projects.

ELC 126 Electrical Computations 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion, students should be able to solve simple electrical mathematical problems.

ELC 126a Electrical Computations- Part 1 1 2 0 2
Prerequisites: None
Corequisites: None
This is Part 1 of a course that introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics included whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion of Parts 1 and 2, students should be able to solve simple electrical mathematical problems.

ELC 126b Electrical Computations- Part 2 1 0 0 1
Prerequisites: ELC 126a
Corequisites: None
This is Part 2 of a course that introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics included whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion of Parts 1 and 2, students should be able to solve simple electrical mathematical problems.

ELC 127 Software for Technicians 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces computer software which can be used to solve electrical/electronics problems. Topics include electrical/electronics calculations, applications, and controls. Upon completion, students should be able to utilize a personal computer for electrical/electronics-related applications.

ELC 128 Introduction to PLC 2 3 0 3
Prerequisites: ELC 117
Corequisites: None
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.

ELC 131 DC/AC Circuit Analysis 4 3 0 5
Prerequisites: None
Corequisites: MAT 121
This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation software, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.

ELC 134 Transformer Applications 1 2 0 2
Prerequisites: ELC 112
Corequisites: None
This course introduces transformer principles, single and three phase calculations, and connections. Upon completion, students should be able to understand single and three phase transformers, make transformer connections, and make calculations.

ELC 140 Fundamentals of DC/AC Circuits 5 6 0 7
Prerequisites: None
Corequisites: None
This course covers the principles of DC/AC circuit analysis as applied to electronics. Topics include atomic theory, circuit analysis components, test equipment, troubleshooting techniques, schematics, diagrams, and other related topics. Upon completion, students should be able to interpret, construct, verify, analyze, and troubleshoot DC/AC circuits in a safe manner.

ELC 229 Applications Project 1 3 0 2
Prerequisites: ELC 112 or ELC 113
Corequisites: None
This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project.
ELC 231  Electric Power Systems  3  2  0  4
Prerequisites: None
Corequisites: None
This course covers the basic principles of electric power systems, including transmission lines, generator and transformer characteristics, and fault detection and correction. Emphasis is placed on line diagrams and per unit calculations for circuit performance analysis in regards to voltage regulation, power factor, and protection devices. Upon completion, students should be able to analyze simple distribution subsystems, calculate fault current, and determine the size and type of circuit protection devices.

ELC 233  Energy Management  2  2  0  3
Prerequisites: ELC 231
Corequisites: None
This course covers energy management principles and techniques typical of those found in industry and commercial facilities, including load control and peak demand reduction systems. Topics include load and peak demand calculations, load shedding, load balance and power factor, priority scheduling, remote sensing and control, and supplementary/alternative energy sources. Upon completion, students should be able to determine energy management parameters, calculate demand and energy use, propose energy management procedures, and implement alternative energy sources.

ELN 112  Diesel Electronics System  2  6  0  4
Prerequisites: None
Corequisites: None
This course introduces electronic theory and applications as used in medium and heavy duty vehicles. Emphasis is placed on the basic function and operation of semiconductor and integrated circuits. Upon completion, students should be able to identify electronic components, explain their use and function, and use meters and flow charts to diagnose and repair systems.

ELN 113  Electronic Fuel Injection  1  2  0  2
Prerequisites: None
Corequisites: None
This course covers the function of the various sensors used to provide feedback control to current model diesel engines. Emphasis is placed on the operation of ECM-controlled fuel injectors and testing using current industry methods. Upon completion, students should be able to obtain information from the electronic fuel system using current test programs, fault tree, and digital meters.

ELN 116  Telecommunications Digital Logic  3  3  0  4
Prerequisites: None
Corequisites: None
This course covers the application of binary logic circuits to digital systems. Emphasis is placed on circuits that are utilized in telecom systems. Upon completion, students will be able to construct, analyze, verify, and troubleshoot telecom digital systems using appropriate techniques and test equipment.

ELN 131  Electronics Devices  3  3  -  4
Prerequisites: None
Corequisites: ELC 112, ELC 131, or ELC 140
This course includes semiconductor-based devices such as diodes, bipolar transistors, FETs, thermistors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits. Upon completion, students should be able to construct, analyze, verify, and troubleshoot discrete component circuits using appropriate techniques and test equipment.

ELN 132  Linear IC Applications  3  3  0  4
Prerequisites: ELC 131
Corequisites: None
This course introduces the characteristics and applications of linear integrated circuits. Topics include op-amp circuits, differential amplifiers, instrumentation amplifiers, waveform generators, active filters, PLLs, and IC voltage regulators. Upon completion, students should be able to construct, analyze, verify, and troubleshoot linear digital circuits using appropriate techniques and test equipment.

ELN 133  Digital Electronics  3  3  0  4
Prerequisites: None
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AD/DA 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. This course is also available through the Virtual Learning Community (VLC).

ELN 136  Telecommunications Digital Systems  3  3  0  4
Prerequisites: None
Corequisites: None
This course covers the applications of microprocessors in digital communication circuits. Emphasis is placed on interfacing I/O peripherals, data communication circuits, DSP circuits, UART’s, modems, and other communication circuits. Upon completion, students will be able to design, construct, verify, analyze, and troubleshoot using appropriate techniques and test equipment.

ELN 140  Semiconductor Devices  4  6  0  6
Prerequisites: None
Corequisites: None
This course covers semiconductor devices and circuits as they apply to the area of electronic servicing. Topics include semiconductor theory, diodes, transistors, linear integrated circuits, biasing, amplifiers, power supplies, and other related topics. Upon completion, students should be able to construct, verify, analyze, and troubleshoot semiconductor circuits.

ELN 141  Digital Fundamentals  4  6  0  6
Prerequisites: None
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, logic elements, Boolean algebra, Demorgan’s theorem, logic families, flip flops, registers, counters, and other related topics. Upon completion, students should be able to analyze, verify, and troubleshoot digital circuits.

ELN 143  Television Servicing  4  6  0  6
Prerequisites: ELN 140
Corequisites: None
This course provides a detailed study of the operation and repair of television receiver systems. Topics include operation, alignment, and repair of television receiver systems. Upon completion, students should be able to troubleshoot, maintain, and repair television receiver systems.
ELN 150  CAD for Electronics  1 3 0 2
Prerequisites: CIS 110 or CIS 111 or ELC 127
Corequisites: None
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  -  -  - 3
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Electronics Engineering Technology. Emphasis is placed on subject matter appropriate to electronics engineering technology. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ELN 229  Industrial Electronics  2 4 0 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 231  Industrial Controls  2 3 0 3
Prerequisites: ELC 131 or ELC 131 or ELC 140
Corequisites: None
This course introduces the fundamental concepts of solid-state control of rotating machinery and associated peripheral devices. Topics include rotating machine theory, ladder logic, electromechanical and solid state relays, motor controls, pilot devices, three-phase power systems, and other related topics. Upon completion, students should be able to interpret ladder diagrams and demonstrate an understanding of electromechanical and electronic control of rotating machinery.

ELN 232  Introduction to Microprocessors  3 3 0 4
Prerequisites: ELN 133
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 0 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 0 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 0 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 0 4
Prerequisites: None
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 237  Local Area Networks  2 3 0 3
Prerequisites: CIS 110 or CIS 111 or CET 111 or ELC 127
Corequisites: None
This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

ELN 240  Microprocessor Fundamentals  3 3 0 4
Prerequisites: ELN 141
Corequisites: None
This course introduces microprocessor architecture and microcomputer systems. Topics include use of technical documentation, bus architecture, I/O and memory systems, and other related topics. Upon completion, students should be able to analyze and troubleshoot basic microprocessor circuits.
ELN 241 Consumer Electronics 4 6 0 6
Prerequisites: ELC 140
Corequisites: ELN 140
This course covers the installation, maintenance, troubleshooting, and repair of consumer electronic products. Topics include the theory, operation, and maintenance of audio systems and personal communications equipment. Upon completion, students should be able to maintain, troubleshoot, and repair consumer electronic products.

ELN 242 Audio Servicing 2 3 0 3
Prerequisites: ELC 140
Corequisites: ELN 140
This course covers the installation, maintenance, troubleshooting, and repair of consumer audio equipment. Topics include the theory, operation, and maintenance of audio equipment. Upon completion, students should be able to maintain, troubleshoot, and repair consumer audio equipment.

ELN 244 Computer Repair 3 6 0 5
Prerequisites: ELN 133 or ELN 141
Corequisites: None
This course covers the assembly, upgrading, and repair of microcomputers. Topics include logic test equipment, computer motherboards, storage devices, I/O devices, power supplies, and other peripherals. Upon completion, students should be able to assemble, upgrade, maintain, troubleshoot, and repair microcomputers.

ELN 246 Certified Electronic Technician Preparation 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers electronic principles, theories, and concepts. Emphasis is placed on those items covered in the Certified Electronic Technician examination. Upon completion, students should be able to demonstrate competence in electronics and be prepared for the Certified Electronic Technician examination.

ELN 252 Introduction to Communication Protocols 2 3 0 3
Prerequisites: TNE 111, TNE 231
Corequisites: None
This course introduces various communication protocols and their place within the OSI Model. Topics include background information, historical protocols, various individual physical, link and network layer protocols, and the integration of individual layer protocols. Upon completion, students should be able to effectively use existing and future communication protocols. Emphasis will be placed on data communications over WAN.

ELN 275 Troubleshooting 1 2 0 2
Prerequisites: None
Corequisites: ELN 133 or ELN 141
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.

EMS 110 EMT-Basic 5 6 0 7
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT-Basic certification.

EMS 120 Intermediate Interventions 2 3 0 3
Prerequisites: EMS 110
Corequisites: EMS 121, EMS 130, EMS 131
This course is designed to provide the necessary information for interventions appropriate to the EMT-Intermediate and is required for intermediate certification. Topics include automated external defibrillation, basic cardiac electrophysiology, intravenous therapy, venipuncture, acid-base balance, and fluids and electrolytes. Upon completion, students should be able to properly establish an IV line, obtain venous blood, utilize AEDs, and correctly interpret arterial blood gases.

EMS 125 EMS Instructor Methodology 1 2 0 2
Prerequisites: Enrollment in EMS program
Corequisites: None
This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.

EMS 130 Pharmacology I for EMS 1 3 0 2
Prerequisites: EMS 110
Corequisites: EMS 120, EMS 131
This course introduces the fundamental principles of pharmacology and medication administration and is required for intermediate and paramedic certification. Topics include terminology, pharmacokinetics, pharmacodynamics, weights, measures, drug calculations, legislation, and administration routes. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.

EMS 131 Advanced Airway Management 1 2 0 2
Prerequisites: EMS 110
Corequisites: EMS 120, EMS 130
This course is designed to provide advanced airway management techniques and is required for intermediate and paramedic certification. Topics include respiratory anatomy and physiology, airway, ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.
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<td>1 3 0 2</td>
<td>EMS 130</td>
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<td>Advanced Medical Emergencies</td>
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**EMS 260 Advanced Trauma Emergencies**

Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111 and EMS 122

Corequisites: None

This course provides in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include hemorrhage control, shock, burns, and trauma to head, spine, soft tissue, thoracic, abdominal, and musculoskeletal areas with case presentations utilized for special problems situations. Upon completion, students should be able to recognize and manage trauma situations based upon patient impressions and should meet requirements of BTLS or PHTLS courses.

**EMS 270 Life Span Emergencies**

Prerequisites: EMS 120, EMS 130, EMS 131

Corequisites: None

This course, required for paramedic certification, covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies and certify at the Pediatric Advanced Life Support Provider level.

**EMS 285 EMS Capstone**

Prerequisites: EMS 220, EMS 250, EMS 260

Corequisites: None

This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS-related events.

**ENG 001 Writing Skills Lab**

Prerequisites: None

Corequisites: None

Designed to support courses across the curriculum that require writing by providing assistance to help students overcome deficiencies in organization and development, grammar and usage, mechanics, sentence structure and style, literary analysis and documentation.

**ENG 070 Basic Language Skills**

Prerequisites: None

Corequisites: None

This course introduces the fundamentals of standard written English. Emphasis is placed on effective word choice, recognition of sentences and sentence parts, and basic usage. Upon completion, students should be able to generate a variety of sentences that clearly express ideas. Regular readings will provide the basis for frequent writing practice.

**ENG 075 Reading and Language Essentials**

Prerequisites: None

Corequisites: None

This course uses whole language to develop proficiency in basic reading and writing. Emphasis is placed on increasing vocabulary, developing comprehension skills, and improving grammar. Upon completion, students should be able to understand and create grammatically and syntactically correct sentences.

**ENG 075A Reading and Language Essentials Lab**

Prerequisites: None

Corequisites: ENG 075

This laboratory provides the opportunity to practice the skills introduced in ENG 075. Emphasis is placed on practical skills for increasing vocabulary, developing comprehension skills, and improving grammar. Upon completion, students should be able to apply those skills in the production of grammatically and syntactically correct sentences.

**ENG 080 Writing Foundations**

Prerequisites: ENG 070 or ENG 075 or placement

Corequisites: None

This course introduces the writing process and stresses effective sentences. Emphasis is placed on applying the conventions of written English, reflecting standard usage and mechanics in structuring a variety of sentences. Upon completion, students should be able to write correct sentences and a unified, coherent paragraph. Regular readings will provide the basis for additional, less structured writing practice.

**ENG 090 Composition Strategies**

Prerequisites: ENG 080 or ENG 085 or placement

Corequisites: None

This course provides practice in the writing process and stresses effective paragraphs. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.

**ENG 090A Composition Strategies Lab**

Prerequisites: ENG 080 or ENG 085 or placement

Corequisites: ENG 090

This writing lab is designed to practice the skills introduced in ENG 090. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.

**ENG 101 Applied Communications I**

Prerequisites: None

Corequisites: None

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. A component of this course will include developing job-marketing skills.

**ENG 102 Applied Communications II**

Prerequisites: None

Corequisites: None

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. This is a diploma-level course.
ENG 110 Freshman Composition  3 0 0 3
Prerequisites:  ENG 090, RED 080  
Corequisites:  None  
This course is the first course in a series of two designed to develop informative and business writing skills. Emphasis is placed on logical organization of writing, including effective introductions and conclusions, precise use of grammar, and appropriate selection and use of sources. Upon completion, students should be able to produce clear, concise, well-organized short papers.

ENG 111 Expository Writing  3 0 0 3
Prerequisites:  ENG 090 and RED 090, or placement  
Corequisites:  None  
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 will also introduce students to the skills needed to produce a college-level research essay.

ENG 111A Expository Writing Lab  0 2 0 1
Prerequisites:  ENG 090 and RED 090, or placement  
Corequisites:  ENG 111  
This writing laboratory is designed to apply the skills introduced in ENG 111. Emphasis is placed on the editing and revision components of the writing process. Upon completion, students should be able to apply those skills in the production of final drafts in ENG 111.

ENG 112 Argument-Based Research  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  None  
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.

ENG 113 Literature-Based Research  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  None  
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 may include a variety of critical approaches.

ENG 114 Professional Research and Reporting  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  None  
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. This course is also available through the Virtual Learning Community (VLC).

ENG 125 Creative Writing I  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  ENG 112, ENG 113, or ENG 114  
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.

ENG 126 Creative Writing II  3 0 0 3
Prerequisites:  ENG 125  
Corequisites:  None  
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. A portfolio of finished work will be required of all students.

ENG 131 Introduction to Literature  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  ENG 112, ENG 113, or ENG 114  
This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).

ENG 138 English Grammar  3 0 0 3
Prerequisites:  ENG 111  
Corequisites:  None  
This course focuses on traditional, structural, and transformational grammar. Emphasis is placed on syntax, grammatical terminology, prescriptive, and descriptive grammar. Upon completion, students should be able to demonstrate an understanding of grammatical theory and application.

ENG 231 American Literature I  3 0 0 3
Prerequisites:  ENG 112, ENG 113, or ENG 114  
Corequisites:  None  
This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.
This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

This course covers the works of selected major modern American poets. Topics include each poet's theory and practice of poetry and the historical and literary traditions that influenced or were influenced by the poets. Upon completion, students should be able to read poetry with more comprehension and explicate selected poems in light of technique, theory, and poetic traditions.

This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

This course involves an analytical study of the Bible's literary aspects including history, composition, structure, and cultural contexts. Upon completion, students should be able to identify and analyze selected books and passages using appropriate literary conventions.

This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works.

This course covers the environmental problems facing society today. Topics include population, natural resources, air and water pollution, and waste disposal problems. Upon completion, students should be able to demonstrate insight into the role the individual plays in shaping the environment.
ENV 120 Earth Science 3 2 0 4
Prerequisites: ENV 110 or BIO 140 and BIO 140A
Corequisites: None
This course covers the fundamental principles of earth science that provide a foundation for continued study in environmental science. Emphasis is placed on the basic principles of geology, oceanography, meteorology, astronomy, and the development of inquiry about the natural world through observation. Upon completion, students should be able to demonstrate an understanding of the component areas of earth science.

ENV 193 Selected Topics in Environmental Science Technology - - - 3
Prerequisites: ENV 120
Corequisites: ENV 210, ENV 214
This course provides an opportunity to explore areas of current interest in Environmental Science Technology. Emphasis is placed on subject matter appropriate to environmental science technology. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ENV 210 Management of Waste 3 2 0 4
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A
Corequisites: None
This course examines contemporary environmental issues concerning the disposal of wastes. Topics include problems associated with the disposal of municipal solid waste, low-level radioactive waste, high-level radioactive waste, and hazardous and toxic waste. Upon completion, students should be able to demonstrate an understanding of the methodologies and technologies involved in the proper handling and disposal of wastes.

ENV 212 Instrumentation 3 3 0 4
Prerequisites: ENV 110 or BIO 140 and BIO 140A
Corequisites: CHM 132
This course introduces analytical techniques used in quantitative analysis of chemical samples. Emphasis is placed on both classical wet techniques of chemical analysis and modern instrumental techniques. Upon completion, students should be able to use the methodologies and technologies involved in chemical analysis.

ENV 214 Water Quality 3 2 0 4
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A
Corequisites: None
This course examines the constituents of natural waters from a biological and geochemical perspective. Topics include common components of water, water sources, water law, health consequences, water treatment procedures, and the design of water treatment plants. Upon completion, students should be able to demonstrate an understanding of the biological, chemical, and geological factors affecting water quality.

ENV 218 Environmental Health 3 0 0 3
Prerequisites: ENV 110 or BIO 140 and BIO 140A
Corequisites: None
This course covers the influence of environmental conditions on human health. Emphasis is placed on environmental contaminants and the major exposure routes of the human body. Upon completion, students should be able to examine segments of the environment, including air, water, and food, and determine how the conditions of these influence human health.

ENV 220 Applied Ecology 3 2 0 4
Prerequisites: ENV 110 or BIO 140 and BIO 140A and BIO 111
Corequisites: None
This course covers the relationships between organisms and their environment and the interactions among organisms. Topics include environmental factors affecting aquatic and terrestrial systems, regulation and dynamics of populations, interactions among species, and the ecological viewpoint in modern land management. Upon completion, students should be able to demonstrate an understanding of the relationship between man and his environment and the ecological impact of human activities.

ENV 222 Air Quality 3 2 0 4
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A
Corequisites: None
This course introduces the study of air quality and air pollution. Emphasis is placed on air pollution basics, current atmospheric conditions, effects of air pollution, air quality analysis and measurement, and regulatory control of air pollution. Upon completion, students should be able to demonstrate an understanding of the environmental hazards associated with air pollution from a human health and welfare perspective.

ENV 226 Environmental Law 3 0 0 3
Prerequisites: ENV 110 or BIO 140 and BIO 140A
Corequisites: ENV 218
This course covers federal laws and acts concerning environmental quality standards and the use of resources, legal procedures for enforcing laws, and problems concerning enforcement. Emphasis is placed on environmental law basics, water quality laws, air quality laws, waste disposal laws, and biological resource protection laws. Upon completion, students should be able to demonstrate an understanding of federal/state environmental laws and their importance to the protection of environmental quality.

ENV 228 Environmental Issues 1 0 0 1
Prerequisites: None
Corequisites: None
This course provides a forum for the discussion of current environmental issues. Emphasis is placed on environmental news, regulations, accidents, and areas of controversy. Upon completion, students should be able to demonstrate an understanding of the impact of local, state, national, and global events on environmental quality.

FRE 111 Elementary French I 3 0 0 3
Prerequisites: ENG 090 or placement
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.
FRE 112 Elementary French II 3 0 0 3
Prerequisites: FRE 111
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.

FRE 141 Culture and Civilization 3 0 0 3
Prerequisites: None
Corequisites: None
This course, taught in English, provides an opportunity to explore issues related to the Francophone world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Francophone world.

FRE 151 Francophone Literature 3 0 0 3
Prerequisites: ENG 111
Corequisites: None
This course, in English, includes selected readings by Francophone 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.

FRE 161 Cultural Immersion 2 3 0 3
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.

FRE 181 French Lab 1 0 2 0 1
Prerequisites: ENG 090 or placement
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.

FRE 182 French Lab 2 0 2 0 1
Prerequisites: FRE 181
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.

FRE 211 Intermediate French I 3 0 0 3
Prerequisites: FRE 112
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.

FRE 212 Intermediate French II 3 0 0 3
Prerequisites: FRE 211
Corequisites: FRE 282
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.

FRE 221 French Conversation 3 0 0 3
Prerequisites: FRE 212
Corequisites: None
This course provides an opportunity for intensive communication 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.

FRE 281 French Lab 3 0 2 0 1
Prerequisites: FRE 182
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.

FRE 282 French Lab 4 0 2 0 1
Prerequisites: FRE 281
Corequisites: FRE 212
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.

GEL 113 Historical Geology 3 2 0 4
Prerequisites: GEL 111 or GEL 120
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 introduces the regional concept which emphasizes typical operations, products/applications, and differences between students should be able to identify GIS hardware components, design and production. Upon completion, students should be able to utilize hardware and software to acquire, manipulate, and output options. Upon completion, students should be able to demonstrate an understanding of their functional relationships. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

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.

This course provides an overview of Global Positioning Systems (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.

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.
GRD 142 Graphic Design II 1403
Prerequisites: ART 121, DES 135, or GRD 141
Corequisites: None
This course covers the application of visual elements and design principles in advertising and graphic design. Topics include creation of various designs, such as logos, advertisements, posters, outdoor advertising, and publication design. Upon completion, students should be able to effectively apply design principles and visual elements to projects.

GRD 151 Computer Design Basics 1403
Prerequisites: RED 090
Corequisites: None
This course covers designing and drawing with various types of software applications for advertising and graphic design. Topics include the expressive use of typography, image, and organization to communicate a message. Upon completion, students should be able to use computer software to professionally present their work.

GRD 152 Computer Design Techniques I 1403
Prerequisites: GRD 151, RED 090
Corequisites: None
This course covers advanced theories and practices in the field of computer design. Emphasis is placed on advanced use of color palettes, layers, and paths. Upon completion, students should be able to creatively produce designs and articulate their rationale. This course is a composite using GRD 110, GRD 151, and GRD 152 problems.

GRD 153 Computer Design Techniques II 1403
Prerequisites: GRD 151, GRD 152, and RED 090
Corequisites: None
This course covers complex design problems utilizing various design and drawing software applications. Topics include the expressive use of typography, image, and organization to communicate a message. Upon completion, students should be able to use appropriate computer software to professionally present their work.

GRD 160 Photo Fundamentals I 1403
Prerequisites: RED 090
Corequisites: None
This course introduces basic camera operations, roll film processing, and photographic print production. Topics include contrast, depth-of-field, subject composition, enlarger operation, and density control. Upon completion, students should be able to produce photographic prints with acceptable density values and quality.

GRD 161 Photo Fundamentals II 1403
Prerequisites: GRD 160
Corequisites: None
This course is a continuation of GRD 160. Topics include conversions, toning, color, specialized equipment, lighting, processing, and other methods and materials. Upon completion, students should be able to demonstrate proficiency in producing photographic prints.

GRD 170 Exhibit Design 1403
Prerequisites: GRD 141
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 in both exhibit designs and commercial displays.

GRD 175 3-D Animation Design 1403
Prerequisites: RED 090, and GRD 151 or GRA 151
Corequisites: None
This course explores three-dimensional animation design and production. Emphasis is placed on developing essential skills and techniques using three-dimensional animation software from conceptualization to completion including design, illustration, color, spatial depth, and movement. Upon completion, students should be able to produce animation sequences for computer-related presentations.

GRD 193 Selected Topics in Digital Production 1111
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on the development of critical listening skills and the presentation of selected topic issues. Upon completion, students should be able to critically analyze issues and establish informed opinions. This is an advanced design course focusing on the principles of digital production and design projects.

GRD 198 Seminar in Advertising and Graphic Design 1111
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

GRD 230 Technical Illustration 1302
Prerequisites: RED 070, and ART 131, DES 125, or GRD 121
Corequisites: None
This course introduces technical and industrial illustration techniques. Topics include orthographic, isometric, linear perspective, and exploded views. Upon completion, students should be able to demonstrate competence in various technical rendering techniques.

GRD 232 Fashion Illustration 1302
Prerequisites: GRD 131, RED 090
Corequisites: None
This course is a study of the current fashion figure. Emphasis is placed on form and movement combined with colors, patterns, fabrics, textures, and styles to create exciting illustrations. Upon completion, students should be able to illustrate fashion figures and accessories using various media.

GRD 233 Product Illustration 1302
Prerequisites: GRD 131 or GRD 230 and GRD 152 or GRA 152
Corequisites: None
This course covers the rendering and illustration of products for commercial purposes. Topics include viewpoint, styles, media, and subjects such as household, industrial, hardware, and sporting goods. Upon completion, students should be able to illustrate products using traditional line, continuous-tone, and digital media.

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GRD 241 Graphic Design III  2 4 0 4  
Prerequisites: RED 090, and DES 136 or GRD 142  
Corequisites: None  
This course is an advanced exploration of various techniques and media for advertising and graphic design. Emphasis is placed on advanced concepts and solutions to complex and challenging graphic design problems. Upon completion, students should be able to demonstrate competence and professionalism in visual problem solving.

GRD 263 Illustrative Imaging  1 4 0 3  
Prerequisites: RED 070, and GRD 151 or GRA 151  
Corequisites: None  
This course covers the creative manipulation of images utilizing digital techniques of masking, layering, airbrushing, and painting. Topics include the aesthetic analysis of visual imagery as well as the legalities of manipulating images. Upon completion, students should be able to utilize software applications to creatively manipulate and illustratively build digital images that accomplish design objectives.

GRD 265 Digital Print Production  1 4 0 3  
Prerequisites: RED 070, and GRD 152 or GRA 151  
Corequisites: None  
This course covers preparation of digital files for output and reproduction. Emphasis is placed on output options, separations, color proofing, and cost and design considerations. Upon completion, students should be able to prepare files and select appropriate output methods for design solutions.

GRD 280 Portfolio Design  2 4 0 4  
Prerequisites: GRD 142, RED 090; and GRD 152 or GRA 152  
Corequisites: None  
This course covers the organization and presentation of a design/advertising or graphic art portfolio and appropriate related materials. Emphasis is placed on development and evaluation of the portfolio, design and production of a résumé and self-promotional materials, and interview techniques. Upon completion, students should be able to prepare and professionally present an effective portfolio and related self-promotional materials.

GRD 281 Design of Advertising  2 0 0 2  
Prerequisites: RED 090  
Corequisites: None  
This course explores the origins, roles, scope, forms, and development of advertising. Emphasis is placed on advertising development from idea through production and the interrelationship of marketing to types of advertising, media, and organizational structure. Upon completion, students should be able to demonstrate an understanding of the complexities and relationships involved in advertising design.

GRD 282 Advertising Copywriting  1 2 0 2  
Prerequisites: RED 090, ENG 111  
Corequisites: None  
This course covers copywriting for print, electronic, and broadcast advertising and promotion. Topics include advertising strategies, proposals, headlines, slogans, and text copy for various types of advertising. Upon completion, students should be able to write and articulate advertising proposals and understand the ethical and regulatory environment for advertising.

GRD 285 Client/Media Relations  1 2 0 2  
Prerequisites: RED 142 RED 090; and GRA 121 or GRA 152  
Corequisites: None  
This course introduces media pricing, scheduling, and business ethics. Emphasis is placed on communication with clients and determination of clients’ advertising needs. Upon completion, students should be able to use professional communication skills to effectively orchestrate client/media relationships.

GRD 293 Selected Topics in Advertising and Graphic Design  2 2 0 3  
Prerequisites: Varies, based on topics  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

GRD 298 Selected Topics in Advertising and Graphic Design  2 2 0 3  
Prerequisites: Varies, based on topics  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

GRO 120 Gerontology  3 0 0 3  
Prerequisites: PSY 150  
Corequisites: None  
This course covers the psychological, social, and physical aspects of aging. Emphasis is placed on the factors that promote mental and physical well-being. Upon completion, students should be able to recognize the aging process and its psychological, social, and physical aspects.

HEA 110 Personal Health/Wellness  3 0 0 3  
Prerequisites: None  
Corequisites: None  
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 will include practical, real-life applications to the material presented in the text that encourage students to apply the material to their own lives.

HEA 112 First Aid and CPR  1 2 0 2  
Prerequisites: None  
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.
<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>HET 110</td>
<td>Diesel Engines</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 110a</td>
<td>Diesel Engines-Part 1</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<tr>
<td>HET 110b</td>
<td>Diesel Engines-Part 2</td>
<td>1</td>
<td>HET 110a</td>
<td>None</td>
</tr>
<tr>
<td>HET 112</td>
<td>Diesel Electrical Systems</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 114</td>
<td>Power Trains</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 115</td>
<td>Electronic Engines</td>
<td>2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 116</td>
<td>Air Conditioning/Diesel Equipment</td>
<td>1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 120</td>
<td>Intro to Mobile Equipment</td>
<td>1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 128</td>
<td>Medium/Heavy Duty Tune Up</td>
<td>1</td>
<td>None</td>
<td>HET 110</td>
</tr>
<tr>
<td>HET 134</td>
<td>Mechanical Fuel Injection</td>
<td>2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 192</td>
<td>Selected Topics in Heavy Equipment and Transport Technology</td>
<td>-</td>
<td>Varies, based on topic</td>
<td>None</td>
</tr>
<tr>
<td>HET 231</td>
<td>Med/Heavy Duty Duty Brake Sys</td>
<td>1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>HET 232</td>
<td>Med/Hvy Duty Brake Sys Lab</td>
<td>0</td>
<td>None</td>
<td>HET 231</td>
</tr>
</tbody>
</table>

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.

Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air-conditioning systems according to industry standards.

Emphasis is placed on safety, testing and adjusting brake systems on medium and heavy duty vehicles. Topics include lighting, electrical 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.

This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers' specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

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.

This course introduces the principles of mechanical fuel injection. Emphasis is placed on test equipment, component functions, and theory. Upon completion, students should be able to diagnose, service, and repair fuel systems and governors.

This course offers an opportunity to explore areas of current interest in heavy equipment and transport technology. Emphasis is placed on subject matter appropriate to heavy equipment. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

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.

This course provides a laboratory setting to enhance the skills for troubleshooting, adjusting, and repairing brake systems on medium and heavy duty vehicles. Emphasis is placed on practical experiences that enhance the topics presented in HET 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in HET 231.
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</thead>
<tbody>
<tr>
<td>HIS 111</td>
<td>World Civilizations I</td>
<td>3</td>
<td>ENG 090, and RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 112</td>
<td>World Civilizations II</td>
<td>3</td>
<td>ENG 090, RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 117</td>
<td>History of Religions</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 121</td>
<td>Western Civilization I</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 122</td>
<td>Western Civilization II</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 124</td>
<td>History of Women</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 161</td>
<td>Science and Technology</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 162</td>
<td>Women and History</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement, or placement</td>
<td>None</td>
</tr>
<tr>
<td>HIS 167</td>
<td>The Vietnam War</td>
<td>3</td>
<td>ENG 090 and RED 090, or placement, or placement</td>
<td>None</td>
</tr>
</tbody>
</table>

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.

This course introduces western civilization from the early modern era to the present. Topics include the religious wars, the Industrial Revolution, World Wars I and II, and the Cold War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern western civilization. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

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 development 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 covers the experience of women in historical perspective. Topics include the experiences and contributions of women in culture, politics, economics, science, and religion. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural contributions of women in history. 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 American political and military involvement in Vietnam from 1944 to 1975. Topics include the French colonial policy, Vietnamese nationalism, the war with France, American involvement, and resolution of the conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments that influenced the Vietnam War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
HIS 216 Twentieth-Century Europe 3 0 0 3
Prerequisites: HIS 122
Corequisites: None
This course provides an in-depth survey of twentieth-century Europe. Topics include World Wars I and II, and political, social, and cultural movements of the twentieth century. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in twentieth-century Europe. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 221 African-American History 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course covers African-American history 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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 222 African-American Hist I 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers African American history through the Civil War period. Topics include African origins, the nature of slavery, African-American participation in the American Revolution, abolitionism, and the emergence of a distinct African-American culture. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early African-American history. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).

HIS 223 African-American Hist II 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers African American history from the Civil War to the present. Topics include Reconstruction, the Jim Crow era, urbanization, the Harlem Renaissance, the Civil Rights movement, and the philosophies of major African-American leaders. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in African-American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 226 The Civil War 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
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 socio-economic 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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 231 Recent American History 3 0 0 3
Prerequisites: ENG 090 and RED 090
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 236 North Carolina History 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
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, antebellum, 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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 242 Russian History from 1917 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course covers the development of Russia from 1917 to the present. Topics include the Russian Revolution, Stalinism, Marxist foreign policy, the world wars, the Cold War, and the present. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in Russia since 1917. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 251 English History I 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course traces the political, social, and economic development of England to the Elizabethan period. Topics include the early development of England, the Norman conquest, medieval society, and Elizabethan England. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early English history. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 252 English History II 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course traces the political, social, and economic development of England from the Elizabethan period to the present. Topics include imperialism, industrial development, civil wars, and world wars. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in English history from Elizabethan England to the present. 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>
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</thead>
<tbody>
<tr>
<td>HIS 271</td>
<td>The French Revolution Era</td>
<td>3 0 0 3</td>
<td>This course traces the causes and effects of the French Revolution. Topics include the Enlightenment; Jacobins; Reign of Terror; Napoleon's republic, empire, and wars; and the French Revolution's impact upon world history. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments during the French revolutionary era. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</em></td>
</tr>
<tr>
<td>HOR 268</td>
<td>Advanced Propagation</td>
<td>3 3 0 4</td>
<td>This course covers applied production techniques for asexual and sexual plant propagation. Emphasis is placed on the major accepted methods of asexual propagation and sexual propagation of woody ornamental plants, with evaluation of all initiated propagation. Upon completion, students should be able to successfully propagate a variety of plant materials utilizing methods covered in the course.</td>
</tr>
</tbody>
</table>
| HPC 110     | Introduction To HPC           | 2 2 0 3 | Corequisites: None  
Prerequisites: RED 090, MAT 070  
This course introduces students to the terminology, hardware performance issues, programming models and software tools available for High Performance Computing (HPC). Topics include a survey of HPC concepts and terminology, HPC operating systems, memory models and architecture, PC clusters, highly integrated supercomputers and high-speed communications. Upon completion, students should be able to build a PC cluster. |
| HPC 130     | Introduction to HPC Communication | 2 2 0 3 | Corequisites: None  
Prerequisites: None  
This course introduces students to the communications aspect of remedy accessing massively parallel machines and PC clusters. Topics include single and multi-stage interconnection networks, optimization techniques, load balancing, bandwidths, data communications and buffer size optimization. Upon completion, students should be able to discuss and evaluate high-speed communication techniques and strategies in HPC Systems. |
| HPC 140     | Introduction to HPC Architecture | 2 2 0 3 | Corequisites: None  
Prerequisites: RED 090, MAT 070  
This course introduces students to hardware architecture for the High Performance Computing environment (HPC). Topics include distributed and shared memory systems, hardware design issues, vector parallel machines and communication issues of remote massively parallel machines and clusters. Upon completion, students should be able to discuss and evaluate architectural design issues in a HPC system. |
| HPC 150     | HPC Networking Technology    | 2 2 0 3 | Corequisites: None  
Prerequisites: HPC 110 or NET 110  
This course introduces students to the networking topologies in a HPC environment. Topics include multiprocessor networks, network interface, testing methods and prototype development for high-speed network technologies, interoperability among high-speed network products and virtual networks. Upon completion, students should be able to discuss network issues for a HPC environment. |
| HPC 152     | HPC Development Tools         | 2 2 0 3 | Corequisites: None  
Prerequisites: HPC 110  
This course introduces students to performance analysis tools to measure, predict, locate, and analyze bottleneck situations in parallel and cluster application. Topics include system software, parallel software life-cycle issues and a review of parallel developmental options in a HPC environment. Upon completion, students should be able discuss various HPC development tools and their appropriate usage in the HPC environment. |
| HPC 162     | HPC Security                 | 2 2 0 3 | Corequisites: None  
Prerequisites: HPC 110  
This course provides an overview of distributed computer security issues as related to HPC services. Topics include cryptographic technologies, protocols used to construct secure and private systems, internet service security mechanisms, firewalls, auditing, and related topics. Upon completion, students should be able to implement security procedures for a HPC system. |
| HPC 170     | Introduction to HPC Data Mining | 2 2 0 3 | Corequisites: None  
Prerequisites: HPC 110  
This course provides an introduction to data intensive computing on HPC machines. Topics include distributed mass storage, efficient retrieval techniques, data management tools, appropriate data structures and case studies. Upon completion, students should be able to define and discuss performance evaluation of a database in a HPC environment. |
| HPC 172     | HPC Applications              | 2 2 0 3 | Corequisites: None  
Prerequisites: HPC 110  
This course introduces students to currently available HPC applications highlighting software approaches and hardware platforms. Topics include a review of successfully deployed HPC systems in industry and research environments and decision-making techniques when selecting HPC. Upon completion, students should be able to discuss, in oral as well as written form, current HPC applications highlighting strengths and weaknesses. |
| HPC 180     | Introduction to Cluster Computing | 2 2 0 3 | Corequisites: None  
Prerequisites: MAT 070, RED 090  
This course provides students with the current and emerging trends in cluster computing. Topics include current and emerging technologies in system architecture, networking, software environments, configuration, management tools, application libraries and utilities in a cluster environment. Upon completion, students should be able to discuss and illustrate fundamental cluster technology approaches using examples from engineering, scientific and/or data intensive applications.
HPC 193 Selected Topics in HPC
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in High Performance Computing. Emphasis is placed on the subject matter appropriate to High Performance Computing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

HPC 198 Seminar in HPC
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in High Performance Computing. 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.

HPC 230 Advanced HPC Communication
Prerequisites: HPC 130
Corequisites: None
This course introduces students to advanced communication and networking topics in a HPC environment. Topics include switch queuing strategy, performance modeling, review of current high-speed communication networks and available tools and libraries for improving high-speed communications. Upon completion, students should be able to design and defend a reliable high-speed communication model for a HPC environment.

HPC 240 Advanced HPC Architecture
Prerequisites: HPC 140
Corequisites: None
This course introduces students to advanced hardware architecture for a (HPC) system. Topics include topology of parallel computer architecture, arithmetic pipeline design, array machines, distributed architecture, multi-processor computers, SIMD, MIMD machines and current recent parallel machines. Upon completion, students should be able to design and discuss a user specified HPC architecture system.

HPC 245 Grid Technologies
Prerequisites: HPC 110
Corequisites: None
This course introduces students to Grid technologies and distributed computing architecture. Topics include distributed security architecture, data formats, distributed file systems, access control of shared resources and multi-institutional collaborative environments. Upon completion, students should be able to discuss, in oral and written form, issues related to creating a scalable, distributed and secure HPC Grid environment.

HPC 262 Advanced HPC Security
Prerequisites: HPC 162
Corequisites: None
This course introduces students to advanced security topics and various security applications. Topics include authentication for distributed systems, authorization models, developing secure distributed operating systems and databases, distributed intrusion detection, advanced cryptographic algorithms. Upon completion, students should be able to design a secure distributed system in a HPC environment.

HPC 264 HPC Security Management
Prerequisites: HPC 162
Corequisites: None
This course is designed to provide students with a review of access and security management practices in a HPC environment. Topics include HPC disaster recovery, business continuity, redundancy and reliability policies, HPC hardware, software and network security models and physical security. Upon completion, students should be able to prepare a HPC disaster recovery continuity plan, and review security practices in every area of the HPC environment.

HPC 270 Advanced HPC Data Mining
Prerequisites: HPC 170
Corequisites: None
This course introduces students to advance data mining and database design techniques in a HPC environment. Topics include data retrieval algorithms, text mining techniques, document clustering, query clusters, mathematical models, data fusion and software design for information retrieval. Upon completion, students should be able to design and implement a database using data mining techniques in a HPC environment.

HPC 272 Emerging HPC Technologies
Prerequisites: HPC 110
Corequisites: None
This course introduces students to emerging technologies in the field of High Performance Computing (HPC). Emphasis is placed on the new technologies in the HPC field and a review of HPC and cluster systems already implemented. Upon completion, students should be able to discuss, in written and oral form emerging technologies in the HPC field.

HPC 280 Advanced Cluster Computing
Prerequisites: HPC 180
Corequisites: None
This course introduces students to advanced design techniques and related issues in cluster computing. Topics include a review of successfully deployed cluster systems used in commerce, industry and research environments. Upon completion, students should be able to summarize findings and draw conclusions about current cluster technology, discuss emerging technology trends and clusters of the future.

HPC 285 Systems Analysis and Design
Prerequisites: HPC 110
Corequisites: None
This course provides an opportunity for students to complete a significant HPC systems project with minimal instructor support. Emphasis is placed on project definition, documentation, testing, and presentation. Upon completion, students should be able to complete a HPC project.

HPC 293 Selected Topics in Bioinformatics Capstone
Prerequisites: HPC 272 and NET 145
Corequisites: HPC 170 and CSC 185
The capstone project is a culminating experience to the Bioinformatics Computing certificate program. It represents the ability to formulate a project and implement it from start to finish using a combination of conceptual, technical and applied knowledge. The project will demonstrate an understanding of the design, implementation and use of web accessible biological databases.
HRM 10 Introduction to Hospitality
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 understand the scope and responsibilities of the hospitality industry.

HRM 115 Housekeeping
Corequisites: None
This course covers the scope, responsibilities, communications, terminology, materials, and concerns specific to hotel housekeeping. Topics include management and supervision of housekeeping staff in the proper cleaning and sanitation of rooms and public areas, budgeting, purchasing, security, and inventory control. Upon completion, students should be able to understand and apply the principles of organization and management of a housekeeping department.

HRM 120 Front Office Procedures
Corequisites: None
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.

HRM 140 Hospitality Tourism Law
Corequisites: HRM 110
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 145 Hospitality Supervision
Corequisites: None
This course covers principles of supervision as they apply to the hospitality industry. Topics include recruitment, selection, orientation, training, evaluation, and leadership skills. Upon completion, students should be able to understand and apply basic supervisory skills unique to the hospitality and service industry.

HRM 193 Selected Topics in Hotel and Restaurant Management
Corequisites: None
This course provides an opportunity to explore areas of current interest in Hotel and Restaurant Management. Emphasis is placed on subject matter appropriate to hotel and restaurant management. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

HRM 200 Food and Beverage Controls
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 210 Meetings and Conventions
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 215 Restaurant Management
Corequisites: None
This course provides an overview of the various challenges and responsibilities encountered in managing a food and beverage operation. Topics include planning, administration, organization, accounting, marketing, and human resources from an integrated managerial viewpoint. Upon completion, students should be able to demonstrate an understanding of the operation of a restaurant.

HRM 220 Food and Beverage Management
Corequisites: None
This course introduces the management of beverage operations from an integrated managerial viewpoint. Upon completion, students should be able to describe and apply the principles of management to multi-function, multi-day conferences and events.

HRM 225 Beverage Management
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.
HSE 127 Conflict Resolution 2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces conflict resolution and mediation theory and practice. Emphasis is placed on achieving compromise and a win/win perception. Upon completion, students should be able to demonstrate competence in identifying seemingly dissimilar positions and facilitating agreement.

HSE 145 Child Abuse and Neglect 3 0 0 3  
Prerequisites: None  
Corequisites: None  
This course explores the abused and neglected child, including the nature and dimension of the problem. Emphasis is placed on various types of abuse and neglect, their causes, proper treatment, and reporting laws and procedures. Upon completion, students should be able to identify family intervention and counseling techniques to help parents effectively cope in parent-child conflicts.

HSE 155 Community Resources Management 2 0 0 2  
Prerequisites: None  
Corequisites: None  
This course focuses on the working relationships between human services agencies and the community. Emphasis is placed on identification and observation of community resources which contribute to the achievement of the human services mission. Upon completion, students should be able to demonstrate knowledge about mobilizing of community resources, marshaling public support, and determining appropriate sources of funding.

HSE 210 Human Services Issues 2 0 0 2  
Prerequisites: None  
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 220 Case Management 2 2 0 3  
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 3 0 0 3  
Prerequisites: None  
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 250 Financial Services 2 0 0 2  
Prerequisites: None  
Corequisites: None  
This course introduces those agencies that provide income maintenance casework services. Emphasis is placed on qualifying applicants for a variety of economic assistant programs offered by human services agencies. Upon completion, students should be able to make a factual and objective assessment of a client's economic situation to qualify them for economic assistance.
HUM 110 Technology and Society 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).

HUM 115 Critical Thinking 3 0 0 3
Prerequisites: ENG 090, ENG 095, or RED 090, or placement
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. Students will also explore the parameters of selected ethical issues.

HUM 121 The Nature of America 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an interdisciplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life. 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 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
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 2 2 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces the fundamental elements of film artistry and 7165 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.

HUM 161 Advanced Film Studies 2 2 0 3
Prerequisites: HUM 160
Corequisites: None
This course provides an advanced study of film art and production, building on skills learned in HUM 160. Topics include film production techniques, film genres, examination of master directors’ styles, and the relation of film to culture. Upon completion, students should be able to recognize and critically analyze advanced elements of film production.

HUM 170 The Holocaust 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course provides a survey of the destruction of European Jewry by the Nazis during World War II. Topics include the anti-Semitic ideology, bureaucratic structures, and varying conditions of European occupation and domination under the Third Reich. Upon completion, students should be able to demonstrate an understanding of the historical, social, religious, political, and economic factors which cumulatively resulted in the Holocaust. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HUM 211 Humanities I 3 0 0 3
Prerequisites: ENG 111
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 3 0 0 3
Prerequisites: ENG 111
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 early modern times to the present. 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 3 0 0 3
Prerequisites: ENG 111, ENG 112, ENG, 113, ENG 114
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.
operation of a fluid power system, including design, application, and technical manuals. Upon completion, students should be able to identify, repair, and replace hydraulic and hydrostatic systems on construction equipment. This course covers hydraulic/hydrostatic components of construction equipment hydraulics and power trains. Topics include testing, adjusting, repair, and replacement of components that are applied to construction equipment hydraulics and transmissions along with other related topics. Upon completion, students should be able to use proper diagnostic procedures and identify, repair, and replace hydraulic and hydrostatic systems on construction equipment.

HYD 134 Hydraulic/Hydrostatic Construction 2 4 0 4
Prerequisites: None
Corequisites: None
This course covers the hydraulic/hydrostatic components of construction equipment hydraulics and power trains. Topics include testing, adjusting, repair, and replacement of components that are applied to construction equipment hydraulics and transmissions along with other related topics. Upon completion, students should be able to use proper diagnostic procedures and identify, repair, and replace hydraulic and hydrostatic systems on construction equipment.

INT 110 International Business 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of the environment, concepts, and basic differences involved in international business. Topics include forms of foreign involvement, international trade theory, governmental influences on trade and strategies, international organizations, multinational corporations, personnel management, and international marketing. Upon completion, students should be able to describe the foundation of international business.

ISC 110 Workplace Safety 1 0 0 1
Prerequisites: None
Corequisites: None
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.

ISC 112 Industrial Safety 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces the principles of industrial safety. Emphasis is placed on industrial safety, OSHA and environmental regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance. This course is also available through the Virtual Learning Community (VLC).

ISC 121 Environmental Health and Safety 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers workplace environmental, health, and safety issues. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental, health, and safety issues.

ISC 128 Industrial Leadership 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces principles and techniques for managers in modern industry. Topics include leadership traits, management principles and processes, managing conflict, group dynamics, team building, counseling, motivation, and communication. Upon completion, students should be able to understand and apply leadership and management principles in work situations.

ISC 132 Manufacturing Quality Control 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment. Each student will be taught statistical analysis techniques, using computer software in a laboratory 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>ISC 133</td>
<td>Manufacturing Management Practices</td>
<td>2.0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 136</td>
<td>Productivity Analysis I</td>
<td>3.0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 175</td>
<td>QA Fundamentals</td>
<td>1.0</td>
<td>None</td>
<td>None</td>
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<tr>
<td>ISC 221</td>
<td>Statistical Quality Control</td>
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<td>None</td>
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<tr>
<td>ISC 226</td>
<td>Facilities Design</td>
<td>3.0</td>
<td>ISC 136</td>
<td>None</td>
</tr>
<tr>
<td>ISC 230</td>
<td>Simulation Production Processes</td>
<td>1.0</td>
<td>None</td>
<td>None</td>
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<tr>
<td>ISC 237</td>
<td>Quality Management</td>
<td>3.0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 243</td>
<td>Production and Operations Management I</td>
<td>3.0</td>
<td>ISC 243</td>
<td>None</td>
</tr>
<tr>
<td>ISC 244</td>
<td>Production and Operations Management II</td>
<td>3.0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 255</td>
<td>Engineering Economy</td>
<td>2.0</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 277</td>
<td>Quality Technology</td>
<td>0.5</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>ISC 278</td>
<td>cGMP Quality Systems</td>
<td>2.0</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
ISC 280 Validation Fundamentals 2 0 2
Prerequisites: None
Corequisites: None
This course covers the fundamental concepts and components of a validation program in a cGMP environment. Emphasis is placed on FDA requirements concerning validation, types of validation, documentation, procedures, and the QA role. Upon completion, students should be able to discuss the purpose of validation, identify the steps in the validation process, and effectively utilize sample documentation.

ITN 110 See WEB 111.

ITN 120 See WEB 120.

ITN 130 See WEB 230.

ITN 140 See WEB 140.

ITN 150 Internet Protocols 2 0 3
Prerequisites: NET 110
Corequisites: None
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.

ITN 160 See WEB 210.

ITN 170 See WEB 250.

ITN 180 See WEB 180.

ITN 193 Selected Topics in Internet Technologies - - - 3
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in Internet Technologies. Emphasis is placed on subject matter appropriate to internet technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ITN 196 Seminar in: C++ Test Prep 0 0 3 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore topics of current interest in Computer Programming. 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.

ITN 198 Seminar in Internet Technologies - - - 3
Prerequisites: CIS 115
Corequisites: None
This course provides an opportunity to explore areas of current interest in Internet Technologies. 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.

ITN 210 See WEB 211.

ITN 220 See WEB 220.
J

JOU 110 Introduction to Journalism 3 0 0 3
Prerequisites: None
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.

JOU 111 Publication Workshop I 1 3 0 2
Prerequisites: JOU 110
Corequisites: None
This course introduces the basic techniques of producing a publication. Emphasis is placed on writing, editing, layout, design, and printing. Upon completion, students should be able to demonstrate competence in the various phases of publication production.

JOU 242 Introduction to Multimedia 2 2 0 3
Prerequisites: CIS 110
Corequisites: None
This course is an introduction to the basic formatting skills necessary to create messages for the multimedia environment such as web-based and other digital formats. Emphasis is on the use of computers to present and combine text, graphics, audio, and video. Upon completion, students should be able to create state-of-the-art multimedia presentations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

L

LAR 111 Introduction to Landscape Architectural Technology 1 6 0 3
This course introduces basic architectural drafting techniques, lettering, and use of architectural and engineering scales. Topics include creating landscape architectural plans, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum landscape architectural standards.

LAR 112 Landscape Materials and Methods 3 2 0 4
Prerequisites: None
Corequisites: None
This course introduces landscape architecture construction materials and their methodologies. Topics include landscape construction terminology, materials, and their properties, manufacturing processes, landscape construction techniques, and other related topics. Upon completion, students should be able to detail landscape construction materials and properties.

LAR 113 Residential Landscape Design 1 6 0 3
Prerequisites: LAR 111
Corequisites: None
The course covers the creation of residential landscape design working drawings. Topics include residential plans, elevation, sections, plant selection/lists, and other related topics. Upon completion, students should be able to prepare a set of residential landscape working drawings which are within accepted architectural standards.

LAR 193 Selected Topics in Landscape Architecture - - - 3
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Landscape Architecture Technology. Emphasis is placed on subject matter appropriate to landscape architecture. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

LAR 211 Landscape Construction and Design 1 6 0 3
Prerequisites: LAR 113
Corequisites: None
This course covers commercial landscape construction and design techniques. Topics include creation of commercial landscape architecture plans, sections, and details; plotting techniques; and other related topics. Upon completion, students should be able to prepare a set of working drawings and plot scaled drawings within landscape architectural standards.

LAR 223 Landscape Design Project 2 6 0 4
Prerequisites: ARC 114, LAR 211
Corequisites: None
This course provides the opportunity to design and prepare landscape contract documents. Topics include schematic design, design development, construction documents, landscape architecture plans, and other related topics. Upon completion, students should be able to prepare a set of working drawings within landscape architectural standards.

LAR 230 Principles of Horticulture I 3 3 0 4
Prerequisites: None
Corequisites: None
This course introduces the identification, selection, and installation of landscape plants. Topics include ornamental plant selection, sun and shade plants, fertilization, pruning, pest and disease control, and other related topics. Upon completion, students should be able to select plants for different landscape situations.

LAR 231 Principles of Horticulture II 2 3 0 3
Prerequisites: LAR 230
Corequisites: None
This course is a continuation of LAR 230 and covers the identification, selection, and installation of landscape plants. Topics include deciduous/evergreen and interior plant selection, sun and shade plants, fertilization, pruning, pest and disease identification, and other related topics. Upon completion, students should be able to select plants for different landscape situations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAR 241</td>
<td>Advanced Site Planning</td>
<td>2</td>
<td>ARC 240</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course covers advanced site planning, grading plants, and earthwork calculations. Topics include advanced 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.</td>
<td></td>
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</tr>
<tr>
<td>LAR 242</td>
<td>Planning and Environment</td>
<td>2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course covers the historical development of urban and rural environmental problems and issues. Emphasis is placed on governmental response to environmental issues, built and natural environments, historical conflicts, and attempts to produce planning compatibility. Upon completion, students should be able to demonstrate an understanding of the importance of considering natural resources when making political and planning decisions.</td>
<td></td>
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</tr>
<tr>
<td>LAR 250</td>
<td>Survey of Landscape Architecture</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course introduces the historical trends in landscape architectural forms. Emphasis is placed on landscape architectural history and current trends. Upon completion, students should be able to demonstrate an understanding of significant historical and current landscape architectural styles. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>LAT 111</td>
<td>Elementary Latin I</td>
<td>3</td>
<td>ENG 090 or placement</td>
<td>LAT 181</td>
</tr>
<tr>
<td></td>
<td>This course introduces the fundamental elements of Latin within a cultural context. Emphasis is placed on the development of basic reading and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to written Latin and demonstrate cultural awareness.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAT 112</td>
<td>Elementary Latin II</td>
<td>3</td>
<td>LAT 111</td>
<td>LAT 182</td>
</tr>
<tr>
<td></td>
<td>This course is a continuation of LAT 111 focusing on the fundamental elements of Latin within a cultural context. Emphasis is placed on the progressive development of reading, vocabulary, and grammar skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to written Latin and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>LAT 181</td>
<td>Latin Lab I</td>
<td>0</td>
<td>ENG 090 or placement</td>
<td>LAT 111</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to enhance acquisition of the fundamental elements of Latin. Emphasis is placed on the progressive development of basic 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 written Latin 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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAT 182</td>
<td>Latin Lab II</td>
<td>0</td>
<td>LAT 181</td>
<td>LAT 112</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to enhance acquisition of the fundamental elements of Latin. Emphasis is placed on the progressive development of basic reading and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to demonstrate increasing proficiency in reading and writing Latin 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.</td>
<td></td>
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<td></td>
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<tr>
<td>LAT 211</td>
<td>Intermediate Latin I</td>
<td>3</td>
<td>LAT 112</td>
<td>LAT 281</td>
</tr>
<tr>
<td></td>
<td>This course provides a review and expansion of the essential skills of Latin. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to accurately read and comprehend Latin. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAT 212</td>
<td>Intermediate Latin II</td>
<td>3</td>
<td>LAT 211</td>
<td>LAT 282</td>
</tr>
<tr>
<td></td>
<td>This course provides a continuation of LAT 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to comprehend increased accuracy in reading and comprehension of Latin. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>LAT 281</td>
<td>Latin Lab 3</td>
<td>0</td>
<td>LAT 182</td>
<td>LAT 211</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to enhance the review and expansion of the essential skills of Latin. Emphasis is placed on the study of representative literary and cultural texts. Upon completion, students should be able to comprehend and respond with grammatical accuracy to written Latin and demonstrate cultural awareness.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAT 282</td>
<td>Latin Lab 4</td>
<td>0</td>
<td>LAT 281</td>
<td>LAT 212</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to enhance the review and expansion of the essential skills of Latin. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of supplementary learning materials. Upon completion, students should be able to demonstrate increased proficiency in reading and writing Latin. 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>
</table>
### MAC 111 Machining Technology I
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2</td>
<td>None</td>
<td>None</td>
<td>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.</td>
</tr>
</tbody>
</table>

**MAC 111a Machining Technology I-Part 1**
- Credits: 1
- Prerequisites: None
- Corequisites: None

This course is the first half of MAC 111.

**MAC 111b Machining Technology I-Part 2**
- Credits: 1
- Prerequisites: MAC 111a
- Corequisites: None

This course is the second half of MAC 111.

### MAC 112 Machining Technology II
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2</td>
<td>MAC 111</td>
<td>None</td>
<td>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.</td>
</tr>
</tbody>
</table>

### MAC 113 Machining Technology III
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2</td>
<td>MAC 112</td>
<td>None</td>
<td>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.</td>
</tr>
</tbody>
</table>

### MAC 114 Introduction to Metrology
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>None</td>
<td>None</td>
<td>This course introduces the care and use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate the correct use of measuring instruments.</td>
</tr>
</tbody>
</table>

### MAC 121 Introduction to CNC
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>None</td>
<td>None</td>
<td>This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.</td>
</tr>
</tbody>
</table>

### MAC 122 CNC Turning
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers.</td>
</tr>
</tbody>
</table>

### MAC 124 CNC Milling
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>None</td>
<td>None</td>
<td>This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers.</td>
</tr>
</tbody>
</table>

### MAC 126 CNC Metal Fabrication
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>None</td>
<td>None</td>
<td>This course introduces CNC operations used in precision metal fabrication. Topics include CNC control of shears, brakes, punch presses, and lasers and the programming techniques used to produce parts. Upon completion, students should be able to demonstrate knowledge of equipment operations, CNC control functions, and part programming.</td>
</tr>
</tbody>
</table>

### MAC 151 Machining Calculations
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>None</td>
<td>None</td>
<td>This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.</td>
</tr>
</tbody>
</table>

### MAC 152 Advanced Machining Calculations
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>None</td>
<td>None</td>
<td>This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.</td>
</tr>
</tbody>
</table>

### MAC 153 Compound Angles
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>MAT 120</td>
<td>None</td>
<td>This course introduces the application of basic types and uses of compound angles. Emphasis is placed on problem solving by tilting and rotating adjacent angles to resolve an unknown compound angle. Upon completion, students should be able to set up and develop compound angles on parts using problem-solving techniques. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.</td>
</tr>
</tbody>
</table>

### MAC 222 Advanced CNC Turning
<table>
<thead>
<tr>
<th>Credits</th>
<th>Semester Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>MAC 122</td>
<td>None</td>
<td>This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Units</td>
<td>2006-2007 Catalog</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>MAC 224</td>
<td>Advanced CNC Milling</td>
<td>1 3 0 2</td>
<td></td>
<td>This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.</td>
</tr>
<tr>
<td>MAC 229</td>
<td>CNC Programming</td>
<td>2 0 0 2</td>
<td></td>
<td>This course provides continued study in the application and use of CNC machining centers. Emphasis is placed on the design and manufacturing of complex dies. Upon completion, students should be able to design and build simple dies.</td>
</tr>
<tr>
<td>MAC 241</td>
<td>Jigs and Fixtures I</td>
<td>2 6 0 4</td>
<td></td>
<td>This course introduces the application and use of jigs and fixtures. Emphasis is placed on design and manufacture of simple jigs and fixtures. Upon completion, students should be able to design and build simple jigs and fixtures.</td>
</tr>
<tr>
<td>MAC 243</td>
<td>Die Making I</td>
<td>2 6 0 4</td>
<td></td>
<td>This course introduces the principles and applications of die making. Topics include types, construction, and application of dies. Upon completion, students should be able to design and build simple dies.</td>
</tr>
<tr>
<td>MAC 244</td>
<td>Die Making II</td>
<td>1 9 0 4</td>
<td></td>
<td>This course provides continued study in the application and use of dies. Emphasis is placed on the design and manufacturing of complex dies. Upon completion, students should be able to design and build complex dies.</td>
</tr>
<tr>
<td>MAC 245</td>
<td>Mold Construction I</td>
<td>2 6 0 4</td>
<td></td>
<td>This course introduces the principles of mold making. Topics include types, construction, and application of molds. Upon completion, students should be able to design and build simple molds.</td>
</tr>
<tr>
<td>MAC 246</td>
<td>Mold Construction II</td>
<td>1 9 0 4</td>
<td></td>
<td>This course provides continued study in the application and use of molds. Emphasis is placed on design and manufacturing of complex molds. Upon completion, students should be able to design and build complex molds.</td>
</tr>
<tr>
<td>MAT 001</td>
<td>Mathematics Skills Lab</td>
<td>- - - -</td>
<td></td>
<td>Designed to support all curriculum mathematics courses and other curriculum courses requiring the use of mathematics skills.</td>
</tr>
<tr>
<td>MAT 050</td>
<td>Basic Math Skills</td>
<td>3 2 0 4</td>
<td></td>
<td>This course is designed to strengthen basic math skills. Topics include signed numbers, exponents, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant mathematical problems.</td>
</tr>
<tr>
<td>MAT 060</td>
<td>Essential Mathematics</td>
<td>3 2 0 4</td>
<td></td>
<td>This course is a comprehensive study of mathematical skills which should provide a strong mathematical foundation to pursue further study. Topics include principles and applications of decimals, fractions, percents, ratio and proportion, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant, multi-step mathematical problems using technology where appropriate.</td>
</tr>
<tr>
<td>MAT 070</td>
<td>Introductory Algebra</td>
<td>3 2 0 4</td>
<td></td>
<td>This course establishes a foundation in algebraic concepts and problem solving. Topics include signed numbers, exponents, order of operations, simplifying expressions, solving linear equations and inequalities, graphing, formulas, polynomials, factoring, and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology.</td>
</tr>
<tr>
<td>MAT 080</td>
<td>Intermediate Algebra</td>
<td>3 2 0 4</td>
<td></td>
<td>This course continues the study of algebraic concepts with emphasis on applications. Topics include factoring; rational expressions; rational exponents; rational, radical, and quadratic equations; systems of equations; inequalities; graphing; functions; variations; complex numbers; and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Prerequisites</td>
<td>Corequisites</td>
</tr>
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</tr>
<tr>
<td>MAT 090</td>
<td>Accelerated Algebra</td>
<td>3 2 0 4</td>
<td>MAT 060 or MAT 080 or placement</td>
<td>RED 080 or ENG 085</td>
</tr>
</tbody>
</table>

This course covers algebraic concepts with emphasis on applications. Topics include those covered in MAT 070 and MAT 080. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology.

<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>MAT 095</td>
<td>Algebraic Concepts</td>
<td>3 0 0 3</td>
<td>MAT 080</td>
<td>None</td>
</tr>
</tbody>
</table>

This course covers algebraic concepts with an emphasis on applications. Topics include linear, quadratic, absolute value, rational and radical equations, sets, real and complex numbers, exponents, graphing, formulas, polynomials, systems of equations, inequalities, and functions. Upon completion, students should be able to apply the above topics in problem solving using appropriate technology.

<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>MAT 099</td>
<td>Using Technology in Math</td>
<td>1 0 0 1</td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

This course provides an introduction to the technology used in the study of mathematics. Topics include the use of technology to perform calculations, graph and analyze functions, create algebraic models, perform statistical analysis, and make tables of values. Upon completion, students should be able to effectively use graphing calculators and spreadsheets as mathematical tools to explore functions, analyze data, and solve problems.

<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>MAT 101</td>
<td>Applied Mathematics I</td>
<td>2 2 0 3</td>
<td>MAT 060</td>
<td>None</td>
</tr>
</tbody>
</table>

This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study.

<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>MAT 110</td>
<td>Mathematical Measurement</td>
<td>2 2 0 3</td>
<td>MAT 070</td>
<td>None</td>
</tr>
</tbody>
</table>

This course provides an activity-based approach to utilizing, interpreting, and communicating data in a variety of measurement systems. Topics include accuracy, precision, conversion, and estimation within metric, apothecary, and avoirdupois systems; ratio and proportion; measures of central tendency and dispersion; and charting of data. Upon completion, students should be able to apply proper techniques to gathering, recording, manipulating, analyzing, and communicating data.

<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>MAT 115</td>
<td>Mathematical Models</td>
<td>2 2 0 3</td>
<td>MAT 070</td>
<td>None</td>
</tr>
</tbody>
</table>

This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions and their groups, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently.

<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>MAT 121</td>
<td>Algebra and Trigonometry I</td>
<td>2 2 0 3</td>
<td>MAT 070</td>
<td>None</td>
</tr>
</tbody>
</table>

This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation, and solving of algebraic and radical functions; complex numbers; right triangle trigonometry; systems of equations; and the use of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and analyze and communicate results.

<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>MAT 122</td>
<td>Algebra/ Trigonometry II</td>
<td>2 2 0 3</td>
<td>MAT 121</td>
<td>None</td>
</tr>
</tbody>
</table>

This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, translation and scaling of functions, Sine Law, Cosine Law, vectors, and statistics. Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

<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>MAT 140</td>
<td>Survey of Mathematics</td>
<td>3 0 0 3</td>
<td>MAT 070</td>
<td>MAT 140A</td>
</tr>
</tbody>
</table>

This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics may 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.

<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>MAT 140A</td>
<td>Survey of Mathematics Lab</td>
<td>0 2 0 1</td>
<td>MAT 070</td>
<td>MAT 140</td>
</tr>
</tbody>
</table>

This course is a laboratory for MAT 140. 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>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 141</td>
<td>Mathematical Concepts I</td>
<td>3 0 0 3</td>
<td>MAT 080 or MAT 090</td>
<td>None</td>
</tr>
</tbody>
</table>

This course is the first of a two-course sequence that develops a deeper understanding and appreciation of the basic concepts of mathematics. Emphasis is placed on sets, logic, number bases, elementary number theory, introductory algebra, measurement including metrics, and problem solving. Upon completion, students should be able to communicate orally and in writing these basic mathematical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.
<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>MAT 141A</td>
<td>Mathematical Concepts I Lab</td>
<td>0 2 0 1</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 141</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 141. 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. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 142</td>
<td>Mathematical Concepts II</td>
<td>3 0 0 3</td>
<td>MAT 141</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is the second of a two-course sequence that develops a deeper understanding and appreciation of the basic concepts of mathematics. Emphasis is placed on probability, statistics, functions, introductory geometry, and mathematics of finance. Upon completion, students should be able to communicate orally and in writing these basic mathematical concepts and utilize technology as a mathematical tool. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirements in natural sciences/mathematics</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 142A</td>
<td>Mathematical Concepts II Lab</td>
<td>0 2 0 1</td>
<td>MAT 141</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 142. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to communicate orally and in writing these basic mathematical concepts and utilize technology as a mathematical tool. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirements in natural sciences/mathematics</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
<td>3 0 0 3</td>
<td>MAT 080 or MAT 090</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is designed to develop problem-solving and reasoning skills by the study of selected areas of mathematics. Topics include elementary and Boolean algebra, sets, logic, number theory, numeration systems, probability, statistics, and linear programming. Upon completion, students should be able to apply logic and other mathematical concepts.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Mathematics Lab</td>
<td>0 2 0 1</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 145</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 145. 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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 151</td>
<td>Statistics I</td>
<td>3 0 0 3</td>
<td>MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175</td>
<td>MAT 151A</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Corequisites: MAT 151A</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 151A</td>
<td>Statistics I Lab</td>
<td>0 2 0 1</td>
<td>MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 151. 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. <em>This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 155</td>
<td>Statistical Analysis</td>
<td>3 0 0 3</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 151</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080 or MAT 090</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 155A</td>
<td>Statistical Analysis Lab</td>
<td>0 2 0 1</td>
<td>MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175</td>
<td>MAT 151</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisites: MAT 151</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 151. 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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 161</td>
<td>College Algebra</td>
<td>3 0 0 3</td>
<td>MAT 080 or MAT 090</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080 or MAT 090</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 161A</td>
<td>College Algebra Lab</td>
<td>0 2 0 1</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 161</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: MAT 080 or MAT 090</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 161. 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.</td>
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<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Units</td>
<td>Prerequisites</td>
<td>Corequisites</td>
</tr>
<tr>
<td>-------------</td>
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<td>--------------</td>
</tr>
<tr>
<td>MAT 165</td>
<td>Finite Mathematics</td>
<td>3 0 0 3</td>
<td>MAT 161</td>
<td>None</td>
</tr>
<tr>
<td>MAT 165A</td>
<td>Finite Mathematics Lab</td>
<td>0 2 0 1</td>
<td>MAT 161</td>
<td>MAT 165</td>
</tr>
<tr>
<td>MAT 167</td>
<td>Discrete Mathematics</td>
<td>3 0 0 3</td>
<td>MAT 121, MAT 161, MAT 171 or MAT 280</td>
<td>MAT 167A</td>
</tr>
<tr>
<td>MAT 167A</td>
<td>Discrete Mathematics Lab</td>
<td>0 2 0 1</td>
<td>MAT 121, MAT 161, MAT 171 or MAT 280</td>
<td>MAT 167</td>
</tr>
<tr>
<td>MAT 171</td>
<td>Precalculus Algebra</td>
<td>3 0 0 3</td>
<td>MAT 095</td>
<td>MAT 171A</td>
</tr>
<tr>
<td>MAT 171A</td>
<td>Precalculus Algebra Lab</td>
<td>0 2 0 1</td>
<td>MAT 095</td>
<td>MAT 171</td>
</tr>
<tr>
<td>MAT 172</td>
<td>Precalculus Trigonometry</td>
<td>3 0 0 3</td>
<td>MAT 171</td>
<td>None</td>
</tr>
<tr>
<td>MAT 172A</td>
<td>Precalculus Trigonometry Lab</td>
<td>0 2 0 1</td>
<td>MAT 171</td>
<td>MAT 172</td>
</tr>
<tr>
<td>MAT 175</td>
<td>Precalculus</td>
<td>4 0 0 4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MAT 175A</td>
<td>Precalculus Lab</td>
<td>0 2 0 1</td>
<td>None</td>
<td>MAT 175</td>
</tr>
<tr>
<td>MAT 223</td>
<td>Applied Calculus</td>
<td>2 2 0 3</td>
<td>MAT 122</td>
<td>None</td>
</tr>
<tr>
<td>MAT 263</td>
<td>Brief Calculus</td>
<td>3 0 0 3</td>
<td>MAT 161</td>
<td>None</td>
</tr>
</tbody>
</table>
### MAT 263A  Brief Calculus Lab  
0 2 0 1  
**Prerequisites:** MAT 161  
**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.

### MAT 271  Calculus I  
3 2 0 4  
**Prerequisites:** MAT 172 or MAT 175  
**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.

### MAT 272  Calculus II  
3 2 0 4  
**Prerequisites:** MAT 271  
**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.

### MAT 273  Calculus III  
3 2 0 4  
**Prerequisites:** MAT 272  
**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.

### MAT 280  Linear Algebra  
3 0 0 3  
**Prerequisites:** MAT 271  
**Corequisites:** None  
This course provides a study of linear algebra topics with emphasis on the development of both abstract concepts and applications. Topics include vectors, systems of equations, matrices, determinants, vector spaces, linear transformations in two or three dimensions, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts and appropriate use of linear algebra models to solve application problems.

### MAT 285  Differential Equations  
3 0 0 3  
**Prerequisites:** MAT 272  
**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.

### MEC 110  Introduction to CAD/CAM  
1 2 0 2  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

### MEC 111  Machine Processes I  
1 4 0 3  
**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.

### MEC 130  Mechanisms  
2 2 0 3  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces the purpose and action of various mechanical devices. Topics include cams, cables, gear trains, differentials, screws, belts, pulleys, shafts, levers, lubricants, and other devices. Upon completion, students should be able to analyze, maintain, and troubleshoot the components of mechanical systems.

### MEC 131  Metalworking Processes  
2 3 0 3  
**Prerequisites:** None  
**Corequisites:** None  
This course covers the properties and characteristics of manufacturing materials and the processes used to form them. Emphasis is placed on manufacturing materials, heat-treating processes, and manufacturing processes. Upon completion, students should be able to identify physical characteristics of materials and describe processes used to manufacture a part.

### MEC 141  Introduction to Manufacturing Processes  
2 2 0 3  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces the standard practices that are found in a metal workshop. Topics include the proper care/use of basic hand tools and precision measuring instruments and layout procedures/operation of lathes, drill presses, grinders, milling machines, and power saws. Upon completion, students should be able to work safely in the metal workshop and use basic metalworking equipment.

### MEC 145  Manufacturing Materials I  
2 3 0 3  
**Prerequisites:** None  
This course introduces a variety of manufacturing materials and common processing techniques. Emphasis is placed on the processing, testing, and application of materials such as wood, metals, plastics, ceramics, and composites. Upon completion, students should be able to demonstrate an understanding of fundamental engineering applications for a variety of materials, including their process capabilities and limitations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC 161</td>
<td>Manufacturing Processes I</td>
<td>3 0 0 3</td>
<td>None</td>
<td>MEC 161A</td>
</tr>
<tr>
<td></td>
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<tr>
<td>MEC 161A</td>
<td>Manufacturing Processes I Lab</td>
<td>0 3 0 1</td>
<td>None</td>
<td>MEC 161</td>
</tr>
<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MEC 231</td>
<td>Computer-Aided Manufacturing I</td>
<td>1 4 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MEC 251</td>
<td>Statics</td>
<td>2 2 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MEC 252</td>
<td>Strength of Materials</td>
<td>2 2 0 3</td>
<td>MEC 251</td>
<td>None</td>
</tr>
<tr>
<td>MEC 260</td>
<td>Fundamentals of Machine Design</td>
<td>2 3 0 3</td>
<td>MEC 251</td>
<td>None</td>
</tr>
<tr>
<td>MEC 265</td>
<td>Fluid Mechanics</td>
<td>2 2 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MEC 267</td>
<td>Thermal Systems</td>
<td>2 2 0 3</td>
<td>PHY 131 or PHY 151</td>
<td>None</td>
</tr>
<tr>
<td>MEC 276</td>
<td>Mechanical Project Design</td>
<td>0 3 0 1</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
MED 118 Medical Law and Ethics
Prerequisites: Enrollment in the Medical Assisting program
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 121 Medical Terminology I
Prerequisites: Enrollment in the Medical Assisting program
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: Department approval based on prior course completion.
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.

MED 130 Administrative Office Procedures I
Prerequisites: Enrollment in the Medical Assisting program
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: Department approval based on prior course completion.
Corequisites: None
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: MED 121
Corequisites: MED 122
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 140 Examining Room Procedures I
Prerequisites: Department approval based on prior course completion.
Corequisites: None
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: Department approval based on prior course completion.
Corequisites: None
This course provides instruction in basic lab techniques used by the medical assistant. Topics include lab safety, quality control, collecting and processing specimens, performing selective tests, phlebotomy, screening and follow-up of test results, and OSHA/CLIA regulations. Upon completion, students should be able to perform basic lab tests/skills based on course topics.

MED 232 Medical Insurance Coding
Prerequisites: None
Corequisites: None
This course is designed to develop coding skills introduced in MED 131. Emphasis is placed on advanced diagnostic and procedural coding in the outpatient facility. Upon completion, students should be able to demonstrate proficiency in coding for reimbursement.

MED 240 Exam Room Procedures II
Prerequisites: MED 140
Corequisites: None
This course is designed to expand and build upon skills presented in MED 140. Emphasis is placed on advanced exam room procedures. Upon completion, students should be able to demonstrate enhanced competence in selected exam room procedures.

MED 260 Medical Clinical Externship
Prerequisites: None
Corequisites: None
This course provides the opportunity to apply clinical, laboratory, and administrative skills in a medical facility. Emphasis is placed on enhancing competence in clinical and administrative skills necessary for comprehensive patient care and strengthening professional communications and interactions. Upon completion, students should be able to function as an entry-level health care professional.

MED 262 Clinical Perspectives
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course is designed to explore personal and occupational responsibilities of the practicing medical assistant. Emphasis is placed on problems encountered during externships and development of problem-solving skills. Upon completion, students should be able to demonstrate courteous and diplomatic behavior when solving problems in the medical facility.
MED 264 Medical Assisting

Overview

Prerequisites: Department approval based on prior course completion.
Corequisites: None

This course provides an overview of the complete medical assisting curriculum. Emphasis is placed on all facets of medical assisting pertinent to administrative, laboratory, and clinical procedures performed in the medical environment. Upon completion, students should be able to demonstrate competence in the areas covered on the national certification examination for medical assistants.

MED 270 Symptomatology

Prerequisites: None
Corequisites: None

This course covers the study of disease symptoms and the appropriate actions taken by medical assistants in a medical facility in relation to these symptoms. Emphasis is placed on interviewing skills and appropriate triage, preparing patients for procedures, and screening test results. Upon completion, students should be able to recognize how certain symptoms relate to specific diseases, recognize emergency situations, and take appropriate actions.

MED 272 Drug Therapy

Prerequisites: None
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.

MKT 120 Principles of Marketing

Prerequisites: None
Corequisites: None

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.

MKT 123 Fundamentals of Selling

Prerequisites: None
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 221 Consumer Behavior

Prerequisites: MKT 120
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

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

Prerequisites: None
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 an understanding of the techniques covered.

MLT 110 Introduction to MLT

Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None

This course introduces all aspects of the medical laboratory profession. Topics include health care/laboratory organization, professional ethics, basic laboratory techniques, safety, quality assurance, and specimen collection. Upon completion, students should be able to demonstrate a basic understanding of laboratory operations and be able to perform basic laboratory skills.

MLT 111 Urinalysis and Body Fluids

Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None

This course introduces the laboratory analysis of urine and body fluids. Topics include physical, chemical, and microscopic examination of the urine and body fluids. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting urinalysis and body fluid tests.

MLT 115 Laboratory Calculations

Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None

This course is designed to present mathematical operations used in the medical laboratory. Topics include use of basic math processes, systems of measurement, conversion factors, solutions, and dilutions. Upon completion, students should be able to solve practical problems in the context of the medical laboratory.

MLT 118 Medical Lab Chemistry

Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None

This course introduces the basic medical laboratory chemical principles. Emphasis is placed on selected topics from inorganic, organic, and biological chemistry. Upon completion, students should be able to demonstrate an understanding of the relationship between basic chemical principles and the medical laboratory function.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLT 120</td>
<td>Hematology/Hemostasis I</td>
<td>3 3 0 4</td>
<td>This course introduces the theory and technology used in analyzing blood cells and the study of hemostasis. Topics include hematology, hemostasis, and related laboratory testing. Upon completion, students should be able to demonstrate theoretical comprehension of hematology/hemostasis, perform diagnostic techniques, and correlate laboratory findings with disorders.</td>
</tr>
<tr>
<td>MLT 125</td>
<td>Immunohematology I</td>
<td>4 3 0 5</td>
<td>This course introduces the immune system and response; basic concepts of antigens, antibodies, and their reactions; and applications in transfusion medicine and serodiagnostic testing. Emphasis is placed on immunological and blood banking techniques including concepts of cellular and humoral immunity and pretransfusion testing. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting routine immunological and blood bank procedures.</td>
</tr>
<tr>
<td>MLT 130</td>
<td>Clinical Chemistry I</td>
<td>3 3 0 4</td>
<td>This course provides additional medical laboratory experience. Emphasis is placed on laboratory skills and techniques. Upon completion, students should be able to demonstrate proficiency in career entry-level areas and be prepared for the national certification examination.</td>
</tr>
<tr>
<td>MLT 140</td>
<td>Introduction to Microbiology</td>
<td>2 3 0 3</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 217</td>
<td>Professional Issues</td>
<td>0 3 0 1</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 220</td>
<td>Hematology/Hemostasis II</td>
<td>2 3 0 3</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 230</td>
<td>Clinical Chemistry II</td>
<td>2 3 0 3</td>
<td>This course is designed to supplement the biochemical and physiologic theory presented in MLT 130. Emphasis is placed on special chemistry techniques and methodologies. Upon completion, students should be able to recognize and differentiate technical and physiologic causes of unexpected test results.</td>
</tr>
<tr>
<td>MLT 240</td>
<td>Special Clinical Microbiology</td>
<td>2 3 0 3</td>
<td>This course introduces basic techniques and safety procedures 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.</td>
</tr>
<tr>
<td>MLT 254</td>
<td>MLT Practicum I</td>
<td>0 0 12 4</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 266</td>
<td>MLT Practicum II</td>
<td>0 0 18 6</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 276</td>
<td>MLT Practicum III</td>
<td>0 0 18 6</td>
<td>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.</td>
</tr>
<tr>
<td>MLT 280</td>
<td>Special Practice Lab</td>
<td>0 3 0 1</td>
<td>This course provides additional medical laboratory experience. Emphasis is placed on laboratory skills and techniques. Upon completion, students should be able to demonstrate proficiency in laboratory skills and techniques.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Prerequisites</td>
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</tr>
<tr>
<td>MNT 110</td>
<td>Introduction to Maintenance Procedures</td>
<td>3 0 2</td>
<td>None</td>
</tr>
<tr>
<td>MNT 111</td>
<td>Maintenance Practices</td>
<td>2 0 3</td>
<td>MNT 110</td>
</tr>
<tr>
<td>MNT 150</td>
<td>Basic Building Maintenance</td>
<td>1 0 2</td>
<td>None</td>
</tr>
<tr>
<td>MNT 220</td>
<td>Rigging and Moving</td>
<td>1 0 2</td>
<td>None</td>
</tr>
<tr>
<td>MNT 230</td>
<td>Pumps and Piping Systems</td>
<td>1 0 2</td>
<td>None</td>
</tr>
<tr>
<td>MNT 240</td>
<td>Industrial Equipment Troubleshooting</td>
<td>1 0 2</td>
<td>ELC 112 or ELC 131</td>
</tr>
<tr>
<td>MRI 210</td>
<td>MRI Physics and Equipment</td>
<td>3 0 3</td>
<td>None</td>
</tr>
<tr>
<td>MRI 211</td>
<td>MRI Procedures</td>
<td>4 0 4</td>
<td>None</td>
</tr>
<tr>
<td>MRI 225</td>
<td>MRI Clinical Practicum</td>
<td>0 15 5</td>
<td>None</td>
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<tr>
<td>MRI 231</td>
<td>MRI Clinical Practicum</td>
<td>0 33 11</td>
<td>None</td>
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<tr>
<td>MTH 110</td>
<td>Fundamentals of Massage</td>
<td>6 12 10</td>
<td>None</td>
</tr>
<tr>
<td>MTH 120</td>
<td>Therapeutic Massage Applications</td>
<td>6 12 10</td>
<td>MTH 110</td>
</tr>
</tbody>
</table>
MTH 125 Ethics of Massage 2 0 0 2
Prerequisites: MTH 120
Corequisites: None
This course is designed to explore issues related to the practice of massage therapy. Emphasis is placed on ethical, legal, professional, and political issues. Upon completion, students should be able to discuss issues relating to the practice of massage therapy, client/therapist relationships as well as ethical issues.

MUS 110 Music Appreciation 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: 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. This course is also available through the Virtual Learning Community (VLC).

MUS 111 Fundamentals of Music 3 0 0 3
Prerequisites: None
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 0 3
Prerequisites: ENG 090 and RED 090
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 113 American Music 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course introduces various musical styles, influences, and composers of the United States from pre-Colonial times to the present. Emphasis is placed on the broad variety of music particular to American culture. Upon completion, students should be able to demonstrate skills in basic listening and understanding of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 114 Non-Western Music 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course provides a basic survey of the music of the non-Western world. Emphasis is placed on non-traditional instruments, sources, and performing practices. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of non-Western music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 131 Chorus I 0 2 0 1
Prerequisites: None
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 0 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 141 Ensemble I 0 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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 142 Ensemble II 0 2 0 1
Prerequisites: MUS 141
Corequisites: None
This course is a continuation of MUS 141. 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 151 Class Music I 0 2 0 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. Colleges may use a letter suffix to designate a specific instrument or voice, for example MUS 151P for piano. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 161 Applied Music I 1 2 0 2
Prerequisites: None
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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
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<tbody>
<tr>
<td>MUS 210</td>
<td>History of Rock Music</td>
<td>3</td>
<td>ENG 090 and RED 090</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>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.</td>
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<tr>
<td>MUS 212</td>
<td>American Musical Theatre</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course covers the origins and development of the musical from Show Boat to the present. Emphasis is placed on the investigation of the structure of the musical and its components through listening and analysis. 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.</td>
<td></td>
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</tr>
<tr>
<td>MUS 213</td>
<td>Opera and Musical Theatre</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>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 effect dramaturgy through listening examples and analysis. Upon completion, students should be able to demonstrate analytical and listening skills in understanding both opera and the musical. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/ fine arts.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MUS 214</td>
<td>Electronic Music I</td>
<td>1</td>
<td>MUS 111</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to study and explore various electronic instruments and devices. Emphasis is placed on fundamental MIDI applications and implementation, features and application of sequences, sound modules, and digital keyboards. Upon completion, students should be able to demonstrate proficiency by creation of appropriate musical projects using the equipment and techniques covered. 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></td>
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</tr>
<tr>
<td>MUS 231</td>
<td>Chorus III</td>
<td>0</td>
<td>MUS 132</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MUS 232</td>
<td>Chorus IV</td>
<td>0</td>
<td>MUS 231</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MUS 241</td>
<td>Ensemble III</td>
<td>0</td>
<td>MUS 142</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is a continuation of MUS 142. Emphasis is placed on the development of performance skills and the study 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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
<td></td>
<td></td>
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<tr>
<td>MUS 242</td>
<td>Ensemble IV</td>
<td>0</td>
<td>MUS 241</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is a continuation of MUS 241. 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. 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>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAS 101</td>
<td>Nursing Assistant I</td>
<td>3</td>
<td>None</td>
<td>NAS 103</td>
</tr>
<tr>
<td></td>
<td>This course introduces basic nursing skills required to provide personal care for patients, residents, or clients in a health care setting. Topics include communications, safety, patients’ rights, personal care, vital signs, elimination, nutrition, emergencies, rehabilitation, and mental health. Upon completion, students should be able to demonstrate skills necessary to qualify as a Nursing Assistant I with the North Carolina Nurse Aide I Registry.</td>
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<tr>
<td>NAS 102</td>
<td>Nursing Assistant II</td>
<td>3</td>
<td>High school diploma or GED</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course provides training in selected advanced nursing assistant procedures. Emphasis is placed on sterile techniques, respiratory procedures, catheterizations, wound and trach care, irrigations, and ostomy care. Upon completion, students should be able to demonstrate skills necessary to qualify as a Nursing Assistant II with the North Carolina Board of Nursing.</td>
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<tr>
<td>NAS 103</td>
<td>Home Health Care</td>
<td>2</td>
<td>High school diploma or GED</td>
<td>None</td>
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<tr>
<td></td>
<td>This course covers basic health issues that affect clients in the home setting. Emphasis is placed on home safety, recognizing significant changes in the client's condition, family dynamics, and use of home healthcare equipment. Upon completion, students should be able to identify care for clients at home.</td>
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<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Credits</td>
<td>Prerequisites</td>
<td>Corequisites</td>
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<tr>
<td>NET 110</td>
<td>Data Communications/Networking</td>
<td>2 2 0 3</td>
<td>RED 090</td>
<td>None</td>
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<tr>
<td>NET 125</td>
<td>Networking Basics</td>
<td>1 4 0 3</td>
<td>None</td>
<td>None</td>
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<tr>
<td>NET 126</td>
<td>Routing Basics</td>
<td>1 4 0 3</td>
<td>NET 125</td>
<td>None</td>
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<tr>
<td>NET 145</td>
<td>See NOS 120.</td>
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<tr>
<td>NET 155</td>
<td>See NOS 220.</td>
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<tr>
<td>NET 165</td>
<td>See NOS 221.</td>
<td></td>
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<tr>
<td>NET 175</td>
<td>Wireless Technology</td>
<td>2 2 0 3</td>
<td>NET 110</td>
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<tr>
<td>NET 191</td>
<td>Selected Topics in Networking Technology</td>
<td>- - - 1</td>
<td>NET 125</td>
<td>None</td>
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<tr>
<td>NET 193</td>
<td>Selected Topics in Networking Technology</td>
<td>- - - 3</td>
<td>NET 125 or NET 165</td>
<td>None</td>
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<tr>
<td>NET 196</td>
<td>Seminar in Networking Technology: MCSE Upgrading</td>
<td>- - - 1</td>
<td>NET 125</td>
<td>None</td>
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<tr>
<td>NET 197</td>
<td>Seminar in Networking Technology: MCSE Security</td>
<td>- - - 2</td>
<td>NET 125</td>
<td>None</td>
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<tr>
<td>NET 198</td>
<td>Seminar in Networking Technology</td>
<td>- - - 3</td>
<td>NET 125</td>
<td>None</td>
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<tr>
<td>NET 222</td>
<td>See SEC 160.</td>
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<tr>
<td>NET 225</td>
<td>Advanced Router and Switching I</td>
<td>1 4 0 3</td>
<td>NET 126</td>
<td>None</td>
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<tr>
<td>NET 230</td>
<td>Wide Area Networking</td>
<td>2 2 0 3</td>
<td>NET 110</td>
<td>None</td>
</tr>
</tbody>
</table>
This course introduces students to intrusion detection methods in use today. Topics include the types of intrusion detection products and planning and placements of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solution for networks and host-based systems.

This course provides the skills necessary to design and implement information security controls. Topics include advanced TCP/IP concepts, network vulnerability analysis, and monitoring. Upon completion, students should be able to distinguish between normal anomalous network traffic, identify common network attack patterns, and implement security solutions.

This course covers principles of the design of LANs and WANs. Topics include network architecture, transmission systems, traffic management, bandwidth requirements, Internet working devices, redundancy, and broad-band versus base-band systems. Upon completion, students should be able to design a network to meet specified business and technical requirements.

This course covers advanced network management, security, and server issues. Topics include server types (file, database, fax, communication, FTP, e-mail, CD-ROM), encryption, authentication, remote monitoring, viruses, and disaster recovery. Upon completion, students should be able to perform advanced monitoring and management of various types of servers and networks.

This course is a continuation of NET 250. Topics include further discussion of network management, monitoring and security, as well as additional work with various types of servers. Upon completion, students should be able to detect and resolve problems relating to network security, performance, and recovery on various types of servers.

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.

This course covers issues relating to the development and planning and placements of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solution for networks and host-based systems.

This course covers building campus networks using multi-layer switching technologies over a high-speed Ethernet. Topics include improving IP routing performance with multi-layer switching, implementing fault tolerance routing, and managing high bandwidth broadcast while controlling IP multi-cast access to networks. Upon completion, students should be able to install and configure multi-layer enterprise networks and determine the required router configurations to support new services and applications.

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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.

**NET 291 Selected Topics in Networking Technology**
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**NET 292 Selected Topics in Networking Technology**
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**NET 293 Selected Topics in Networking Technology**
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**NOS 110 Operating System 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 111 Operating System – DOS**
Prerequisites: None
Corequisites: None
This course introduces operating system 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.

**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 211 Linux/UNIX Admin III**
Prerequisites: NOS 221
Corequisites: None
This course includes technical topics in preparing an enterprise Linux system for common uses. Topics include advanced study of hardware, installation, boot process, file system administration, software administration, user administration, system administration, kernel services, configuration, securing services, and troubleshooting. Upon completion, students should be able to administer an enterprise Linux system.

**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 implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, 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.
### NOS 232 Windows Admin III
- **Prerequisites:** NOS 231
- **Corequisites:** None
This course covers implementing and administering security in a Windows Server network. Topics include implementing, managing, and troubleshooting security policies, patch management infrastructure, security for network communications, authentication, authorization, and PKI. Upon completion, students should be able to implement, manage, and maintain a Windows Server network infrastructure.

### NUR 115 Fundamentals of Nursing
- **Prerequisites:** None
- **Corequisites:** None
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.

### NUR 116 Nursing of Older Adults
- **Prerequisites:** NUR 115
- **Corequisites:** None
This course provides an opportunity to utilize the provider of care and manager of care roles to meet nursing needs of older adults in a variety of settings. Emphasis is placed on the aging process as it applies to normal developmental changes and alterations in health commonly occurring in the older adult. Upon completion, students should be able to apply the nursing process in caring for the older adult.

### NUR 117 Pharmacology
- **Prerequisites:** None
- **Corequisites:** NUR 133
This course introduces information concerning sources, effects, legalities, and the safe use of medications as therapeutic agents. Emphasis is placed on nursing responsibility, accountability, pharmacokinetics, routes of medication administration, contraindications and side effects. Upon completion, students should be able to compute dosages and administer medication safely.

### NUR 125 Maternal-Child Nursing
- **Prerequisites:** NUR 115
- **Corequisites:** None
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.

### NUR 133 Nursing Assessment
- **Prerequisites:** None
- **Corequisites:** NUR 117
This course provides theory and application experience for performing nursing assessment of individuals. Emphasis is placed on interviewing and physical assessment techniques and documentation of findings appropriate for nursing. Upon completion, students should be able to complete a health history and perform a noninvasive physical assessment.

### NUR 135 Adult Nursing I
- **Prerequisites:** NUR 115
- **Corequisites:** None
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 individuals experiencing acute and chronic alterations in health.

### NUR 185 Mental Health Nursing
- **Prerequisites:** NUR 115
- **Corequisites:** None
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.

### NUR 235 Adult Nursing II
- **Prerequisites:** NUR 135
- **Corequisites:** None
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.

### OSS 120 Introduction to AIX
- **Prerequisites:** None
- **Corequisites:** None
This course introduces students to customizing and handling common AIX system administrator tasks in a multi-user environment. Topics include installation, system management tools, print queues, device drivers, file systems security, user administration, and scheduling techniques. Upon completion, students should be able to install AIX systems, manage file systems and group accounts, configure devices and implement customized access and security tasks.

### OSS 160 AIX Systems Administration I
- **Prerequisites:** OSS 120
- **Corequisites:** None
This course introduces students to customizing and handling common AIX system administrator tasks in a multi-user environment. Topics include installation, system management tools, print queues, device drivers, file systems security, user administration, and scheduling techniques. Upon completion, students should be able to install AIX systems, manage file systems and group accounts, configure devices and implement customized access and security tasks.
OST 220 AIX Systems Administration II 2 2 0 3
Prerequisites: OSS 160
Corequisites: None
This course introduces students to the administrator skills to develop and build advanced AIX. Topics include AIX boot sequence, disk management theory and procedures, diagnostics tools, error log, volume group techniques, dump facilities, online file system backups and security. Upon completion, students should be able to perform system problem determination procedures, recovery techniques, understand disk management theory and configure auditing in an AIX environment.

OST 080 Keyboarding Literacy 1 2 0 2
Prerequisites: None
Corequisites: None
This course is designed to develop elementary keyboarding skills. Emphasis is placed on mastery of the keyboard. Upon completion, students should be able to demonstrate basic proficiency in keyboarding.

OST 122 Office Computations 1 2 0 2
Prerequisites: MAT 060 or equivalent
Corequisites: None
This course introduces the keypad and the touch method using the electronic calculator. Topics include mathematical functions in business applications. Upon completion, students should be able to use the electronic calculator to solve a wide variety of problems commonly encountered in business.

OST 131 Keyboarding 1 2 0 2
Prerequisites: None
Corequisites: None
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. Business letters, centering, and one-page reports are included.

OST 132 Keyboard Skill Building 1 2 0 2
Prerequisites: OST 080 or equivalent
Corequisites: None
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.

OST 134 Text Entry and Formatting 2 2 0 3
Prerequisites: OST 080 or equivalent
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 and key-timed writings at speeds commensurate with employability.

OST 135 Advanced Text Entry and Formatting 3 2 0 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 1 2 0 2
Prerequisites: OST 080 or equivalent
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 141 Medical Terms I- Medical Office 3 0 0 3
Prerequisites: None
Corequisites: None
This course uses a language-structure approach to present the terminology and vocabulary that will be encountered in medical office settings. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in approximately one-half of the systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 142 Medical Terms II- Medical Office 3 0 0 3
Prerequisites: OST 141
Corequisites: None
This course is a continuation of OST 141 and continues the study, using a language-structure approach, of medical office terminology and vocabulary. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in the remaining systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 148 Medical Coding, Billing, and Insurance 3 0 0 3
Prerequisites: None
Corequisites: OST 141
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 149 Medical Legal Issues 3 0 0 3
Prerequisites: None
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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 155</td>
<td>Legal Terminology</td>
<td>3</td>
<td>None</td>
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<tr>
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<td>This course covers the terminology appropriate to</td>
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<td></td>
<td>the legal profession. Topics include legal</td>
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<td>research, court systems, litigation, civil and</td>
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<td>criminal law, probate, real and personal</td>
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<td>property, contracts and leases, domestic</td>
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<td>relations, equity, and corporations. Upon</td>
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<td>completion, students should be able to spell,</td>
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<td>pronounce, define, and demonstrate an</td>
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<td>understanding of the use of these legal terms.</td>
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<tr>
<td>OST 156</td>
<td>Legal Office Procedures</td>
<td>2</td>
<td>OST 134, OST 155</td>
<td>None</td>
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<tr>
<td></td>
<td>This course covers legal office functions</td>
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<td>involved in the operation of a law office.</td>
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<td>Emphasis is placed on procedures in the law</td>
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<td>office involving the court system, legal</td>
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<td>research, litigation, probate, and real estate,</td>
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<td>personal injury, criminal, and civil law. Upon</td>
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<td>completion, students should be able to</td>
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<td>demonstrate a high level of competence in</td>
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<td>performing legal office duties. This course</td>
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<td>focuses on document preparation for legal</td>
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<td>documents and pleadings in many different fields</td>
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<td>of law. This course is a unique requirement of</td>
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<td>the Legal Office Systems concentration in the</td>
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<tr>
<td></td>
<td>Office Systems Technology program.</td>
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<td>OST 164</td>
<td>Text Editing Applications</td>
<td>3</td>
<td>None</td>
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<td>This course provides a comprehensive study of</td>
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<td>editing skills needed in the workplace.</td>
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<td></td>
<td>Emphasis is placed on grammar, punctuation,</td>
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<tr>
<td></td>
<td>sentence structure, proofreading, and editing.</td>
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<td>Upon completion, students should be able to</td>
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<td></td>
<td>use reference materials to compose and edit text.</td>
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<td>OST 181</td>
<td>Introduction to Office Systems</td>
<td>2</td>
<td>None</td>
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<td></td>
<td>This course introduces the skills and abilities</td>
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<td></td>
<td>needed in today's office. Topics include</td>
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<td>effectively interacting with co-workers and the</td>
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<td>public, processing simple financial and</td>
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<td>informational documents, and performing</td>
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<td>functions typical of today's offices. Upon</td>
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<td>completion, students should be able to</td>
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<td>display skills and decision-making abilities</td>
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<td>essential for functioning in the total office</td>
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<td>context.</td>
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<td>OST 184</td>
<td>Records Management</td>
<td>1</td>
<td>None</td>
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<td></td>
<td>This course includes the creation, maintenance</td>
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<td>protection, security, and disposition of</td>
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<td></td>
<td>records stored in a variety of media forms.</td>
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<td>Topics include alphabetic, geographic, subject,</td>
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<td></td>
<td>and numeric filing methods. Upon completion,</td>
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<td></td>
<td>students should be able to set up and maintain</td>
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<tr>
<td></td>
<td>a records management system.</td>
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<td>OST 198</td>
<td>Seminar in Office Systems Technology: Office</td>
<td>1</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Systems Management</td>
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<td>This course provides an opportunity to explore</td>
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<td>topics of current interest. Emphasis is placed</td>
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<td>on the development of critical listening skills</td>
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<td>and the presentation of seminar issues. Upon</td>
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<td></td>
<td>completion, students should be able to</td>
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<td>critically analyze issues and establish</td>
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<td>informed opinions. Specifically, this course</td>
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<td>will use one or more patient management systems</td>
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<td>to enter, edit, and delete physician schedules</td>
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<td>and patient demographic, insurance, and</td>
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<td>billing information; as well as create and</td>
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<td>analyze various reports to aid in the</td>
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<td>management of a healthcare practice.</td>
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<td>OST 233</td>
<td>Office Publications Design</td>
<td>2</td>
<td>None</td>
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<td>This course provides entry-level skills in</td>
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<td></td>
<td>using software with desktop publishing</td>
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<td>capabilities. Topics include principles of page</td>
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<td>layout, desktop publishing terminology and</td>
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<td>applications, and legal and ethical considerations</td>
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<td>of software use. Upon completion, students</td>
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<td>should be able to design and produce</td>
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<td>professional business documents and publications.</td>
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<td>OST 236</td>
<td>Advanced Word/Information Processing</td>
<td>2</td>
<td>None</td>
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<td>This course develops proficiency in the</td>
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<td></td>
<td>utilization of advanced word/information</td>
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<td></td>
<td>processing functions. Topics include tables,</td>
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<td>graphics, macros, sorting, document assembly,</td>
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<td>merging, and newspaper and brochure columns.</td>
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<td>Upon completion, students should be able to</td>
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<td></td>
<td>produce a variety of complex business</td>
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<td>documents.</td>
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<td>OST 241</td>
<td>Medical Office Transcription I</td>
<td>1</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>This course introduces machine transcription</td>
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<td>techniques as applied to medical documents.</td>
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<td>Emphasis is placed on accurate transcription,</td>
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<td>proofreading, and use of reference materials</td>
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<td></td>
<td>as well as vocabulary building. Upon</td>
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<td>completion, students should be able to</td>
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<td>prepare accurate and usable transcripts of</td>
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<td>voice recordings in the covered specialties.</td>
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<td>This course is a unique requirement of the</td>
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<td>Medical Office Administration program</td>
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<td>OST 243</td>
<td>Medical Office Simulation</td>
<td>2</td>
<td>None</td>
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<td></td>
<td>This course introduces medical systems used to</td>
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<td>process information in the automated office.</td>
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<td></td>
<td>Topics include traditional and electronic</td>
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<td>information resources, storing and retrieving</td>
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<td>information, and the billing cycle. Upon</td>
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<td>completion, students should be able to use the</td>
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<td>computer accurately to schedule, bill, update,</td>
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<td>and make corrections. This course is a unique</td>
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<td></td>
<td>concentration requirement in the Medical Office</td>
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<td>Administration program.</td>
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</table>
OST 252 Legal Transcription I 2 2 0 3
Prerequisites: OST 134 or OST 136; CIS 164 and OST 155
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. This course is a unique concentration requirement in the Legal Office Systems Technology concentration in the Office Systems Technology program.

OST 284 Emerging Technologies 1 2 0 2
Prerequisites: CIS 111, OST 137
Corequisites: None
This course provides opportunities to explore emerging technologies. Emphasis is placed on identifying, researching, and presenting current technological topics for class consideration and discussion. Upon completion, students should be able to understand the importance of keeping abreast of technological changes that affect the office professional.

OST 286 Professional Development 3 0 0 3
Prerequisites: OST 136, OST 164
Corequisites: None
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, health 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 0 3
Prerequisites: OST 134 or OST 136; CIS 120, CIS 169, 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.

OST 298 Seminar in Office Systems Technology Financial Software 2 2 0 3
Prerequisites: CIS 111
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. Specifically, this course will introduce basic accounting software as used by administrative assistants, including entering data in accounts payable and receivable, petty cash, inventory, bank statement reconciliation, and payroll; and generating simple reports.

PBT 100 Phlebotomy Technology 5 2 0 6
Prerequisites: Enrollment in the Phlebotomy Technology program
Corequisites: PBT 101
This course provides instruction in the skills needed for the proper collection of blood and other specimens used for diagnostic testing. Emphasis is placed on ethics, legalities, medical terminology, safety and universal precautions, health care delivery systems, patient relations, anatomy and physiology, and specimen collection. Upon completion, students should be able to demonstrate competence in the theoretical comprehension of phlebotomy techniques.

PBT 101 Phlebotomy Practicum 0 0 9 3
Prerequisites: Enrollment in the Phlebotomy Technology program
Corequisites: PBT 100
This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings.

PCI 161 Introduction to Instrumentation 0 2 0 1
Prerequisites: None
Corequisites: None
This course introduces various industrial and manufacturing process control environments by taking field trips to related industrial facilities. Topics include job descriptions, titles, and opportunities associated with the field of industrial process control instrumentation. Upon completion, students should be able to demonstrate an understanding of the job opportunities available in the field of process control instrumentation.

PCI 261 Process Measurement 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the concepts associated with the measurement of different process variables. Topics include theory and applications involved with the process variables of flow, level, pressure, and temperature. Upon completion, students should be able to understand basic process measurements and demonstrate the ability to calibrate process control instrumentation.

PCI 262 Introduction to Process Control 3 3 0 4
Prerequisites: ELC 131
Corequisites: None
This course introduces process control and related instrumentation devices. Topics include basic process control theory, PID diagrams, and calibration methods associated with transducers, transmitters, control valves, and related process devices. Upon completion, students should be able to understand and troubleshoot basic process control devices and systems.
### PED 110 Fitness and Wellness for Life

**Prerequisites:** None  
**Corequisites:** None  
This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. Classes will be individually structured to accommodate and enhance various levels of fitness.

### PED 121 Walk, Jog, Run

**Prerequisites:** None  
**Corequisites:** None  
This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities.

### PED 128 Golf-Beginning

**Prerequisites:** None  
**Corequisites:** None  
This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. Individualized corrections of fundamental skills are stressed along with their use during course play.

### PED 130 Tennis-Beginning

**Prerequisites:** None  
**Corequisites:** None  
This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. Individualized instruction along with group drills promote stroke development and basic strategy for in-class play.

### PED 138 Archery

**Prerequisites:** None  
**Corequisites:** None  
This course introduces basic archery safety and skills. Topics include proper techniques of stance, bracing, drawing, and releasing, as well as terminology and scoring. Upon completion, students should be able to participate safely in target archery. Individualized instruction on fundamental skills enhances performance during class shooting and competition.

### PED 139 Bowling-Beginning

**Prerequisites:** None  
**Corequisites:** None  
This course covers the fundamentals of bowling. Emphasis is placed on ball selection, grips, stance, and delivery along with rules and etiquette. Upon completion, students should be able to participate in recreational bowling. Classes stress individualized correction of the approach and delivery along with the introduction of spot bowling and league bowling.

### PED 143 Volleyball-Beginning

**Prerequisites:** None  
**Corequisites:** None  
This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. Individualized instruction enhances fundamental skills along with their use in drills and class play.

### PED 175 Horseback Riding I

**Prerequisites:** None  
**Corequisites:** None  
This course introduces beginning and non-riders to recreational horseback riding. Topics include riding skills, equipment, handling of horses, mounting, care of the horse, and coordinated horse-rider balance. Upon completion, students should be able to demonstrate riding, safety, and horse management skills.

### PED 176 Horseback Riding II

**Prerequisites:** PED 175  
**Corequisites:** None  
This course is designed to give advanced riding experiences in a variety of specialized situations. Emphasis is placed on the development of skills such as jumping, rodeo games, and trail riding. Upon completion, students should be able to demonstrate control and management of the horse and perform various riding techniques.

### PED 177 Ice Skating

**Prerequisites:** None  
**Corequisites:** None  
This course introduces the fundamentals of ice skating. Emphasis is placed on basic positioning, balance, and form on ice. Upon completion, students should be able to demonstrate skills necessary for recreational ice skating.

### PHI 210 History of Philosophy

**Prerequisites:** ENG 111  
**Corequisites:** None  
This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. Students will be required to complete a research project which will be presented orally to the class.

### PHI 215 Philosophical Issues

**Prerequisites:** ENG 111  
**Corequisites:** None  
This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critique the philosophical components of an issue.
PHI 220 Western Philosophy I  3 0 0 3  
Prerequisites: ENG 111  
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-Socratics, 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. Students will be required to complete a research project which will be presented orally to the class.

PHI 221 Western Philosophy II  3 0 0 3  
Prerequisites: ENG 111  
Corequisites: None  
This course covers Western intellectual and philosophic thought from post-medievalists through recent thinkers. Emphasis is placed on such figures as Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, Kant, Hegel, Marx, Mill, and representatives of pragmatism, logical positivism, and existentialism. Upon completion, students should be able to trace the development of leading ideas concerning knowledge, reality, science, society, and the limits of reason. Students will be required to complete a research project that will be presented orally to the class.

PHI 230 Introduction to Logic  3 0 0 3  
Prerequisites: ENG 111  
Corequisites: None  
This course introduces basic concepts and techniques for distinguishing between good and bad reasoning. Emphasis is placed on deduction, induction, validity, soundness, syllogisms, truth functions, predicate logic, analogical inference, common fallacies, and scientific methods. Upon completion, students should be able to analyze arguments, distinguish between deductive and inductive arguments, test validity, and appraise inductive reasoning. Students will be required to complete weekly assigned exercises, do daily board work, and give oral explanations to class members.

PHI 240 Introduction to Ethics  3 0 0 3  
Prerequisites: ENG 111  
Corequisites: None  
This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on utilitarianism, rule-based ethics, existentialism, relativism versus objectivism, and egoism. Upon completion, students should be able to apply various ethical theories to individual moral issues such as euthanasia, abortion, crime and punishment, and justice. Students will be required to complete a reflective thinking journal, individual research papers, and a final issues paper to be orally shared in class.

PHY 121 Applied Physics I  3 2 0 4  
Prerequisites: None  
Corequisites: None  
This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Topics include systems of units, problem-solving methods, graphical analyses, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

PHY 131 Physics-Mechanics  3 2 0 4  
Prerequisites: MAT 121  
Corequisites: None  
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.

PHY 133 Physics-Sound and Light  3 2 0 4  
Prerequisites: PHY 131  
Corequisites: None  
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, wave motion, sound, light, and modern physics. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

PHY 151 College Physics I  3 2 0 4  
Prerequisites: MAT 121, MAT 161 or MAT 171  
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 0 4  
Prerequisites: PHY 151  
Corequisites: None  
This course uses algebra- and trigonometry-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 153 Modern Topics in Physics  3 2 0 4  
Prerequisites: PHY 151  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include atomic structure, nuclear processes, natural and artificial radioactivity, basic 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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<tbody>
<tr>
<td>PHY 251</td>
<td>General Physics I</td>
<td>3</td>
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<tr>
<td>Prerequisites:</td>
<td>MAT 271</td>
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<td>Corequisites:</td>
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<td>Corequisites:</td>
<td>MAT 272</td>
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<td>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.</td>
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| PHY 252     | General Physics II                       | 3       | 3     | 0             | 4            |
| Prerequisites: | MAT 272, PHY 251                        |         |       |               | Corequisites: |
| 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. |

| PLA 110     | Introduction to Plastics                | 2       | 0     | 0             | 2            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course introduces the plastics processing industry, including thermoplastics and thermosets. Emphasis is placed on the description, classification, and properties of common plastics and processes and current trends in the industry. Upon completion, students should be able to describe the differences between thermoplastics and thermosets and recognize the basics of the different plastic processes. |

| PLA 115     | Polymer Processing                      | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course introduces theory and hands-on experience in common polymer processing techniques. Topics include injection molding, extrusion, thermoforming, blow molding, casting, roll forming, thermofusion, and other processes. Upon completion, students should be able to understand the setup, operation, and troubleshooting of common plastic processing equipment. |

| PLA 120     | Injection Molding                       | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course provides theory and processing experience with the injection molding process. Topics include machine type, molds, controls, machine-polymer part relationship, molding factors, troubleshooting, and molding problems/solutions. Upon completion, students should be able to demonstrate an understanding of machine setup and operation and be able to optimize common injection molding machines. |

| PLA 210     | Mold Maintenance/Design                 | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course provides an in-depth study of the design, maintenance, and repair of molds used in the plastics industry. Topics include mold/die components, materials, types, functions, heating/cooling, designs, cleaning, and repair. Upon completion, students should be able to describe and utilize various types and functions of molds and gates and understand typical plastic design rules. |

| PLA 215     | Polymeric Materials                     | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course provides an overview of polymeric materials, from commodity grade to advanced/specialty resins. Topics include chemistry, properties, material characterization, testing, and toxicity. Upon completion, students should be able to demonstrate an understanding of the hierarchy of plastics and how it affects material selection, testing, and safety. |

| PLA 220     | Moldflow                                | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course introduces flow analysis software. Topics include mold flow design principles, concepts, material databases, model construction, and interpretation of results. Upon completion, students should be able to model a part/runner system, optimize gate location, analyze and interpret fill, and recommend design changes. |

| PLA 225     | Extrusion                               | 2       | 3     | 0             | 3            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course provides theory and processing experience with the extrusion molding process. Topics include safe start-up, operation, and shutdown of machines, machine components, blown film, sheet, coating, pipe/profiles, wire coating, and fibers. Upon completion, students should be able to setup, operate, and troubleshoot the extrusion process and its variations. |

| PLA 230     | Advanced Plastics Manufacturing         | 3       | 3     | 0             | 4            |
| Prerequisites: | PLA 120                                 |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course covers advanced plastics manufacturing processes. Topics include hands-on experience, material selection, manufacturing cost, process optimization, troubleshooting, and project management. Upon completion, students should be able to understand, perform, and troubleshoot advanced processes in a manufacturing environment. |

| PLU 110     | Modern Plumbing                         | 4       | 15    | 0             | 9            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| Corequisites: | None                                   |         |       |               |              |
| This course introduces the tools, equipment, and materials associated with the plumbing industry. Topics include safety, use and care of tools, recognition and assembly of fittings and pipes, and other related topics. Upon completion, students should be able to safely assemble various pipes and fittings in accordance with state code requirements. |

| PLU 111     | Introduction to Basic Plumbing           | 1       | 3     | 0             | 2            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| 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. |

| PLU 120     | Plumbing Applications                   | 4       | 15    | 0             | 9            |
| Prerequisites: | None                                   |         |       |               | Corequisites: |
| 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. |
PLU 130 Plumbing Systems  3 9 0 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.

PLU 140 Introduction to Plumbing Codes  1 2 0 2  
Prerequisites: None  
Corequisites: PLU 192  
This course covers plumbing industry codes and regulations. Emphasis is placed on North Carolina regulations and the minimum requirements for plumbing materials and design. Upon completion, students should be able to research and interpret North Carolina plumbing codes.

PLU 150 Plumbing Diagrams  1 2 0 2  
Prerequisites: None  
Corequisites: None  
This course introduces sketching diagrams and interpretation of blueprints applicable to the plumbing trades. Emphasis is placed on plumbing plans for domestic and/or commercial buildings. Upon completion, students should be able to sketch plumbing diagrams applicable to the plumbing trades.

PLU 192 Selected Topics in Plumbing  - - - 2  
Prerequisites: Varies, based on topic  
Corequisites: PLU 140  
This course provides an opportunity to explore areas of current interest in Plumbing. Emphasis is placed on subject matter appropriate to plumbing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

PLU 211 Commercial/Industrial Plumbing  2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course covers the installation of various commercial and industrial piping. Topics include piping in steam, gas, air, fire sprinklers, and other related topics. Upon completion, students should be able to select and install various piping systems for a variety of applications.

PME 113 Construction Equipment Repair  1 2 0 2  
Prerequisites: None  
Corequisites: None  
This course introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment. This course is a unique concentration requirement of the Construction Systems concentration in the Medium/Heavy Duty Vehicles Systems Technology program.

PME 113a Construction Equipment Repair  1 1 0 1  
Prerequisites: None  
Corequisites: None  
This is part 1 of a course that introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment. This course is a unique concentration requirement of the Construction Systems concentration in the Medium/Heavy Duty Vehicles Systems Technology program.

PME 113b Construction Equipment Repair  0 2 0 1  
Prerequisites: PME 113a  
Corequisites: None  
This is part 2 of a course that introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment. This course is a unique concentration requirement of the Construction Systems concentration in the Medium/Heavy Duty Vehicles Systems Technology program.

PME 117 Equipment Braking Systems  2 3 0 3  
Prerequisites: None  
Corequisites: None  
This course covers fundamental theory, adjustments, and repair of hydraulic and pneumatic braking systems used primarily in mobile construction equipment. Emphasis is placed on braking systems used in construction equipment including pneumatic, hydraulic, dynamic, and inboard brakes. Upon completion, students should be able to use proper diagnostic procedures to identify, repair, or replace components.

PME 118 Undercarriage Components  1 2 0 2  
Prerequisites: None  
Corequisites: None  
This course covers the fundamentals, function, repair, adjustments, and safety requirements of undercarriage components on track-equipped machines. Topics include identification, measurement, wear points, adjustments, and operation of components on track-equipped machines. Upon completion, students should be able to adjust, troubleshoot, and repair most construction equipment systems.

PME 211 Advanced Equipment Repair  2 6 0 4  
Prerequisites: None  
Corequisites: None  
This course provides advanced training in equipment repair through hands-on training along with additional training aids. Emphasis is placed on systems and components found on construction equipment. Upon completion, students should be able to adjust, troubleshoot, and repair most construction equipment systems.

PME 221 Construction Equipment Servicing  1 2 0 2  
Prerequisites: None  
Corequisites: None  
This course covers the servicing requirements for construction equipment. Topics include pre-delivery, after-sales check, routine servicing, and thousand-hour service. Upon completion, students should be able to locate service points, make minor service adjustments, and perform other routine servicing.

POL 110 Introduction to Political Science  3 0 0 3  
Prerequisites: ENG 090, RED 090, or placement  
Corequisites: None  
This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and non-democratic systems. Upon completion, students should be able to discuss a variety of issues inherent in all political systems and draw logical conclusions in evaluating these systems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
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<tbody>
<tr>
<td>POL 120</td>
<td>American Government</td>
<td>3</td>
<td>ENG 090, RED 090, or placement</td>
<td>None</td>
<td>This course is a study of the origins, development, structure, and functions of American national government. Topics include the constitutional framework, federalism, the three branches of government including the bureaucracy, civil rights and liberties, political participation and behavior, and policy formation. Upon completion, students should be able to demonstrate an understanding of the basic concepts and participatory processes of the American political system. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
<td>ENG 090, RED 090, or placement</td>
<td>None</td>
<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
</tr>
<tr>
<td>POL 130</td>
<td>State and Local Government</td>
<td>3</td>
<td>ENG 090, RED 090, or placement</td>
<td>None</td>
<td>This course includes state and local political institutions and practices in the context of American federalism. Emphasis is placed on procedural and policy differences as well as political issues in state, regional, and local governments of North Carolina. Upon completion, students should be able to identify and discuss various problems associated with intergovernmental politics and their effect on the community and the individual. 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>POL 210</td>
<td>Comparative Government</td>
<td>3</td>
<td>ENG 090, RED 090, or placement</td>
<td>None</td>
<td>This course provides a cross-national perspective on the government and politics of contemporary nations such as Great Britain, France, Germany, and Russia. Topics include each country's historical uniqueness, key institutions, attitudes and ideologies, patterns of interaction, and current political problems. Upon completion, students should be able to identify and compare various nations' governmental structures, processes, ideologies, and capacity to resolve major problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.</td>
</tr>
<tr>
<td>PSY 237</td>
<td>Social Psychology</td>
<td>3</td>
<td>PSY 150 or SOC 210</td>
<td>None</td>
<td>This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior. 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>PSY 239</td>
<td>Psychology of Personality</td>
<td>3</td>
<td>PSY 150</td>
<td>None</td>
<td>This course covers major personality theories and personality research methods. Topics include psychoanalytic, behavioristic, social learning, cognitive, humanistic, and trait theories including supporting research. Upon completion, students should be able to compare and contrast traditional and contemporary approaches to the understanding of individual differences in human behavior. 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>PSY 241</td>
<td>Developmental Psychology</td>
<td>3</td>
<td>PSY 150</td>
<td>None</td>
<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>PSY 246</td>
<td>Adolescent Psychology</td>
<td>3</td>
<td>PSY 150</td>
<td>None</td>
<td>This course provides an overview of the behavior patterns, life changes, and social issues that accompany the developmental stage of adolescence. Topics include developmental theories; physical, cognitive and psychosocial growth; transitions to young adulthood; and sociocultural factors that influence adolescent roles in home, school and community. Upon completion, students should be able to identify typical and atypical adolescent behavior patterns as well as appropriate strategies for interacting with adolescents. 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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Wake Technical Community College
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<th>Course Code</th>
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<tr>
<td>PSY 259</td>
<td>Human Sexuality</td>
<td>3 0 0 3</td>
<td>PSY 150</td>
<td>None</td>
<td>This course provides the biological, psychological, and sociocultural aspects of human sexuality and related research. Topics include reproductive biology, sexual and psychossexual development, sexual orientation, contraception, sexually transmitted diseases, sexual disorders, theories of sexuality, and related issues. Upon completion, students should be able to demonstrate an overall knowledge and understanding of human sexuality. 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>
<td>PSY 263</td>
<td>Educational Psychology</td>
<td>3 0 0 3</td>
<td>PSY 150</td>
<td>None</td>
<td>This course examines the application of psychological theories and principles to the educational process and setting. Topics include learning and cognitive theories, achievement motivation, teaching and learning styles, teacher and learner roles, assessment, and developmental issues. Upon completion, students should be able to demonstrate an understanding of the application of psychological theory to educational practice. 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>
<td>PSY 281</td>
<td>Abnormal Psychology</td>
<td>3 0 0 3</td>
<td>PSY 150</td>
<td>None</td>
<td>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. This course is also available through the Virtual Learning Community (VLC).</td>
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<tr>
<td>PTC 110</td>
<td>Industrial Environment</td>
<td>3 0 0 3</td>
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<td>None</td>
<td>This course introduces the pharmaceutical industry, including a broad overview of work in this field. Emphasis is placed on good manufacturing practices (GMP), work conduct, company organization, job expectations, personal safety, hygiene, and company rules and regulations. Upon completion, students should be able to follow good manufacturing practice regulations and inspect a pharmaceutical manufacturing facility for compliance with GMP.</td>
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<tr>
<td>PTC 120</td>
<td>Pharmaceutical Quality Control</td>
<td>3 2 0 4</td>
<td>MAT 121, PTC 110</td>
<td>None</td>
<td>This course covers the principles and techniques of quality control as found in the pharmaceutical industry. Emphasis is placed on lot inspection, sampling procedures, control charts, vendor auditing, statistical analysis, and Military Standard 105. Upon completion, students should be able to apply and follow the appropriate statistical sampling plans for Pharmaceutical Product Lot Acceptance.</td>
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<tr>
<td>PTC 193</td>
<td>Selected Topics in Industrial Pharmaceutical Technology</td>
<td>- - - 3</td>
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<td>None</td>
<td>This course provides an opportunity to explore areas of current interest in Industrial Pharmaceutical Technology. Emphasis is placed on subject matter appropriate to industrial pharmaceutical. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
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<tr>
<td>PTC 210</td>
<td>Pharmaceutical Industrial Processes</td>
<td>3 2 0 4</td>
<td>PTC 120</td>
<td>None</td>
<td>This course examines the manufacturing processes for selected pharmaceutical dosage forms. Emphasis is placed on manufacturing and testing of tablets, capsules, sustained release drugs, solutions, emulsions, suspensions, creams, ointments, aerosols, and sterile products. Upon completion, students should be able to demonstrate the processing steps and test procedures for these dosage forms.</td>
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<tr>
<td>PTC 212</td>
<td>Applied Microbiology</td>
<td>3 2 0 4</td>
<td>BIO 110 or BIO 111, CHM 132</td>
<td>None</td>
<td>This course covers microbiology as it applies to the pharmaceutical industry. Emphasis is placed on types of microorganisms and identification, culture, sterilization, and contamination control. Upon completion, students should be able to explain how microbiology and microbiological control are important to the pharmaceutical industry.</td>
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<tr>
<td>PTC 214</td>
<td>Parenteral Processes</td>
<td>3 2 0 4</td>
<td>PTC 210</td>
<td>None</td>
<td>This course covers quality assurance for injectable products. Emphasis is placed on environmental monitoring and sterility, pyrogen, particulate, and package integrity testing. Upon completion, students should be able to demonstrate competence in these test procedures.</td>
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<tr>
<td>PTC 222</td>
<td>Pharmaceutical Process Control</td>
<td>2 2 0 3</td>
<td>PTC 210</td>
<td>None</td>
<td>This course provides a systematic study of the control of all processes within the pharmaceutical industry. Topics include production economics, plant layout, computer-integrated manufacturing, planning and controls, materials management, routing and scheduling, progress reports, and relationship with quality control. Upon completion, students should be able to demonstrate an understanding of process flow controls, economic considerations, and materials management in modern pharmaceutical manufacturing.</td>
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<tr>
<td>PTC 226</td>
<td>Validation</td>
<td>3 0 0 3</td>
<td>PTC 210, PTC 214</td>
<td>None</td>
<td>This course covers the methods used in pharmaceutical process and product validation. Emphasis is placed on manufacturing processes, specific dosage forms, FDA rationale, and documentation requirements. Upon completion, students should be able to write a validation protocol and perform validation studies for a variety of pharmaceutical applications.</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>RAD 110</td>
<td>Radiographic Introduction and Patient Care</td>
<td>2</td>
<td>Enrollment in Radiography program</td>
<td>RAD 111, RAD 151</td>
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<td>RAD 111</td>
<td>Radiographic Procedures I</td>
<td>3</td>
<td>RAD 110, RAD 151</td>
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<td>RAD 112</td>
<td>Radiographic Procedures II</td>
<td>3</td>
<td>RAD 110, RAD 111, RAD 151</td>
<td>RAD 121, RAD 161</td>
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<td>RAD 121</td>
<td>Radiographic Imaging I</td>
<td>2</td>
<td>RAD 110, RAD 111, RAD 112, RAD 151, RAD 161</td>
<td>None</td>
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<tr>
<td>RAD 122</td>
<td>Radiographic Imaging II</td>
<td>1</td>
<td>RAD 112, RAD 121, RAD 161</td>
<td>RAD 131, RAD 171</td>
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</table>

This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on basic principles of patient care, radiation protection, technical factors, and medical terminology. Upon completion, students should be able to demonstrate basic skills in these areas.

This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the skull, bony thorax, and gastrointestinal, biliary, and urinary systems. Upon completion, students should be able to demonstrate competence in these areas.

This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

This course covers factors of image quality and methods of exposure control. Topics include density, contrast, recorded detail, distortion, technique charts, manual and automatic exposure control, and tube rating charts. Upon completion, students should be able to demonstrate an understanding of exposure control and the effects of exposure factors on image quality.

This course covers image receptor systems and processing principles. Topics include film, film storage, processing, intensifying screens, grids, and beam limitation. Upon completion, students should be able to demonstrate the principles of selection and usage of imaging accessories to produce quality images.

This course covers an overview of the radiography profession and student responsibilities. Emphasis is placed on the operation of radiographic equipment.

This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on mastering positioning of the chest and extremities, manipulating equipment, and applying principles of ALARA. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on mastering positioning of the spine, pelvis, head and neck, and thorax and adapting procedures to meet patient variations. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

This course provides experience in patient management specific to fluoroscopic and advanced radiographic procedures. Emphasis is placed on applying appropriate technical factors to all studies and mastering positioning of gastrointestinal and urological studies. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on mastering positioning of the spine, pelvis, head and neck, and thorax and adapting procedures to meet patient variations. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

This course covers factors of image quality and methods of exposure control. Topics include density, contrast, recorded detail, distortion, technique charts, manual and automatic exposure control, and tube rating charts. Upon completion, students should be able to demonstrate an understanding of exposure control and the effects of exposure factors on image quality.

This course covers image receptor systems and processing principles. Topics include film, film storage, processing, intensifying screens, grids, and beam limitation. Upon completion, students should be able to demonstrate the principles of selection and usage of imaging accessories to produce quality images.
RAD 241 Radiobiology/Protection 2 0 0 2
Prerequisites: RAD 122, RAD 131, RAD 171
Corequisites: RAD 211, RAD 231, RAD 251
This course covers the principles of radiation protection and radiobiology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Upon completion, students should be able to demonstrate an understanding of the effects and uses of radiation in diagnostic radiology.

RAD 245 Rad Quality Management 1 3 0 2
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 261, RAD 290
This course provides an overview of imaging concepts and introduces methods of quality assurance. Topics include a systematic approach for image evaluation and analysis of imaging service and quality assurance. Upon completion, students should be able to establish and administer a quality assurance program and conduct a critical review of images.

RAD 251 Radiographic Clinical Education IV 0 0 21 7
Prerequisites: RAD 122, RAD 131, RAD 171
Corequisites: RAD 211, RAD 231, RAD 241
This course provides the opportunity to continue mastering all basic radiographic procedures and to attain experience in advanced areas. Emphasis is placed on equipment operation, pathological recognition, pediatric and geriatric variations, and a further awareness of radiation protection requirements. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 261 Radiographic Clinical Education V 0 0 21 7
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 245, RAD 290
This course is designed to enhance expertise in all radiographic procedures, patient management, radiation protection, and image production and evaluation. Emphasis is placed on developing an autonomous approach to the diversity of clinical situations and successfully adapting to those procedures. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 271 Radiography Capstone 0 3 0 1
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 245, RAD 261
This course provides an opportunity to exhibit problem-solving skills required for certification. Emphasis is placed on critical thinking and integration of didactic and clinical components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level radiographer.

RAD 290 See RAD 271.

REA 101 Introduction Real Estate Appraisal R-1 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces the entire valuation process, with specific coverage of residential neighborhood and property analysis. Topics include basic real property law, concepts of value and operation of real estate markets, mathematical and statistical concepts, finance, and residential construction/design. Upon completion, students should be able to demonstrate adequate preparation for REA 102. This course is required for the Real Estate Appraisal certificate.

REA 102 Valuation Principles and Practices R-2 2 0 0 2
Prerequisites: REA 101
Corequisites: None
This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include the sales comparison approach, site valuation, sales comparison, the cost approach, the income approach, and reconciliation. Upon completion, students should be able to complete the Uniform Residential Appraisal Report (URAR).

REA 103 Applied Residential Property Valuation R-3 1 0 0 1
Prerequisites: REA 102
Corequisites: None
This course covers the laws and standards practiced by appraisers in the appraisal of residential 1-4 unit properties and small farms. Topics include Financial Institutions Reform and Recovery Enforcement Act (FIRREA) and North Carolina statutes and rules. Upon completion, students should be able to demonstrate eligibility to sit for the NC Appraisal Board license trainee examination.

REA 104 USPAP R-4 1 0 0 1
Prerequisites: REA 103
Corequisites: None
This course introduces all aspects of the appraisers conduct, ethics and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the North Carolina Appraisal Board. Upon completion, students should be able to sit for the National USPAP examination.

REA 201 Introduction Income Property Appraisal G-1 2 0 0 2
Prerequisites: REA 103
Corequisites: None
This course introduces concepts and techniques used to appraise real estate income properties. Topics include real estate market analysis, property analysis and site valuation, how to use financial calculators, present value, NOI, and before-tax cash flow. Upon completion, students should be able to estimate income property values using direct capitalization and to sit for the NC Certified Residential Appraiser examination.

REA 202 Advanced Income Capital Procedures G-2 2 0 0 2
Prerequisites: REA 201
Corequisites: A financial calculator is required for this course
This course expands direct capitalization techniques and introduces yield capitalization. Topics include yield rates, discounted cash flow, financial leverage, and traditional yield capitalization formulas. Upon completion, students should be able to estimate the value of income producing property using yield capitalization techniques.

REA 203 Applied Income Property Valuation G-3 2 0 0 2
Prerequisites: REA 202
Corequisites: None
This course covers the laws, rules, and standards pertaining to the principles and practices applicable to the appraisal of income properties. Topics include FIRREA, USPAP Uniform Commercial and Industrial Appraisal Report (UCIAR) form, North Carolina statutes and rules, and case studies. Upon completion, students should be able to prepare a narrative report that conforms to the USPAP and sit for the NC Certified General Appraisal examination.
RED 001 Study Skills Lab
Prerequisites: None
Corequisites: None
Designed to support courses across the curriculum by offering study skills and providing assistance with reading skills such as literal and inferential comprehension, vocabulary skills, recalling details, finding main ideas, and retention of materials.

RED 070 Essential Reading Skills
Prerequisites: None
Corequisites: None
This course is designed for those with limited reading skills. Emphasis is placed on basic word attack skills, vocabulary, transitional words, paragraph organization, basic comprehension skills, and learning strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context.

RED 080 Introduction to College Reading
Prerequisites: RED 070 or ENG 075 or placement
Corequisites: None
This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context.

RED 090 Improved College Reading
Prerequisites: RED 080 or ENG 085 or placement
Corequisites: None
This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author’s purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material.

REL 110 World Religions
Prerequisites: ENG 090, RED 090, or placement
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.

REL 111 Eastern Religions
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the major Asian religious traditions. Topics include Hinduism, Buddhism, Taoism, Confucianism, and Shinto. 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.

REL 112 Western Religions
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the major western religious traditions. Topics include Zoroastrianism, 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.

REL 211 Introduction to Old Testament
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 212 Introduction to New Testament
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

RLS 112 Real Estate Fundamentals
Prerequisites: None
Corequisites: None
This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales.

RLS 117 Real Estate Broker
Prerequisites: RLS 112
Corequisites: None
This course consists of advanced-level instruction on a variety of topics related to Real Estate law and brokerage practices. Topics include: real estate brokerage, finance and sales, RESPA, fair housing issues, selected NC Real Estate License Law and NC Real Estate Commission Rule issues. Upon completion, students should be able to demonstrate knowledge of real estate brokerage, law and finance.

SAB 110 Substance Abuse Overview
Prerequisites: None
Corequisites: None
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.
SAB 120 Intake and Assessment 3 0 0 3
Prerequisites: None
Corequisites: None
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.

SAB 125 SAB Case Management 2 2 0 3
Prerequisites: SAB 120
Corequisites: None
This course provides case management activities, including record keeping, recovery issues, community resources, and continuum of care. Emphasis is placed on establishing a systematic approach to monitor the treatment plan and maintain quality of life. Upon completion, students should be able to assist clients in the continuum of care as an ongoing recovery process and develop agency networking.

SAB 135 Addictive Process 3 0 0 3
Prerequisites: PSY 150
Corequisites: None
This course explores the physical, emotional, psychological, and cultural aspects of the addictive process. Emphasis is placed on addictions 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.

SAB 210 Substance Abuse Counseling 2 2 0 3
Prerequisites: None
Corequisites: None
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.

SAB 220 Group Techniques/Therapy 2 2 0 3
Prerequisites: HSE 112
Corequisites: None
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.

SAB 240 Substance Abuse 3 0 0 3
Prerequisites: None
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.

SGR 110 Scientific Graphics 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces software packages used for graphing, drawing, image manipulation, data visualization, and 3D modeling. Emphasis is placed on solving design problems through appropriate visual communications techniques and on using the packages in combination to produce final documents. Upon completion, students should be able to prepare informal graphics and images and create rendered three-dimensional models.

SEC 110 Security Concepts 3 0 0 3
Prerequisites: RED 090
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.

SEC 150 Secure Communications 2 2 0 3
Prerequisites: SEC 110; and NET 110 or NET 125
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.

SEC 160 Secure Administration I 2 2 0 3
Prerequisites: SEC 110; and NET 110 or NET 125
Corequisites: None
This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.

SEC 170 SOHO Security 2 2 0 3
Prerequisites: SEC 110
Corequisites: None
This course introduces security principles and topics related to the small office/home office networking environment. Topics include network topologies, network protocols, security issues, and best practices for SOHO environments. Upon completion, students should be able to design, setup, secure, and manage a small office/home office network.

SEC 210 Intrusion Detection 2 2 0 3
Prerequisites: SEC 160
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 solution for networks and host based systems.
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.

**SEC 230 Attack Methodology**

**Prerequisites:** SEC 220

Corequisites: None

This course provides the student with an in-depth look at common Internet, network, and host-based attack methodologies. Topics include attack methods such as social engineering, spoofing, denial of service, man-in-the-middle, session hijacking, password cracking, malicious code and web hacking techniques. Upon completion, students should be able to generate anomalous network traffic, identify common network attack patterns, and perform penetration testing.

**SEC 240 Wireless Security**

**Prerequisites:** SEC 110 and NET 175

Corequisites: None

This course introduces security principles and topics related to the wireless networking environment. Topics include network topologies, network protocols, security issues, and best practices for wireless environments. Upon completion, students should be able to design, setup, manage, and secure a wireless network.

**SEC 260 Secure Administration II**

**Prerequisites:** SEC 160

Corequisites: None

This course provides the skills necessary to design and implement information security controls. Topics include advanced networking and TCP/IP concepts, network vulnerability analysis, and monitoring. Upon completion, students should be able to distinguish between normal and anomalous network traffic, identify common network attack patterns, and implement security solutions.

**SEC 270 Secure Routing/Firewalls**

**Prerequisites:** NET 226 and SEC 110

Corequisites: None

This course introduces the principles of securing networks using routers and firewalls. Topics include networking protocols, threat mitigation, firewall configuration, authentication, authorization, intrusion detection, encryption, IPSec, VPNs, and remote access technologies. Upon completion, students should be able to secure internal networks using router and firewall technologies.

**SEC 275 Advanced Firewalls**

**Prerequisites:** SEC 270

Corequisites: None

This course covers advanced topics in securing networks using firewalls. Topics include networking protocols, firewall status and configuration, syslog configuration, security levels, NAP/PAT, Access Control Lists, Authentication, Authorization and Accounting, VPN, and Remote Access. Upon completion, students should be able to describe, configure, verify, and manage firewall technologies.

**SEC 289 Security Capstone Project**

**Prerequisites:** SEC 220

Corequisites: None

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.

**SOC 210 Introduction to Sociology**

**Prerequisites:** ENG 090, RED 090, or placement

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. This course is also available through the Virtual Learning Community (VLC).

**SOC 213 Sociology of the Family**

**Prerequisites:** ENG 090, RED 090, or placement

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 that influence its development and change.

This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

**SOC 220 Social Problems**

**Prerequisites:** ENG 090, RED 090, or placement

Corequisites: None

This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems.

This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**SOC 225 Social Diversity**

**Prerequisites:** ENG 090, RED 090, or placement

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.
**SOC 242 Sociology of Deviance**  
Prerequisites: ENG 090 and RED 090  
Corequisites: None  
This course provides an overview of deviant behavior and the processes involved in its definition, causation, prevention, control, and treatment. Topics include theories of causation, social control, delinquency, vicimization, criminality, the criminal justice system, punishment, rehabilitation, and restitution. Upon completion, students should be able to identify and analyze issues surrounding the nature and development of social responses to deviance. **This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.**

**SOC 252 Sociology of Work**  
Prerequisites: None  
Corequisites: None  
This course provides an understanding of the work experience in terms of rewards, satisfaction, exploitation, alienation, and institutional function and structure. Topics include an examination of industrial, professional, office, and executive work settings in relation to technology, management, and career opportunities. Upon completion, students should be able to understand work in its changing roles, institutions, and economic impact. **This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.**

**SPA 111 Elementary Spanish I**  
Prerequisites: ENG 090 or placement  
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. **This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).**

**SPA 112 Elementary Spanish II**  
Prerequisites: SPA 111  
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. 

**SPA 120 Spanish for the Workplace**  
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 career-specific 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. Emphasis will be on cultural awareness and cultural context issues.

**SPA 141 Culture and Civilization**  
Prerequisites: None  
Corequisites: None  
This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world. 

**SPA 151 Hispanic Literature**  
Prerequisites: ENG 111  
Corequisites: None  
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.

**SPA 161 Cultural Immersion**  
Prerequisites: SPA 111  
Corequisites: None  
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.

**SPA 181 Spanish Lab 1**  
Prerequisites: ENG 090 or placement  
Corequisites: SPA 111  
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 premajor and/or elective course requirement.**

**SPA 182 Spanish Lab 2**  
Prerequisites: SPA 181  
Corequisites: SPA 112  
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. 

**SPA 211 Intermediate Spanish I**  
Prerequisites: SPA 112  
Corequisites: SPA 281  
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.
SRV 210 Surveying III 2 6 0 4
Prerequisites: SRV 110
Corequisites: None
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 boundary.

SRV 220 Surveying Law 2 2 0 3
Prerequisites: SRV 110
Corequisites: None
This course introduces the law as related to the practice of surveying. Topics include surveyors’ responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.

SRV 230 Subdivision Planning 1 6 0 3
Prerequisites: SRV 111, SRV 210, 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 Topography/Site Surveying 2 6 0 4
Prerequisites: CIV 125 and SRV 110
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 260 Field and Office Practices 1 3 0 2
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.

SRV 297 Seminar in Surveying Technology - - - 2
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Surveying Technology. 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.
### SUR 110 Introduction to Surgical Technology 3 0 0 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 historical development, professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, and physiology of wound healing. Upon completion, student should be able to apply theoretical knowledge of the course topics to the operative environment.

### SUR 111 Perioperative Patient Care 5 6 0 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 5 3 0 6
- **Prerequisites:** SUR 110, SUR 111
- **Corequisites:** SUR 123
This course introduces a comprehensive study of surgical procedures in the following specialties: general, gastrointestinal, obstetrical/gynecology, urology, otorhinolaryngology, and plastics/reconstructive. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing 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.

### SUR 123 Clinical Practice I 0 0 21 7
- **Prerequisites:** SUR 110, SUR 111
- **Corequisites:** SUR 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 5 0 0 5
- **Prerequisites:** SUR 123
- **Corequisites:** None
This course introduces orthopedic, neurosurgical, peripheral vascular, thoracic, cardiovascular, and ophthalmology surgical specialties. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing 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.

### SUR 135 Clinical Practice II 0 0 12 4
- **Prerequisites:** SUR 123
- **Corequisites:** SUR 134, 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 1 0 0 1
- **Prerequisites:** SUR 123
- **Corequisites:** SUR 134, 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 0 0 6 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 2 0 0 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.

### SWK 110 Introduction to Social Work 3 0 0 3
- **Prerequisites:** None
- **Corequisites:** None
This course examines the historical development, values, orientation, and professional standards of social work and focuses on the terminology and broader systems of social welfare. Emphasis is placed on the various fields of practice including those agencies whose primary function is financial assistance, corrections, mental health, and protective services. Upon completion, students should be able to demonstrate an understanding of the knowledge, values, and skills of the social work professional.

### SWK 113 Working with Diversity 3 0 0 3
- **Prerequisites:** None
- **Corequisites:** None
This course examines and promotes understanding, sensitivity, awareness, and knowledge of human diversity. Emphasis is placed on professional responsibilities, duties, and skills critical to multicultural human services practice. Upon completion, students should be able to integrate and expand knowledge, skills, and cultural awareness relevant to diverse populations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNE 111</td>
<td>Campus Networks I</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
<td>This course is designed to introduce the fundamentals of data/computer networks. Topics include an overview of data communication standards, protocols, equipment, and how they are integrating into network topologies and systems. Upon completion, students should be able to demonstrate an understanding of telecommunication and networking.</td>
</tr>
<tr>
<td>TNE 121</td>
<td>Campus Networks II</td>
<td>2 3 0 3</td>
<td>TNE 111</td>
<td>None</td>
<td>This course covers the operating systems and topologies associated with networking. Topics include the various operating systems used in networking and the topologies explained on a network to network level. Upon completion, students should be able to use and explain operating systems and topologies. This course covers LANs, TCP/IP, switches, and routers.</td>
</tr>
<tr>
<td>TNE 193</td>
<td>Selected Topics in Telecommunications and Networking</td>
<td>- - - 3</td>
<td>Varies, based on topic</td>
<td>None</td>
<td>This course provides an opportunity to explore areas of current interest in Telecommunications and Network Engineering Technology. Emphasis is placed on subject matter appropriate to telecommunications and networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
</tr>
<tr>
<td>TNE 231</td>
<td>Data Communications over WAN</td>
<td>2 3 0 3</td>
<td>TNE 111, TNE 121</td>
<td>None</td>
<td>This course is designed to introduce wide area networking. Topics include LAN-to-LAN, LAN-to-host, LAN-to-WAN connectivity, X.25 protocol, packet switching networks, and network topologies explained on a WAN basis. Upon completion, students should be able to demonstrate an understanding of wide area networking. Emphasis will be placed on understanding LAN-to-WAN interfaces.</td>
</tr>
<tr>
<td>TNE 235</td>
<td>Internet Routing</td>
<td>3 3 - 4</td>
<td>TNE 231</td>
<td>None</td>
<td>This course introduces the technologies and protocols for Internet routing. Topics include Internet addressing, interior gateway protocols, exterior gateway protocols, and advanced routing protocols. Upon completion, students should be able to demonstrate an understanding of Internet routing.</td>
</tr>
<tr>
<td>TNE 241</td>
<td>Network Management</td>
<td>2 3 0 3</td>
<td>TNE 121</td>
<td>None</td>
<td>This course introduces theory and provides experience in analyzing and troubleshooting telecommunication network systems. Topics include physical issues, software debugging, viruses, e-mail, traffic management, server and router configuration, documentation, and equipment use. Upon completion, students should be able to identify and resolve telecommunication network problems.</td>
</tr>
<tr>
<td>TNE 242</td>
<td>Data Network Design</td>
<td>2 3 0 3</td>
<td>TNE 235</td>
<td>None</td>
<td>This course covers the principles of the design of LAN and WAN hierarchy through the terminal. Topics include OSI model, static and dynamic addressing, network terminal management, bandwidth requirements, Internet requirements, redundancy, and broadband versus baseband systems. Upon completion, students should be able to design a hierarchical network system to board design. Emphasis will be placed on prior knowledge on LAN/WAN interfaces and components.</td>
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<tr>
<td>TNE 245</td>
<td>Network Perimeter Security</td>
<td>2 3 - 3</td>
<td>TNE 121</td>
<td>None</td>
<td>This course introduces a variety of ways to implement security into network designs and upgrades. Topics include securing the network through the use of access lists, routers, firewalls, Ipchains, and stateful packet filtering. Upon completion, students should be able to demonstrate a variety of techniques to harden the network from outside threats. This course covers security protocols and IPSec, VPNs, and firewall routers.</td>
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<tr>
<td>TNE 250</td>
<td>Telecommunication Networks</td>
<td>2 3 0 3</td>
<td>TNE 230</td>
<td>None</td>
<td>This course is designed to introduce the fundamentals of telecommunication networks. Emphasis will be placed on voice and data communication integration. This course covers the current public switch telephone system, SONET, and SS7.</td>
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<tr>
<td>TNE 251</td>
<td>Advanced Telecommunication Networks</td>
<td>2 3 0 3</td>
<td>TNE 250</td>
<td>None</td>
<td>This course is a continuation of TNE 250 and introduces advanced concepts associated with telecommunication network systems. Topics include system network overview, subscriber loops, network testing and measurement, wiring, network transmission techniques synchronization and analysis, switching and signaling, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with telecommunication network systems. Emphasis will be placed on voice and data communication integration. This course covers voice-over-IP and cell phones.</td>
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<tr>
<td>TNE 261</td>
<td>Internet Development</td>
<td>2 3 0 3</td>
<td>TNE 111, TNE 121</td>
<td>None</td>
<td>This course is designed to introduce Internet concepts. Topics include Internet layer operation, IP routing and addresses and operations. TCP/IP operations and ports, firewalls, gateways, e-mail, and web-site development. Upon completion, students should be able to demonstrate an understanding of the course concepts. This course covers HTML and TCP/IP application protocols.</td>
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</tbody>
</table>
WEB 110  Internet/ Web Fundamentals  2 2 0 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, email, listservers, and other related topics. Upon completion, students should be able to deploy a website created with basic markup language, retrieve/decompress files, email, FTP, and utilize other internet tools. Topics include HTML and XHTML.

WEB 111  Intro to Web Graphics  2 2 0 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. Students will learn transparency, animation, slicing, data driven graphics, and will develop an understanding of the principles of web design.

WEB 115  Web Markup and Scripting  2 2 0 3
Prerequisites: WEB 110 or CIS 172 or CIS 115 or CSC 151
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. Students will also be exposed to industry standard development tools and practices with these technologies.

WEB 120  Introduction to Internet Multimedia  2 2 0 3
Prerequisites: WEB 111 or GRD 152 or ITN 110
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 0 3
Prerequisites: None
Corequisites: None
This course provides an introduction to web development software suites. Topics include the creation of web sites and applets using web development software. Upon completion, students should be able to create entire web sites and supporting applets.

WEB 180  Active Server Pages  2 2 0 3
Prerequisites: CIS 115 or WEB 115 or CSC 160
Corequisites: None
This course introduces Active Server Programming. Topics include Javascript, VBScript, HTML forms processing, and the Active Server Object Model. Upon completion, students should be able to create and maintain Active Server applications. Current trends in ASP, to include ASP.Net will be taught.

WEB 182  PHP Programming  2 2 0 3
Prerequisites: WEB 115 or CIS 115 or CSC 160
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.

WEB 183  Perl Programming  2 2 0 3
Prerequisites: WEB 115 or CIS 115 or CSC 160
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.

WEB 185  ColdFusion Programming  2 2 0 3
Prerequisites: CIS 115
Corequisites: None
This course introduces ColdFusion Programming. Topics include installing a ColdFusion development environment, using CQUERY 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.

WEB 180  XML Technology  2 2 0 3
Prerequisites: CIS 115; and WEB 110 or CIS 172
Corequisites: None
This course is designed to introduce students to XML and related internet technologies. Topics include extendible style language (XSL) document object model (DOM), extendible stylesheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

WEB 187  Wireless/Internet Programming  2 2 0 3
Prerequisites: CIS 115
Corequisites: None
This course introduces the Internet and Web development for portable wireless devices with a focus on practical business-related applications. Topics include WAP, WML, XHTML, XML, and wireless internet and mobile business practices and techniques. Upon completion, students should be able to develop and wirelessly enable websites and business applications for use on portable electronic devices.
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<th>Course Code</th>
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<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Notes</th>
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<td>WEB 210</td>
<td>Web Design</td>
<td>2 2 0 3</td>
<td>WEB 111 or ITN 110; and WEB 140 or ITN 140</td>
<td>None</td>
<td>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. Students will develop a working knowledge of using CSS and employing them in a website.</td>
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<tr>
<td>WEB 211</td>
<td>Advanced Web Graphics</td>
<td>2 2 0 3</td>
<td>WEB 110; and WEB 111 or ITN 110</td>
<td>None</td>
<td>This course is the second of two courses covering web graphics. Topics include graphics acquisition using scanners and digital cameras, graphics optimization, use of masks, advanced special effects, GIF animation, and other related topics. Upon completion, students should be able to create graphics optimized for size, graphic file type, properly converted from digitized sources and create useful animated graphics. Students will learn to manipulate, correct, and enhance digital photographic images.</td>
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<tr>
<td>WEB 215</td>
<td>Advanced Markup and Scripting</td>
<td>2 2 0 3</td>
<td>WEB 115</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WEB 220</td>
<td>Advanced Multimedia</td>
<td>2 2 0 3</td>
<td>WEB 120 or ITN 120</td>
<td>None</td>
<td>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 create interactive Internet multimedia presentations.</td>
</tr>
<tr>
<td>WEB 230</td>
<td>Implementing Web Servers</td>
<td>2 2 0 3</td>
<td>NET 110 or NET 125</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WEB 250</td>
<td>Database Driven Websites</td>
<td>2 2 0 3</td>
<td>DBA 110 and WEB 140</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WEB 260</td>
<td>E-Commerce Infrastructure</td>
<td>2 2 0 3</td>
<td>WEB 250; and WEB 180 or ITN 120</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WEB 285</td>
<td>Emerging Web Technologies</td>
<td>2 2 0 3</td>
<td>None</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WEB 289</td>
<td>Internet Technologies Project</td>
<td>1 4 0 3</td>
<td>WEB 230 and WEB 250</td>
<td>None</td>
<td>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.</td>
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<tr>
<td>WLD 110</td>
<td>Cutting Processes</td>
<td>1 3 0 2</td>
<td>None</td>
<td>None</td>
<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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<tr>
<td>WLD 111</td>
<td>Oxygen-Fuel Welding</td>
<td>1 3 0 2</td>
<td>None</td>
<td>None</td>
<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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<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>1 3 0 2</td>
<td>None</td>
<td>None</td>
<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>
</table>
WLD 115 SMAW (Stick) Plate 2 9 0 5
Prerequisites: None
Corequisites: None
This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

WLD 115a SMAW (Stick) Plate-Part 1 2 6 0 4
Prerequisites: WLD 115
Corequisites: None
This course is the first half of WLD 115 (see the description for WLD 115 above).

WLD 115b SMAW (Stick) Plate-Part 2 0 3 0 1
Prerequisites: WLD 115a
Corequisites: None
This course is the second half of WLD 115 (see the description for WLD 115 above).

WLD 116 SMAW (Stick) Plate/Pipe 1 9 0 4
Prerequisites: WLD 115
Corequisites: None
This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW 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.

WLD 116a SMAW (Stick) Plate/Pipe-Part 1 1 6 0 3
Prerequisites: WLD 115
Corequisites: None
This course is the first half of WLD 116 (see the description for WLD 116 above).

WLD 116b SMAW (Stick) Plate/Pipe-Part 2 0 3 0 1
Prerequisites: WLD 115, WLD 116a
Corequisites: None
This course is the second half of WLD 116 (see the description for WLD 116 above).

WLD 121 GMAW (MIG) FCAW/Plate 2 6 0 4
Prerequisites: None
Corequisites: None
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.

WLD 121a GMAW (MIG) FCAW/Plate-Part 1 1 3 0 2
Prerequisites: None
Corequisites: None
This course is the first half of WLD 121 (see description above).
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<th>Course Code</th>
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<td>WLD 261</td>
<td>Certification Practices</td>
<td>1 3 0 2</td>
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<td>Prerequisites: WLD 115, WLD 121, WLD 131</td>
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<td>Corequisites: None</td>
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<td>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.</td>
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<td>WLD 262</td>
<td>Inspection and Testing</td>
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<td>Corequisites: None</td>
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<td>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.</td>
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<td>Continuing Education Services</td>
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<tr>
<td>Bryan Ryan</td>
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A. Adult Education Center
B. Apex High School
C. Athens Drive High School
D. Business & Industry Center
E. Plastics Technology Center of Eastern North Carolina
F. Enloe High School
G. Health Sciences Campus
H. Knightdale High School
I. Leesville Road High School
J. Main Campus
K. Martin Middle School
L. Millbrook High School
M. Sanderson High School
N. Southeast Raleigh High School
O. State Personnel Development Center
P. Wake Forest-Rolesville High School
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