# Asheville-Buncombe Technical Community College

www.abtech.edu

**Catalog of Courses**
**Day and Evening College**
Volume 47
2009-2010


### Asheville Campus

340 Victoria Road
Asheville, NC 28801

Phone: 828/254-1921
Fax: 828/251-6355

TDD: 254-1921, Ext. 444
or depress space bar several times for operator assistance

### Enka Site

1459 Sand Hill Road
Candler, NC 28715

Phone: 828/254-1921
Ext. 5802

Fax: 828/281-9842

### Madison Site

4646 U.S. Hwy. 25-70
Marshall, NC 28753

Phone: 828/649-2947
Fax: 828/281-9859

### A-B Tech at the Mall

Asheville Mall
3 South Tunnel Road
Asheville, NC 28805

Phone: 828/254-1921
Ext. 7591


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**Governed by:** Asheville-Buncombe Technical Community College Board of Trustees

**Recognized and approved by:**

- North Carolina State Board of Community Colleges
- N.C. State Approving Agency for the Use of Veterans Military and Educational Benefits

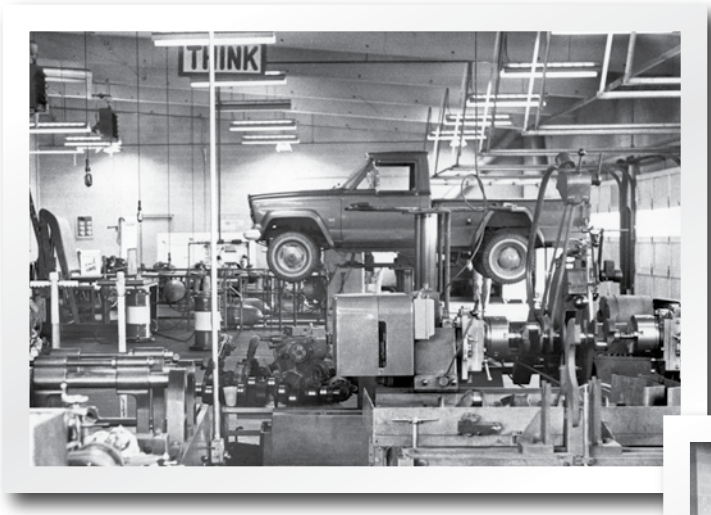
**Program Accreditors/Approvals:**

- Accreditation Review Committee on Education in Surgical Technology
- American Culinary Federation
- American Dental Association
- American Veterinary Medical Association Committee on Veterinary Technician Education and Activities
- Commission on Dental Accreditation
- Joint Review Committee on Education in Radiologic Technology
- National Accrediting Agency for Clinical Laboratory Sciences
- National Association for the Education of Young Children
- National Automotive Technicians Education Foundation, Inc.
- North Carolina Appraisal Board
- North Carolina Board of Nursing
- North Carolina Office of Emergency Medical Services
- North Carolina Real Estate Commission
- North Carolina State Board of Cosmetic Art Examiners

Asheville-Buncombe Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees.

**Catalog changes:**
This catalog should not be considered a contract between Asheville-Buncombe Technical Community College and the student. Adjustments in program or course content, sequence, schedule, and faculty may be made as necessary. A minimum enrollment may be required to offer a course or continue a program. Charges for tuition and fees are subject to change. The College Calendar dates or events may change because of inclement weather or for other reasons. If changes become necessary, efforts will be made to inform those who are involved.

# A-B Tech Celebrates Its 50th Year





# Contents

# Curriculum Programs

| Program | Credential | Schedule |
|---|---|---|
| Accounting | A.A.S. Degree | Day/Evening |
| Accounting Level I | Certificate | Day |
| Accounting Level II | Certificate | Day |
| Air Conditioning, Heating and Refrigeration Technology | Diploma | Day/Evening |
| Basic | Certificate | Day/Evening |
| Intermediate | Certificate | Day/Evening |
| Advanced | Certificate | Evening |
| Associate Degree Nursing | A.A.S. Degree | Day |
| Automotive Systems Technology | A.A.S. Degree | Day/Evening |
| Automotive Systems Technology | Diploma | Day/Evening |
| AST - Basic Auto Repair | Certificate | Day/Evening |
| AST - Drive Trains | Certificate | Day/Evening |
| AST - Electrical/Electronics | Certificate | Day/Evening |
| AST - Under-Car | Certificate | Day/Evening |
| Baking and Pastry Arts | A.A.S. Degree | Day |
| Basic Law Enforcement Training | Certificate | Day/Evening |
| Biotechnology | A.A.S. Degree | Day |
| Business Administration | A.A.S. Degree | Day/Evening |
| Carpentry | Diploma | Day |
| Basic Carpentry | Certificate | Evening |
| Basic Cabinetry | Certificate | Evening |
| Civil Engineering Technology | A.A.S. Degree | Day/Evening |
| College Transfer: | | |
| Associate in Arts | A.A. Degree | Day/Evening |
| Associate in Arts | A.A. Diploma | Day/Evening |
| Associate in Science | A.S. Degree | Day/Evening |
| Associate in Science | A.S. Diploma | Day/Evening |
| Associate in Fine Arts | A.F.A. Degree | Day |
| Computed Tomography & Magnetic Resonance Imaging Technology | Diploma | Day |
| Computed Tomography | Certificate | Day |
| Magnetic Resonance Imaging | Certificate | Day |
| Computer-Aided Drafting Technology | A.A.S. Degree | Day |
| Computer-Aided Drafting | Certificate | Evening |
| Architectural Drafting | Certificate | Evening |
| Landscape Architecture Drafting | Certificate | Evening |
| Computer Engineering Technology | A.A.S. Degree | Day/Evening |
| PC and Network Maintenance | Certificate | Day/Evening |
| Computer Information Technology | A.A.S. Degree | Day/Evening |
| Database Management | Certificate | Day/Evening |
| GIS (Geospatial Information Systems) | Certificate | Day/Evening |
| Microcomputer Applications | Certificate | Day/Evening |
| PC Installation and Maintenance | Certificate | Day/Evening |
| Construction Management Technology | A.A.S. Degree | Evening |
| Construction Management Technology | Certificate | Evening |
| Cosmetology | A.A.S. Degree | Day/Evening |
| Cosmetology | Diploma | Day/Evening |
| Criminal Justice Technology | A.A.S. Degree | Day/Evening |
| Culinary Technology | A.A.S. Degree | Day |
| Dental Assisting | Diploma | Day |
| Dental Hygiene | A.A.S. Degree | Day |
| Digital Media Technology | A.A.S. Degree | Day/Evening |
| Digital Video | Certificate | Day/Evening |
| Interactive Multimedia | Certificate | Day/Evening |

| Program | Credential | Schedule |
|---|---|---|
| Early Childhood Associate | A.A.S. Degree | Day |
| Early Childhood | Certificate | Day/Evening |
| Infant/Toddler Care | Certificate | Day/Evening |
| Special Education | Certificate | Day/Evening |
| Early Childhood/Teacher Associate | A.A.S. Degree | Day |
| Electrical/Electronics Technology | A.A.S. Degree | Day/Evening |
| Electrical/Electronics Technology | Diploma | Evening |
| Building Automation & Controls | Certificate | Day/Evening |
| Electrical Wiring | Certificate | Day/Evening |
| Instrumentation and Control | Certificate | Day/Evening |
| Electronics Engineering Technology | A.A.S. Degree | Day/Evening |
| Emergency Medical Science | A.A.S. Degree | Day |
| Entrepreneurship | A.A.S. Degree | Day |
| Entrepreneurship | Certificate | Day/Evening |
| Esthetics Technology | Certificate | Day/Evening |
| Fire Protection Technology | A.A.S. Degree | Day/Evening |
| Fire Protection Technology | Certificate | Day/Evening |
| General Occupational Technology | A.A.S. Degree | Day/Evening |
| General Occupational Technology | Diploma | Day/Evening |
| Heavy Equipment and Transport Technology | A.A.S. Degree | Evening |
| Heavy Equipment and Transport Technology | Diploma | Day |
| Heavy Equipment and Transport Technology | Certificate | Day |
| Hotel and Restaurant Management | A.A.S. Degree | Day |
| Bed and Breakfast/Inn Management | Certificate | Day |
| Hospitality Management | Certificate | Day/Evening |
| Human Resources Management | A.A.S. Degree | Evening |
| Human Services Technology/Social Services | A.A.S. Degree | Day |
| Industrial Systems Technology | A.A.S. Degree | Day/Evening |
| Industrial Systems Technology | Diploma | Day |
| Basic Maintenance | Certificate | Day/Evening |
| Metal Fabrication | Certificate | Day/Evening |
| Information Systems Security | A.A.S. Degree | Day/Evening |
| Machining Technology | A.A.S. Degree | Day/Evening |
| Machining Technology | Diploma | Day/Evening |
| Basic Machining | Certificate | Day/Evening |
| CNC Programming | Certificate | Day/Evening |
| Advanced CNC Programming | Certificate | Day/Evening |
| Manicuring/Nail Technology | Certificate | Day/Evening |
| Marketing and Retailing | A.A.S. Degree | Day/Evening |
| Retail Marketing | Certificate | Day/Evening |
| Mechanical Engineering Technology | A.A.S. Degree | Day |
| Plastic Injection Molding Certificate | Certificate | Day/Evening |
| Mechanical Drafting Certificate | Certificate | Day/Evening |
| Quality and cGMP Certificate | Certificate | Day/Evening |
| Medical Assisting | A.A.S. Degree | Day |
| Medical Laboratory Technology | A.A.S. Degree | Day |
| Medical Office Administration | Diploma | Day/Evening |
| Medical Coding | Certificate | Evening |
| Medical Sonography | A.A.S. Degree | Day |
| Medical Transcription | Diploma | Day/Evening |
| Networking Technology | A.A.S. Degree | Day/Evening |
| Basic Network Administration | Certificate | Day/Evening |
| CCNA Preparation | Certificate | Day/Evening |

| Program | Credential | Schedule |
|---|---|---|
| Office Administration | A.A.S. Degree | Day |
| Office Administration | Diploma | Day |
| Word Processing/Desktop Publishing | Certificate | Day/Evening |
| Opthalmic Medical Assistant | Diploma* | Day |
| *Diploma offered in collaboration with Caldwell Community College & Technical Institute | | |
| Phlebotomy | Certificate | Day |
| Practical Nursing | Diploma | Day |
| Radiography | A.A.S. Degree | Day |
| Real Estate Appraisal | Certificate | Evening |
| Real Estate Licensing | Certificate | Evening |
| Resort and Spa Management | Certificate | Day |
| Surgical Technology | A.A.S. Degree | Day |
| Surgical Technology | Diploma | Day |
| Surveying Technology | A.A.S. Degree | Day/Evening |
| Civil/Surveying CAD | Certificate | Day/Evening |
| Surveying Fundamentals | Certificate | Day |
| Therapeutic Massage | A.A.S. Degree | Day/Evening |
| Therapeutic Massage | Diploma | Day/Evening |
| Veterinary Medical Technology | A.A.S. Degree | Day |
| Web Technologies | A.A.S. Degree | Day/Evening |
| Web Designer | Certificate | Day/Evening |
| Web Programming | Certificate | Day/Evening |
| Welding Technology | A.A.S Degree | Day |
| Welding Technology | Diploma | Day |
| Welding Technology - Basic Welding I | Certificate | Evening |
| Welding Technology - Ornamental Ironwork | Certificate | Day |

Address correspondence to the appropriate office in care of:

**Asheville-Buncombe Technical Community College**
**340 Victoria Road**
**Asheville, NC 28801**

**Tel: 828/254-1921**
**Fax: 828/251-6355**
**Internet: www.abtech.edu**

# Directory of College Services and Offices

**Curriculum Programs** . . . . . **Vice President, Instructional Services**
Simpson Administration Building, Asheville Campus, Ext. 105

Allied Health and Public Service Education . . . . . Dean
Rhododendron Building, Asheville Campus, Ext. 250

Emergency Services Academy . . . . . Associate Dean
Hemlock Building, Asheville Campus, Ext. 353

Arts and Sciences . . . . . Dean
Elm Building, Asheville Campus, Ext. 7650

Business and Hospitality Education . . . . . Dean
Birch Building, Asheville Campus, Ext. 286

Hospitality Education Academy . . . . . Associate Dean
Magnolia Building, Asheville Campus, Ext. 232

Career Pathways Partnership . . . . . Director
Sunnicrest Building, Asheville Campus, Ext. 439

Engineering and Applied Technology . . . . . Dean
Dogwood Building, Asheville Campus, Ext. 220

Instructional Support and Online Learning . . . . . Executive Director
Holly Building, Asheville Campus, Ext. 439

**Economic and Workforce Development/Continuing Education** . . . . . **Vice President**
Haynes Technology Center, Enka Site, Ext. 5837

Basic Skills . . . . . Executive Director
Pines Building, Asheville Campus, Ext. 488

Community Service Programs . . . . . Director
Pines Building, Asheville Campus, Ext. 134

Emergency Services Academy . . . . . Associate Dean
Hemlock Building, Asheville Campus, Ext. 353

Entrepreneurial Ventures and Business Incubator . . . . . Executive Director
Small Business Center/Business Incubator, Enka Site, Ext. 5851

GED Preparation . . . . . Basic Skills Office
Pines Building, Asheville Campus, Ext. 132

GED Test Scheduling . . . . . Basic Skills Office
Pines Building, Asheville Campus, Exts. 132, 433

GED Test Results/Transcripts . . . . . GED Examiner
Pines Building, Asheville Campus, Ext. 312

Occupational and Public Service Training . . . . . Executive Director
Haynes Technology Center, Enka Site, Ext. 5836

Workforce Development . . . . . Executive Director
Haynes Technology Center, Enka Site, Ext. 5823

**Office of Finance and Informations Systems Technology** . . . . . **Executive Vice President**
Simpson Administration Building, Asheville Campus, Ext. 111

Business Services . . . . . Director, Business Services
Bailey Student Services Center, Asheville Campus, Ext. 390

Information Systems Technology . . . . . Director, Information Systems Technology
Simpson Administration Building, Asheville Campus, Ext 124

**Office of Risk Management and Operations** . . . . . **Vice President**

Campus Police and Security . . . . . Chief of Police and Security
Chestnut Building, Asheville Campus, Ext. 870

Plant Operations . . . . . Director, Plant Operations
Chestnut Building, Asheville Campus, Ext. 482

**Student Services** . . . . . **Vice President, Student Services**
Bailey Student Services Center, Asheville Campus, Ext. 140

A-B Tech at the Mall . . . . . Site Coordinator
Mall Site, Ext. 7591

Admissions . . . . . Admissions Office
Bailey Student Services Center, Asheville Campus, Exts. 144, 145, 210

Counseling . . . . . Counselors
Bailey Student Services Center, Asheville Campus, Exts. 141, 146, 164, 209, 434

Disability Services . . . . . Coordinator of Disability Services
Bailey Student Services Center, Asheville Campus, Ext. 141

Graduation Application . . . . . Associate Registrar
Bailey Student Services Center, Asheville Campus, Ext. 291

International Student Services . . . . . International Student Advisor
Bailey Student Services Center, Asheville Campus, Ext. 441

Student Academic Records . . . . . Records and Registration
Bailey Student Services Center, Asheville Campus, Ext. 291, 376, 494, 204

Student Activities . . . . . Director of Student Activities
Coman Student Activity Center, Asheville Campus, Ext. 203

Transcript Request . . . . . Records and Registration
Bailey Student Services Center, Asheville Campus, Ext. 204

Transfer Credits . . . . . Director of Admissions
Bailey Student Services Center, Asheville Campus, Ext. 202

Transfer-to-Senior-Institution Information . . . . . Transfer Advising Center
Elm Building, Asheville Campus, Ext. 180 or 183

Veterans . . . . . Veteran's Service Office
Bailey Student Services Center, Asheville Campus, Ext. 206

Visiting the Campus . . . . . College Recruiter
Coman Student Activity Center, Asheville Campus, Ext. 7585

**Learning Resources . . . . . Dean**
Holly Building, Asheville Campus, Ext. 310

Academic Learning Center . . . . . Coordinator
Ferguson Building, Asheville Campus, Ext. 228

Instructional Technology . . . . . Coordinator
Holly Building, Asheville Campus, Ext. 304

Library . . . . . Director
Holly Building, Asheville Campus, Ext. 307

Service Learning . . . . . Coordinator
Holly Building, Asheville Campus, Ext. 7573

**College Services and Information**

ADA Coordinator . . . . . Director of Human Resources
Sunnicrest Building, Asheville Campus, Ext. 113

Books . . . . . Bookstore
Bailey Student Services Center, Asheville Campus, Exts. 274, 208

Emergencies . . . . . Ext. 125 or 9-911

Financial Aid . . . . . Financial Aid Office
Bailey Student Services Center, Asheville Campus, Exts. 163, 876

Foundation . . . . . Executive Director
Fernihurst Building, Asheville Campus, Ext. 176

Grants . . . . . Grants Writer/Coordinator
Fernihurst Building, Asheville Campus, Ext. 7561

Human Resources . . . . . Director of Human Resources
Sunnicrest Building, Asheville Campus, Ext. 113

Intramurals . . . . . Coman Student Activity Center, Ext. 843

Job Placement . . . . . JobLink Center
Maple Building, Asheville Campus, 250-4761

Mountain Tech Lodge . . . . . Manager
Magnolia Building, Asheville Campus, Ext. 248

News, Publications . . . . . Director of Communications
Simpson Administration Building, Asheville Campus, Ext. 117

Organizational and Professional Development . . . . . Director
Sunnicrest Building, Asheville Campus, Ext. 178

Parking Permits . . . . . Accounting Clerk/Cashier
Simpson Administration Building, Asheville Campus, Ext. 152

Payments, Student Accounts . . . . . Business Office
Bailey Student Services Center, Asheville Campus, Exts. 152, 156, 155

Resource Development . . . . . Resource Development Officer
Fernihurst Building, Asheville Campus, Ext. 179

Scholarships . . . . . Officer
Fernihurst Building, Asheville Campus, Ext. 7562

Campus Police/Security . . . . . Chestnut Building, Asheville Campus
Ext. 0

**Curriculum Programs**

Grade Changes . . . . . Class Instructor

Tutoring . . . . . Class Instructor

# College Calendar 2009-2010

All dates in this calendar are subject to change.

## Fall Semester – 2009

| | |
|---|---|
| Registration: Current and Continuing Students | July 13 – 17 |
| Registration: New Classified Students | July 20 – 24 |
| General Registration | July 27 – August 7 |
| Last Day to Pay Tuition and Fees | August 7* |
| *Please note: Unpaid registrations will be deleted from the computer registration system at 4:30 p.m. | |
| Late Registration | August 10 – 18 |
| Last Day to Pay Tuition and Fees for Late Registration | August 18 |
| New Student Welcome | August 18, 9:00 a.m. and 6:00 p.m. |
| Classes Begin | August 19 |
| Schedule Adjustments | August 19-21 |
| Minimester I | August 19 - October 14 |
| Last Day to Drop for a Partial Refund (Full term) | August 28 |
| Late Start Semester First Class Day | August 26 |
| Labor Day College Holiday | September 7 |
| Student Fall Break | October 19 – 20 |
| Minimester II | October 15-December 16 |
| Last Day to Withdraw from a full 16-Week Class | November 13 |
| Thanksgiving Student Holiday | November 25 – 28 |
| Thanksgiving College Holiday | November 26 – 28 |
| Last Day of Class/Examinations** | December 16 |
| Total Class Days | 80<br>**Wednesday, October 14 will operate on a Monday class schedule** |
| Winter College Holidays | December 24 - 31, January 1 |
| **Up to three days may be made up at the end of the semester for inclement weather. | |

## Spring Semester – 2010

| | |
|---|---|
| Registration: Current and Continuing Students | November 30 – December 4 |
| General Registration | December 7 – December 18 |
| Last Day to Pay Tuition and Fees | December 18* |

*Please note: Unpaid registrations will be deleted from the computer registration system at 4:30 p.m.

| | |
|---|---|
| Late Registration | December 21 – January 8 |
| Last Day to Pay Tuition and Fees for Late Registration | January 8 |
| New Student Welcome | January 8, 9:00 a.m. |
| Classes Begin | January 11 |
| Schedule Adjustments | January 11 – 13 |
| Minimester I | January 11 – March 8 |
| Martin Luther King Jr. Day College Holiday | January 18 |
| Last Day to Drop for a Partial Refund (Full term) | January 21 |
| Late Start Semester First Class Day | January 27 |
| Last Day to Apply for Spring Graduation | February 26 |
| Professional Development Day or Inclement Weather Make Up | March 9 |
| Minimester II | March 10 – May 11 |
| Last Day to Withdraw from a full 16-Week Class | April 13 |
| Spring College Holiday | April 5 |
| Student Spring Break | April 5 – April 9 |
| Last Day of Class/Examinations** | May 11 |
| Spring Graduation | May 14 |
| Total Class Days | 80 |

**Up to three days may be made up at the end of the semester or during spring break for inclement weather.

## Summer Session – 2010

| | |
|---|---|
| Registration: Current and Continuing Students | April 26 - 30 |
| General Registration | May 3 - 14 |
| Last Day to Pay Tuition and Fees | May 14 * |

*Please note: Unpaid registrations will be deleted from the computer registration system at 4:30 p.m.

| | |
|---|---|
| Late Registration | May 17 – 21 |
| Last Day to Pay Tuition and Fees for Late Registration | May 21 |
| New Student Welcome | May 21, 9:00 a.m |
| Classes Begin | May 24 |
| Memorial Day College Holiday | May 31 |
| Schedule Adjustments | May 24 - 25 |
| Last Day to Apply for Summer Graduation | May 21 |
| Last Day to Drop for a Partial Refund | May 28 |
| Independence Day College Holiday | July 5 |
| Last Day to Withdraw | July 16 |
| Last Day of Class/Examinations | August 3 |
| Summer Graduation | August 6 |
| Total Class Days | **50**<br>**Tuesday, August 3 will operate on a Monday class schedule** |

**Up to three days may be made up at the end of the semester for inclement weather.

# 2009

### January

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
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| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

### February

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| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

### March

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| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

### April

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| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
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### May

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| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

### June

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| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

### July

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| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

### August

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| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

### September

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| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | | | |

### October

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| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

### November

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| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | | | | | |

### December

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| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

# 2010

### January

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
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| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

### February

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|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | | | | | | |

### March

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

### April

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| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | |

### May

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| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

### June

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
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| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | | | |

### July

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

### August

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

### September

| S | M | T | W | T | F | S |
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| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | | |

### October

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| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

### November

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
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| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

### December

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

# Summary of Performance Measures 2009 Report

| | Performance Measure | Standard Met | A-B Tech Results |
|---|---|---|---|
| 1. | Progress of Basic Skills Students<br>***Standard**: 75% making progress* | YES | *81% demonstrated progress* |
| 2. | Passing Rates for Licensure and Certification Exams for First-Time Test Takers<br>***Standard**: 80% aggregate passing rate* | YES | *95% aggregate passing rate* |
| 3. | Performance of College Transfer Students<br>***Standard**: 83% of students who transfer to a 4-year institution will have a GPA of 2.0 or higher after two semesters* | YES | *95% of college transfer students had a GPA of 2.0 or above after two semesters at a UNC institution* |
| 4. | Passing Rates of Students in Developmental Courses<br>***Standard**: 75% passing rate with a grade of "C" or better.* | YES | *92% passing rate* |
| 5. | Success of Developmental Students in Subsequent College Courses<br>***Standard**: 80% of students who took developmental courses will pass the "gatekeeper" English and/or mathematics course for which the developmental course serves as a prerequisite* | YES | *86% Pass Rate* |
| 6. | Satisfaction of Completers and Non-Completers<br>***Standard**: 90% satisfied with the quality of college programs and services* | YES | *97% satisfaction rate* |
| 7. | Curriculum Student Retention and Graduation<br>***Standard**: 65% of fall degree seeking students will either re-enroll, transfer or graduate by the subsequent fall* | YES | *71% retention, graduation or transfer rate* |
| 8. | Business/Industry Satisfaction with Services Provided<br>***Standard**: 90% of respondents will rate services provided as "very good" or "excellent"* | YES | *94% satisfaction rate* |

For each measure met, the college may retain and carry forward into the next fiscal year one-fourth of one percent (1/4 of 1%) of its final fiscal year General Fund appropriation. If a college meets all eight performance funding measures, and:

1) achieves a 70% or greater passing rate on all licensure/certification exams and
2) its college transfer performance equals or exceeds the performance of native UNC students,

it is classified as an "Exceptional" institution and is eligible for additional funding which is distributed equally among Exceptional colleges.

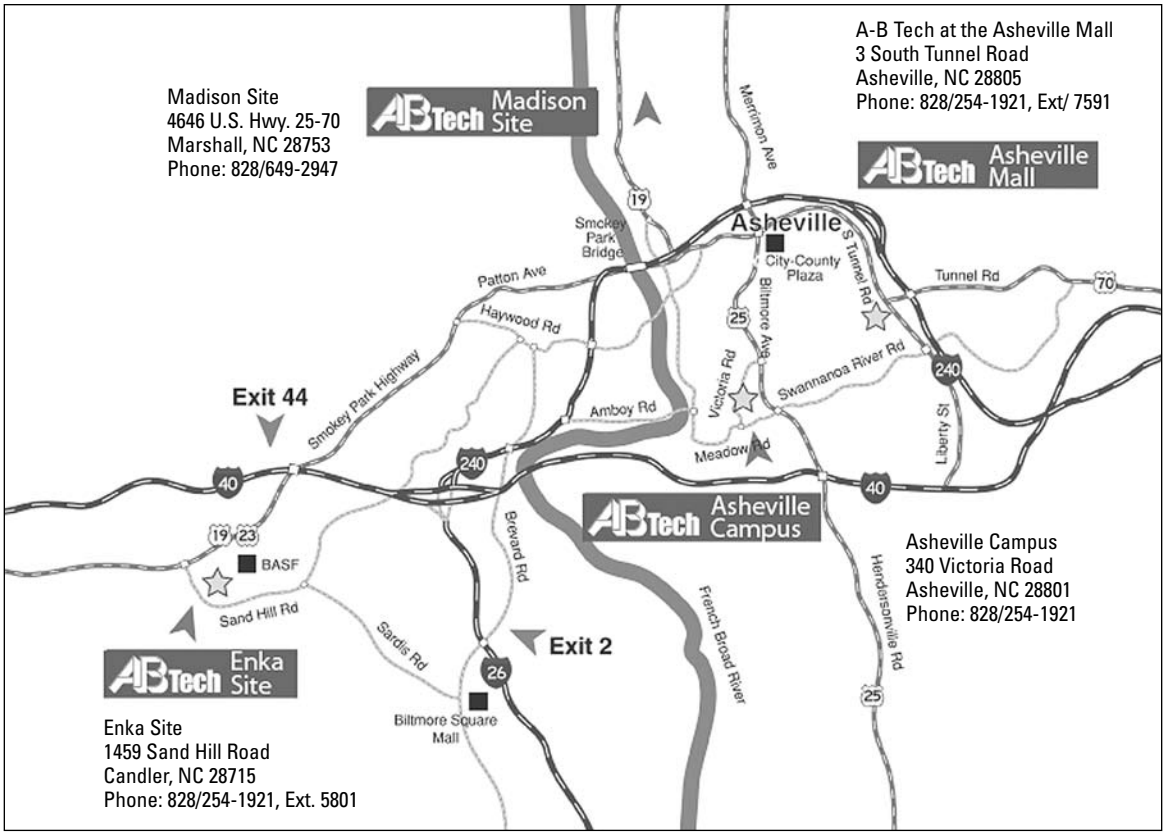
## "Exceptional" College Status

Must meet all of the above performance measures in addition to:

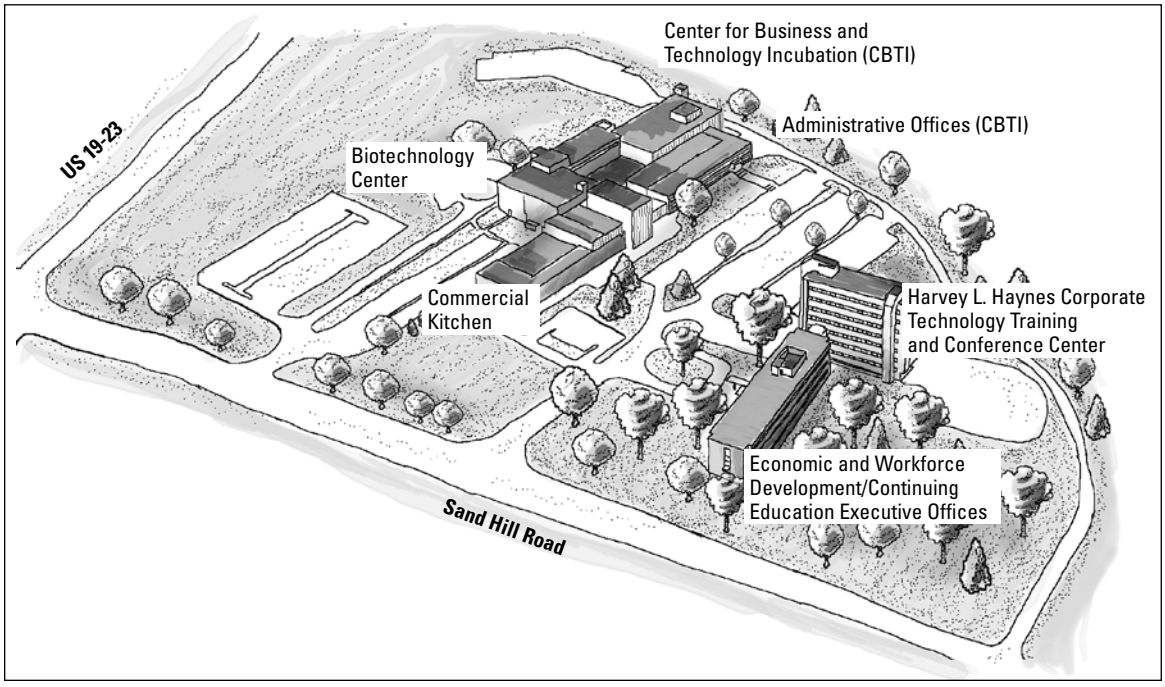
| | | | |
|---|---|---|---|
| 2a. | Passing Rates for Licensure and Certification Exams<br>***Standard**: 70% minimum passing rate for all exams* | YES | *All required exams achieved a 70% minimum passing rate* |
| 3a. | Performance of College Transfer Students<br>***Standard**: Equivalent to or greater than native UNC sophomores and juniors (87.5%)* | YES | *95% of college transfer students had a GPA of 2.0 or above after two semesters at a UNC institution* |

Source: 2009 Critical Success Factors Report

# Site Locator Map




# Enka Site Facilities Map



## Asheville Campus


1 - Thomas W. Simpson Administration Building
2 - K. Ray Bailey Student Services Center
3 - Balsam Computer Technology Center
4 - Birch Building
5 - Chestnut Building
6 - Dogwood Building
7 - Elm Building
8 - Ferguson Building
9 - Fernihurst
10 - Fernihurst Annex A & B
11 - Hemlock Building
12 - Holly Building
13 - Ivy Building
14 - J. Herbert Coman Student Activity Center
15 - Magnolia Hospitality Education Center
16 - Maple Building
17 - Maple Building Annex
18 - The Pines
19 - Poplar Building
20 - Rhododendron Building
21 - Smith-McDowell House Museum
22 - Sunnicrest
23 - Sycamore Building

## Asheville Campus Facilities

**Thomas W. Simpson Administration Building**
Office of Finance and IST
Office of Risk Management and Operations
Communications Office
Elevated Lecture Room
Information Systems Technology
Instructional Services
Office of the President
Research and Planning Office

**Balsam Computer Technology Center**
Cisco Networking Academy
Computer Information Technology
Digital Media Technology
Information Systems Security
Medical Coding
Medical Office Administration
Medical Transcription
Networking Technology
Office Systems Technology
Red Hat Academy
Web Technologies
Word Processing/Desktop Publishing

**Birch Building**
Accounting
Business Administration
Cosmetology
Early College
Esthetics Technology
Human Resources Management
Manicuring/Nail Technology
Marketing and Retailing
Real Estate
Real Estate Appraisal
Therapeutic Massage

**Chestnut Building**
Plant Operations
Receiving
Security Office

**Coman Student Activity Center**
A-B Tech Café
Art Studio
Gym
Health and Physical Education
Intramurals
Recruiter
Student Government Association
Student Activities Office
Student Lounge

**Dogwood Building**
Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Carpentry
Construction Management Technology
Electrical/Electronics Technology
Heavy Equipment and Transport Technology
Machining Technology
Mechanical Engineering Technology
Welding Technology

**Elm Building**
Civil Engineering Technology
Computer-Aided Drafting Technology
Electronics Engineering Technology
English/Communications
Flexible Automated Manufacturing Training Center
Humanities/Fine Arts
Mathematics
Nursing Assistant Levels I and II
Surveying Technology
Transfer Advising Center

**Ferguson Building**
Academic Learning Center
Developmental Studies
Ferguson Auditorium

**Fernihurst**
Baking and Pastry Arts
Conference Rooms
Culinary Technology
Dining Rooms
Hotel and Restaurant Management
Foundation Office
Grants Office
Scholarship Office

**Fernihurst Annex A and B**
Drama and Performing Arts

**Hemlock Building**
Emergency Services Academy
Basic Law Enforcement Training
Criminal Justice Technology
Emergency Medical Science
Fire Protection Technology
Early Childhood Associate
Human Services Technology/ Social Services
Teacher Associate

**Holly Building**
Computer Lab
Instructional Support and Online Learning
Educational Technology Services
Library
Service-Learning Center

**Ivy Building**
Decorative Restoration

**K. Ray Bailey Student Success and Advocacy Center**
Admissions Office
Business Office
Bookstore
Career Center
Counseling Center
Disability Services
Financial Aid Office
International Student Services
Placement Testing
Records and Registration (Registrar)
Veterans Representative

**Magnolia**
Baking and Pastry Arts
Culinary Technology
Demonstration Hall
Dining Rooms
Hotel and Restaurant Management
Mountain Tech Lodge
Resort and Spa Management

**Maple Building**
JobLink Career Center
Mountain Area Workforce Development Board Administrative Staff Office

**Maple Annex**
Lab - Carpentry, Electrical, HVAC, Plumbing, etc.

**The Pines**
Adult Basic Education (ABE)
Community Service Programs
Compensatory Education
Continuing Education Business Office and Registration
English as a Second Language (ESL)
General Education Development (GED)
Human Resources Development Program (HRD)

**Poplar Building**
Child Care Center

**Rhododendron Building**
Associate Degree Nursing
Computed Tomography & Magnetic Resonance Imaging (CT/MRI) Technology
Dental Assisting
Dental Hygiene
Medical Assisting
Medical Laboratory Technology
Medical Sonography
Phlebotomy
Practical Nursing
Radiography
Surgical Technology
Veterinary Medical Technology

**Smith-McDowell House Museum (Leased to WNC Historical Association)**
Museum of WNC History

**Sunnicrest**
ADA Coordinator
Career Pathways Partnership
Human Resources
Organizational and Professional Development Office

**Sycamore Building**
Biology
Chemistry/Physics
Video Conference Center

## Enka Site Facilities

**Harvey L. Haynes Corporate Technology Training and Conference Center**
Economic & Workforce Development
Executive Offices
Division Business Office and Registration
Occupational and Public Service Training
Workforce Development
Customized Training Programs
Quality Initiatives

**Center for Business and Technology Incubation**
BioNetwork/BioBusiness
Biotechnology
BioWork Classroom/Lab
Business Incubator
Commercial Kitchen
Core Technology Lab
Small Business Center
Student Business Incubator
Technology Commercialization Center

## Madison Site Facilities

**Liston B. Ramsey Building**
Administrative Offices
Auditorium
Classrooms
Computer Lab
Conference Room
Shop

# Organization

## History

Asheville-Buncombe Technical Community College has served as the community's premier technical educator for many years. Originally funded by a bond election, the institution was established Sept. 1, 1959 and named the Asheville Industrial Education Center.

Following legislation creating the North Carolina System of Community Colleges that was enacted in 1963 by the General Assembly, the name was changed on Jan. 27, 1964 to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August 1964.

In its early years, the College administered the operation of four units located throughout Western North Carolina. These units have gained independent status and are now fully accredited community colleges.

The Board of Trustees approved a third name change to Asheville-Buncombe Technical College on Aug. 6, 1979. A final name change occurred Nov. 2, 1987 when the Board of Trustees approved Asheville-Buncombe Technical Community College, an action that became official when endorsed by the Buncombe County Commissioners on Nov. 3, 1987.

In October 1988, the College received approval to offer associate degree programs. In September 1989, the College enrolled its first class for the Associate in Science degree. The Associate in Arts degree was first offered during summer quarter 1990-91.

On Jan. 18, 1990, A-B Tech officially opened a satellite site in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since Dec. 12, 1984.

By the fall term of 1997, the College had reengineered all programs and converted to the semester system.

On Oct. 23, 2000, BASF Corporation donated nearly 37 acres and three buildings to A-B Tech to establish a satellite site in Enka that includes a small business center, a student business incubator, a technology training and conference center, a biotechnology center, a biobusiness center, and a commercial food kitchen.

The College opened a site offering credit and non-credit courses at the Asheville Mall in September 2006.

## Administration

The College was initially administered by the Asheville City School Board of Education. Following the establishment of the North Carolina System of Community Colleges, control passed to an independent board of trustees.

From the beginning, prominent Asheville and Buncombe County business and community leaders have helped to guide the College. In addition, each academic program has an advisory committee made up of local practitioners. Several hundred local citizens provide guidance for the educational programs of the College.

## Curricula

The first program offered by the College was Practical Nursing. Electronics Engineering Technology and the Machinist programs were started in 1960. These three curricula are still offered along with many other career and College transfer programs.

The College offers the Associate in Arts, the Associate in Science, the Associate in Fine Arts, and the Associate in Applied Science degrees, diplomas, and certificates.

The Associate in Arts, Associate in Science, and Associate in Fine Arts degree programs are offered in the Division of Arts and Sciences. All career curricula and courses are offered through three divisions: Allied Health and Public Service Education, Business and Hospitality Education, and Engineering and Applied Technology. In addition, noncredit academic, avocational, practical skills, and occupational classes and activities are offered through the Continuing Education Division.

Economic and Workforce Development/Continuing Education courses are generally offered, with sufficient enrollment, on demand. Curriculum courses are usually offered on planned schedules in both the day and evening/weekend programs. Many curriculum classes are also offered in clusters for unclassified students. Some Economic and Workforce Development/Continuing Education courses-including Adult Basic Education, Human Resources Development, New and Expanding Industry Training, Small Business Center, Total Quality Management, and Focused Industrial Training activities-are ongoing or are repeated on a regular basis.

Both curriculum and Economic and Workforce Development/Continuing Education programs are supported through the activities of the GED Testing program, Developmental Studies, the Academic Learning Center, and the Library. Classes meet on campus and at various off-campus sites. Course requirements are the same without regard to meeting times or locations.

## Campus Facilities

On March 15, 1961 the Industrial Education Center moved into two newly constructed buildings off Victoria Road in Asheville. Over the years, the Board of Trustees has acquired land that today totals 144 acres.

Twenty-three buildings house academic programs and campus services. Included in this total is the Smith-McDowell House, the oldest brick house in Buncombe County, leased to the Western North Carolina Historical Association.

On Jan. 18, 1990 the College established a site in Madison County. The satellite operation provides adult education and College credit courses for the people of Madison County.

Over the years, a combination of special funding has provided for campus expansion. Since 1985, the North Carolina General Assembly has approved $5 million in special legislation for campus construction.

Since 1987, Buncombe County voters have approved $13.5 million in bonds to be used for campus additions and renovations. In statewide bond referendums, voters approved $5 million in 1993 and $14 million in 2000 for capital projects at A-B Tech.

Buncombe County Commissioners purchased property for A-B Tech belonging to St. Genevieve Gibbons Hall, a private school that merged with Asheville Country Day School to form the Carolina Day School. The Board of Trustees acquired the title to these 12.77 acres and four buildings on Sept. 23, 1987. Additionally, in 1990 the Commissioners purchased 16.75 acres contiguous to the west boundaries of the campus. This purchase included Sunnicrest, the only remaining lodge constructed by George Vanderbilt. The lodge has been renovated to house College offices.

On Oct. 21, 1987, A-B Tech in cooperation with Buncombe Child Development opened a Child Care Center, which offers day service to students and faculty.

On Oct. 23, 2000, BASF Corporation donated nearly 37 acres and three buildings to A-B Tech to establish a satellite site in Enka to provide space for a small business center, a student business incubator, a technology training and conference center, a biotechnology center, a biobusiness center, and a commercial food kitchen.

## Asheville-Buncombe Technical Community College Foundation

The Asheville-Buncombe Technical Community College Foundation was established in 1996 as a separate 501(c)(3) non-profit corporation. Its sole purpose is to provide financial support for the students and programs of Asheville-Buncombe Technical Community College. The A-B Tech Foundation meets critical needs that cannot be addressed in the College's normal operating budget. All gifts are tax deductible as allowed by law.

## Current Status

A-B Tech, with strong local support, has grown in facilities and land acquisition, in enrollment, in curricula, and in expanded services to the community. The College has the largest total headcount enrollment of any institution of higher education in Western North Carolina, serving more than 26,000 in 2008-09.

## Location

The Asheville campus is located on Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most livable towns in America. Situated near major interstates and on local bus routes, the College is convenient to the citizens it serves.

The Madison Site is located in Marshall, NC. The Enka Site is located in the Enka community near Asheville, NC. A-B Tech at the Mall is located at the Asheville Mall on South Tunnel Road in Asheville, NC.

## College Mission and Vision

### College Mission Statement

A-B Tech, the community's college, is dedicated to student success. As a comprehensive community college, A-B Tech is committed to providing accessible, quality, educational opportunities for lifelong learning to meet the diverse and changing needs of our community.

### College Vision Statement

A-B Tech's vision is to develop strategies for student success through Invitational Education.

## Nondiscrimination Policy

Asheville-Buncombe Technical Community College does not discriminate on the basis of sex, race, color, national origin, age, disability, or religion in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and under other Federal legislation the College will not discriminate on the basis of race, color, national origin, age, disability, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs.

Inquiries or complaints concerning the application of Title IX, the ADA, and other Federal nondiscrimination legislation to Asheville-Buncombe Technical Community College should be referred to:

Director of Human Resources
Asheville-Buncombe Technical Community College
340 Victoria Road
Telephone: 828/254-1921, Ext. 113
Asheville, North Carolina 28801
TDD: 254-1921, Ext. 444
Sunnicrest Building
Internet: www.abtech.edu

## Individuals with Disabilities

Individuals with disabilities (as defined in the Americans with Disabilities Act of 1990, "ADA") wishing to make a request for reasonable accommodation, auxiliary communication aids or services, or materials in alternative accessible formats should contact the Disability Services Counselor in the Bailey Student Services Center. Persons who wish to file a complaint of alleged discrimination on the basis of disability should contact the Director of Human Resources listed above.

## Communicable Disease Policy

Asheville-Buncombe Technical Community College shall not discriminate against applicants, employees, students, or persons utilizing A-B Tech services who have or are suspected of having a communicable disease. As long as employees are able to perform satisfactorily the essential functions of the job, and there is no medical evidence indicating that the employee's condition is a threat to the health or safety of the individual, coworkers, students, or the public, an employee shall not be denied continued employment. Applicants shall not be denied employment, nor shall students be denied admission to the campus or classes, nor shall persons utilizing A-B Tech services be denied services based on whether they are suspected of having a communicable disease so long as there is no threat to the health and safety of students, staff, or others involved. A-B Tech will consider the educational or employment status of individuals with a communicable disease or suspected of a communicable disease on an individual, case-by-case basis following any procedures outlined by the President.

## Internet and Campus Network Acceptable Use Policy

Asheville-Buncombe Technical Community College provides campus network and computing facilities including internet access for the use of faculty, staff, students, and other authorized individuals in support of the research, educational, and administrative purposes of the College.

The College has extensive information technology resources and systems available for both instruction and administrative applications. Faculty, staff, and students are encouraged to become familiar with College technology resources and systems and to use them on a regular basis. Users are expected to exercise responsible, ethical behavior when using these resources and to adhere to the following guidelines:

1. The internet and associated resources contain a wide variety of material and information. Information available on the internet is not generated or selected by Asheville-Buncombe Technical Community College. The College is not responsible for the accuracy or quality of the information obtained through or stored on the campus network.
2. The creation, display, or transmittal of illegal, malicious, or obscene material is prohibited.
3. Asheville-Buncombe Technical Community College will not be liable for the actions of anyone connecting to the internet through College facilities. All users shall assume full liability (legal, financial, or otherwise) for their actions.
4. The user is responsible for complying with laws protecting software or other accessed information. Downloading programs and files may violate United States copyright laws that protect information and software. Although the internet provides easy access to software distributed by companies on a trial basis, this does not mean that the software is free or that it may be distributed freely. All files downloaded from a source external to the campus must be scanned for viruses.
5. Because of the insecure nature of transmitting files electronically, no right of privacy exists with regard to e-mail, internet sessions, or electronic file storage and transmission. When sending or forwarding e-mail over the campus network or the internet, users shall identify themselves clearly and accurately. Anonymous or pseudonymous posting is expressly forbidden.
6. Asheville-Buncombe Technical Community College computing and telephone facilities maintain usage statistics in archived log files for the purpose of monitoring system performance and usage patterns. Users must not perform tasks they would not want logged.
7. College employees may make reasonable personal use of the campus network, e-mail, and the internet as long as the direct measurable cost to the public is none or is negligible, and there is no negative impact on employee's performance of duties.
8. All users of the internet by way of College facilities must comply with all relevant policies and procedures of the College.
9. Use of the internet for commercial gain or profit is not allowed from a College site.

Failure to comply with any of these provisions will result in disciplinary action as provided for under the disciplinary policies and procedures of the College.

A-B Tech provides access to the internet by way of the State of North Carolina Wide Area Network. As such, all users are subject to the governing policies established by the North Carolina State Chief Information Officer in addition to the above A-B Tech Internet and Campus Network Acceptable Use Policy. The current policy governing use of the North Carolina Wide Area Network and the internet can be reviewed at: **www.scio.state.nc.us/sitPolicies.asp**.

## Guidelines for Digital Communications

In E-communication (email, Discussion Forums, Blogs, etc) the traditional verbal and non-verbal cues such as tone, inflection, body language, and gestures are missing and thus the chances of misunderstanding or miscommunication are increased. The following etiquette for online communication will foster the clear and invitational style of communication we all desire and expect from one another. Guidelines are listed below.

1. Avoid ad hominem attacks. Attack ideas, not the person expressing the ideas.
2. Avoid personal agendas. If you have issues with individuals or college policies and procedures, pursue these through the appropriate college channels.
3. Be cautious with sarcasm and humor. Others may not share your sense of humor and expressions you find commonplace may be offensive to others.
4. Be cautious with the content of your communication. Assume the content of what you write may be forwarded or become public.
5. Do not use profanity or obscenities. This is unprofessional and inappropriate for any college related communication.
6. Respect the diversity of ideas and opinions. View your communication as part of a panel discussion and not a pulpit.
7. Provide a sound rationale for your position. Appeal to facts and reasons to defend your position. Avoid emotive language.
8. Verify the information you pass on. This will prevent chain-letter and gossipy-type mischief.
9. Do not use all upper case letters. It is the equivalent of screaming.
10. Do not use all lower case letters. It is the equivalent of mumbling.
11. Proofread and edit messages before sending. Do not rely solely on spell check.
12. Use proper grammar and syntax. Avoid sentence fragments and errors in paragraphing and punctuation.

# Economic & Workforce Development/ Continuing Education

The Economic & Workforce Development/ Continuing Education Division offers classes and training to support the economic development of the community and its citizens. Needs for higher academic education, employment skills, basic educational skills, job training and retraining, personal growth and development, and business and economic development are continually identified through a variety of assessments.

Different learning approaches to meet community needs involve traditional classroom instruction, individualized instruction, computer-assisted learning, community-based learning centers, on-site classes and training for business and industry, and apprenticeships. Also available is assessment, consultation, and technical assistance for individuals, businesses, industries, and public and private sector agencies.

The educational offerings of the Economic & Workforce Development/ Continuing Education Division are built on the concept of lifelong learning. Classes and training are provided in different formats, at a variety of times, and at locations where the needs of students can conveniently be met.

Some of the Economic & Workforce Development/ Continuing and Off-Campus Education Programs are coordinated with the Workforce Investment Act (WIA) or the WorkFirst programs of other agencies. These and other similar programs represent joint efforts to bring education and training services to the community.

Training and course work may carry Economic & Workforce Development/ Continuing Education Unit (CEU) credit; these unit credits are not part of college curriculum diploma or degree programs. Curriculum courses providing college diploma and degree credits are offered at off-campus sites through the coordinated efforts of Economic & Workforce Development/ Continuing Education Program Executive Directors, Directors, Deans and Department Chairs of the four curriculum academic divisions of the college.

The Economic & Workforce Development/ Continuing Education Division provides programs for adults age 18 or older. Minors can enroll for some classes with special permission and if space allows.

## Costs

Costs for Economic & Workforce Development/ Continuing Education classes vary. Fees may be charged for books, materials, supplies, and accident insurance. For some classes, North Carolina residents age 65 or older are exempt from registration fees. There are no registration fees for Basic Skills classes.

## Course Repetition

There is a limit to the number of times a student may enroll in a particular Economic & Workforce Development/ Continuing Education class. The Economic & Workforce Development/ Continuing Education Course Repetition policy guides enrollment in selected types of classes.

Occupational Training courses may not be taken more than twice within a five-year period without the student paying the full cost of the course as determined by the College. Students may repeat Occupational Training courses more than once if the repetitions are required for certification, licensure, or recertification.

A course other than Occupational Training may not be taken for more than two consecutive terms without a break of at least one term. Students who are enrolled in Adult Basic Education (ABE), General Education Development (GED), or Compensatory Education courses may continue in the course as long as reasonable educational and/or social progress is being made according to the goals of the program. Students in Compensatory Education classes will be reviewed after no more than two years to determine whether they will continue in the program.

The College reserves the right to modify this policy in general or relative to a given course as necessary to meet the needs of the College and its students.

## Services

Economic & Workforce Development/ Continuing Education needs are addressed in six domains:

1. Basic Skills
2. Community Service Programs
3. Emergency Services Academy
4. Entrepreneurial Ventures and Business Incubator
5. Occupational and Public Service Training and Human Resources Development
6. Workforce Development

## Basic Skills

The Basic Skills Programs provide opportunities for upgrading reading, mathematics, english, and life skills. Assessment is a basic part of all these programs. The Adult Basic Education (ABE) Program supports academic remediation in reading comprehension, mathematics, and language skills and provides pre-GED instruction.

The General Education Development (GED) Program offers instruction in five subject areas in preparation for taking the high school diploma equivalency (GED) test. Instruction for Basic Skills Programs can be delivered on campus and at community learning centers or workplace sites when there is sufficient demand.

At the GED Testing Center, students can take the tests of General Educational Development (GED). The tests cover:

- Writing Skills
- Mathematics
- Social Studies
- Science
- Reading

With passing scores, the student earns a GED which is awarded by the North Carolina Community College System. This certificate is generally accepted on an equal basis with a traditional diploma for employment, promotion, or further education.

To be eligible for testing, an applicant must:

- be at least 18 years old (16- and 17-year-olds may test with special permission).
- be a current North Carolina resident.
- be certified to test through the GED Preparation Program (Call 254-1921, Ext. GED).
- pay the testing fees ($7.50 for initial testing and $2.50 for retesting in Writing Skills) at the Continuing Education Business Office, Pines Building, Room 205D or the Business Office in the Bailey Student Services Center and be prepared to present evidence of payment to the test center personnel.

English as a Second Language (ESL) is intended to improve the English reading, speaking, and writing skills of non-native students. American culture, history, and life skills are also taught.

The Compensatory Education Program is an academic program specifically for adults with mental retardation. The program features lessons in community living, consumer education, health, language, mathematics, social science, and vocational education. Emphasis is placed on helping each student become as independent as possible, primarily by improving academic, social, survival, and independent-living skills. Traumatic Brain Injury (TBI) classes are provided to improve and enhance the skills of adult survivors of traumatic brain injuries. Classes focus on memory, social, and time-management skills as well as community living, consumer education, health, language, and math.

## Community Service Programs

The Community Service Programs provide courses, seminars and activities that contribute to the community's overall cultural, civic, and intellectual growth. Courses are designed to assist adults in the development of new skills, or improvement or upgrading of existing ones. With hundreds of classes and events every year, these programs provide lifelong learning opportunities to community members of Buncombe and Madison County. The program provides a variety of art classes, from abstract painting to stained glass. The language component includes Mandarin Chinese, French, Italian, Japanese, and Spanish. Dance classes, from Ballroom to Salsa, bring hundreds of couples to the campus each year. Practical skills classes such as upholstery, sewing, and quilting add to the diversity of the courses offered.

## Entrepreneurial Ventures and Business Incubation

The Incubator is a model which allows entrepreneurs a "jump start" for their business. This program is a dynamic process that provides: physical space for one's business, consulting and technical assistance, access to business services and equipment, technology support and guidance in obtaining financing. In addition, there is a student business incubator available for current A-B Tech students.

The Business Incubator houses the BioBusiness/BioNetwork Center, the Blue Ridge Food Venture, the Technology Commercialization Center, and the Global Institute for Sustainability Technologies. These centers provide workforce development and entrepreneurial-ship training. The Incubator also has partners in six countries who provide research for local companies seeking to export their products. Additional assistance is provided through community volunteers such as attorneys, accountants, and CPAs who provide pro-bono sessions for incubating clients.

The Small Business Center/Business Incubator provides free one-to-one counseling and advising services to existing and potential small business owners. In addition, a variety of seminars and special events are sponsored by the Small Business Center to assist entrepreneurs with all aspects of running a business. A professional services office is also available in which experts from the legal, accounting, marketing, management and technology fields provide advice to business clients on a pro-bono basis.

## Occupational and Public Service Training Programs

**Occupational Programs** provide education and training for individuals to prepare for new or different employment and to upgrade the skills of individuals in their current employment. These opportunities are available through single courses or a series of courses specifically designed for an occupation. A significant number of these courses are offered to meet licensure or certification requirements. Other offerings include programs for the following occupational areas: effective teacher training, emission standards "OBD," equine management, notary public, biowork, public safety education, Nurse Assistant I and II, and Dental Radiography.

Students in the **Decorative Painting Techniques and Restoration Program** train in all aspects of surface treatments and decoration. The content of the program deals with traditional finishes in historic buildings as well as new work and the development of individual styles and techniques. Students learn the physical and chemical nature of building materials, methods of stenciling, gilding, ornamental plaster work, marbling, woodgraining, wall glazing, paperhanging and the preparation of old and new surfaces to receive decorative treatments. Related job opportunities include residential and commercial decorating, church restoration, picture frame and architectural gilding. This 44-week program starts in January and ends in December. The foundation level covers tools and equipment, materials, drawings and geometric shapes, calculations, and surface preparation. The advanced level covers specifications, decorative treatments, and color.

The **Computer Training Department** provides hundreds of offerings each year. A-B Tech works to meet the needs of those in the marketplace who want to master emerging technologies, gain the professional certifications that allow them to advance in their professions, or enter a field that promises continued growth. For administrative, technical, customer service and professional workers alike, computer skills are a constant. A-B Tech's programs provide training in a variety of disciplines to help North Carolina's workforce grow and learn. From basic courses to intensive professional programs, A-B Tech provides critical and thorough instruction in areas of software, hardware, and peripherals. Designed for both beginning students and professionals seeking to update their skills, A-B Tech courses and programs cover such timely subjects as administrative and financial software, relational database technology, software-specific training programs, operating systems, and beyond. Courses are offered in traditional instructor-led, online, and hybrid formats.

The **Emergency Services Academy (ESA)** was created to establish a single point of contact for students, college personnel, and the community in the fields of Fire Service, Law Enforcement, and Emergency Medical Science. The Academy provides training in both curriculum and continuing education. A significant number of these courses are offered to meet licensure or certification requirements for employment in Fire and Rescue, Criminal Justice and Law Enforcement, and Emergency Medical Science. The Emergency Services Academy also offers numerous specialized classes that meet qualifications and standards that are required by their governing agencies.

The **Human Resources Development (HRD) Program** provides short-term pre-vocational training and counseling designed to help unemployed and underemployed adults successfully enter the workforce with additional education. Instruction focuses on the following topics:

- Career assessment
- Development of a positive self-concept
- Development of employability skills
- Development of communication skills
- Development of problem-solving skills
- Awareness of the impact of information technology in the workplace

**Technical and Industrial Training Programs** provide education and training for individuals to prepare for new or different employment in industrial or technically challenging fields and to upgrade the skills of individuals in their current employment. These opportunities are available through single courses or a series of courses specifically designed for a business, industrial, or technical occupation. Many of these courses are offered as apprenticeships or to meet certification requirements for employment in careers such as electrical journeymen, building, electrical, mechanical or plumbing inspection and code updates. Additional course offerings include: carpentry, welding, masonry, ceramic tile, OSHA safety management and supervision.

## Workforce Development

The **Department of Workforce Development** provides programs and training that supports local business and industry. The Department ties the College to the associated efforts of local, regional, and state agencies for economic and workforce development.

The **Customized Training Program** supports the economic development efforts of the State by providing education and training opportunities for eligible businesses and industries. The program was developed in recognition of the fact that one of the most important factors for a business or industry considering locating, expanding, or remaining in North Carolina is the ability of the State to ensure the presence of a well-trained workforce. The program is designed to react quickly to the needs of businesses and to respect the confidential nature of proprietary processes and information within those businesses.

PURPOSE

The purpose of the Customized Training Program is to provide customized training assistance in support of full-time production and direct customer service positions created in the State of North Carolina, thereby enhancing 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.

ELIGIBILITY

Those businesses and industries eligible for support through the Customized Training Program include Manufacturing, Technology Intensive (i.e., Information Technology, Life Sciences), Regional or National Warehousing and Distribution Centers, Customer Support Centers, Air Courier Services, National Headquarters with operations outside North Carolina, and Civil Service employees providing technical support to US military installations located in North Carolina.

In order to receive assistance, eligible businesses and industries must demonstrate two or more of the following criteria:

- The business is making an appreciable capital investment;
- The business is deploying new technology;
- The business is creating jobs, expanding an existing workforce, or enhancing the productivity and profitability of the operations with the State; and
- The skills of the workers will be enhanced by the assistance.

Resources may support training assessment, instructional design, instructional costs, and training delivery for personnel involved in the direct production of goods and services. Production and technology support positions are also eligible for training support.

Full-time probationary employees of qualified Customized Training companies are eligible for training delivered by the community college.

The use of Customized Training funds requires that trainees are paid by the company for all time during training hours.

The **Quality Initiatives Program** provides training and technical assistance in Productivity improvement, total quality practices and international quality standards for businesses, healthcare providers, and public and private sector agencies. Offerings include Six Sigma, Lean, basic quality skills, statistical process control, and all phases of ISO 9001:2000 implementation. The program also partners with the American Society for Quality to provide quality course offerings. Additionally, a resource center for quality information and a lending library make specialized books and videos available.

The Workforce Development Department also offers specialized training, certification and certification preparatory courses including:

- APICS Certified Production and Inventory Manager (CPIM) Certification Preparation: CPIM certification prepares those in the fields of Production and Inventory Management, Operations, Supply Chain Management, Procurement, Materials Management and Purchasing to increase knowledge and skills, improve organizational efficiency, reduce cost and enhance credibility among their peers.
- Building Operator Certification: Designed for Maintenance Technicians and/or Building Operators of large facilities, this course focuses upon achieving reduction in energy usage and cost as well as enhancing sustainability.
- Escort Vehicle Operator Certification and/or Recertification: These courses satisfy the requirements set by the North Carolina Department of Transportation to certify Oversize - Overweight load escort vehicle drivers. Course components consist of defensive driving, escort driver requirements, skills training and examinations.

- Fundamentals for Advanced Manufacturing Training: This training course is designed to narrow the skills gap between what skills manufacturers indicate job applicants have and what skills manufacturers actually need them to have. The curriculum includes safety, problem solving, math, measurement, blueprint reading, quality concepts, lean principles, lean simulation, and CNC interfaces. A strong emphasis is also placed on communications skills, interpersonal skills, and teamwork.

Workforce Development's additional training opportunities include but are not limited to the following:

- Forklift Operation and Safety
- Blueprint Reading
- OSHA 10 Hr and 30 Hr General Industry Standards
- OSHA 10 Hr and 30 Hr Construction Standards
- Arc Flash NFPA70E
- CPR/ First Aid/Blood Borne Pathogen Certification and/or Recertification



# General Admission Procedures

Asheville-Buncombe Technical Community College has an open door admission policy. High school graduation or equivalence is normally required for admission to any curriculum; however, there are a few programs for non-graduates 18 years of age or older. The College accepts applications continuously throughout the school year. Early application is advised for many programs.

Individually selected classes may be taken by unclassified students, providing the prerequisites have been met. After accumulating 20 hours, unclassified students must obtain a signature from the Vice President for Student Services in order to confirm further educational plans.

Placement into specific courses is based upon standards that will help to assure the student's success. Students who do not yet possess the background required for these courses will be enrolled in developmental courses designed to provide this background.

Persons wishing to enroll in a curriculum program at the College must complete the entire application process and meet the following requirements:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education. Transcripts from previously attended colleges must also be obtained if transfer credit is desired.
3. Persons applying for admission into all degree and diploma programs are required to take the Accuplacer Test or submit acceptable SAT/ACT scores earned within the preceding three years. Requests for reasonable accommodations or test exemption by transfer credit will be reviewed individually. Alternate testing formats will be made available to individuals with disabilities upon request to the Disability Services Counselor.
4. Admission to selected allied health programs is competitive. Please visit or contact the Bailey Student Services Center for the application process and criteria.

**www.abtech.edu/Student_Services/admissions/allied_health.asp**

5. A complete physical examination may be required by some programs but only after the student is admitted.

Upon completion of this procedure, the student may be accepted unconditionally or provisionally into the program. Provisional acceptance indicates that developmental classes are necessary; this status changes to unconditional acceptance once the developmental classes are completed and the student notifies his or her Academic Advisor.

## Competitive Allied Health Programs

Admission to seven of the Allied Health curricula is competitive among qualified applicants according to established criteria. There is a limited application period. Competitive Allied Health programs include Associate Degree Nursing, Dental Assisting, Dental Hygiene, Medical Sonography, Practical Nursing, Radiography, and Surgical Technology. Applicants are selected for admission to these programs based upon special criteria. Selection criteria vary for each program. The exact admissions evaluation criteria for each competitive Allied Health program can be found in the Admissions section of the college web page at **www.abtech.edu**. The printed version is available in the Bailey Student Services Center. The criteria are revised and updated annually.

## Placement Testing

The purpose of placement testing is to match the academic readiness of the incoming student with the academic requirements of the curriculum. Persons applying for admission into all degree and diploma

programs are required to take the Accuplacer Test. Students who are unclassified (not desiring to be enrolled in a major) will need to take the placement test if they desire to take a mathematics, English, reading class or any course for which math or English are prerequisites. Alternate testing formats will be made available to individuals with disabilities upon request from the Disability Services Counselor. Documentation of disability will be required prior to the establishment of accommodations for placement testing.

All students, except those applying to limited enrollment programs in the Allied Health division, may waive the placement testing requirement if they submit documentation of acceptable SAT, ACT, or other state-approved placement test scores which have been earned within the preceding three years. Transfer credit received from a regionally accredited institution for first-level English and math courses will also be accepted in lieu of placement testing. The student must submit an official transcript to receive transfer credit and to officially waive the need for placement testing. Students applying for admission to limited enrollment Allied Health programs should consult the program's admissions brochure for detailed information about placement testing for the program of choice. These publications are available in the Bailey Student Services Center.

Placement testing preparation materials are available on the student page of the college website. The electronic brochure provides information on each of the placement testing sections as well as a sample test. Students may register for the placement test online at http://placementtesting.abtech.edu. Students must present a picture I.D. to take the placement test. Placement testing is available both day and evening hours and the results are provided to the student by an Academic Advisor immediately after the student completes the tests. Based on placement scores, a student will be placed directly into College English and math or into one of the developmental studies courses that are designed to prepare the student for entry into his or her chosen field of study. To support student success, students are required to take the courses into which they are placed.

#### Adult Basic Education Within Basic Skills Department Student Status

Students who place into Adult Basic Education reading will be allowed to enroll in College courses only after they have received appropriate remediation through the Adult Basic Skills program. Students who test into Adult Basic Education language and mathematics must also receive appropriate remediation prior to enrolling in college courses.

Students who place into Adult Basic Education level math only or Adult Basic Education language only will be allowed to take Developmental Studies and/or curriculum classes with approval of their academic advisor.

## Transfer, Credit-by-Exam, Articulated, and Advanced Placement Credit

#### Transfer Credit from Other Institutions.

Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other post-secondary institutions accredited by a regional accrediting agency. Applicants who seek transfer credit should make regular application to the College No transfer credit will be granted for work below a "C." Transfer credit for developmental courses will only be granted if the course is a semester course taken at another college in the North Carolina Community College System. Transfer credit will be awarded for course work without assigning grades or quality points. Computer information/technology and related courses must be five years or more recent upon point of transfer. Proficiency credits from other institutions will not be accepted. No more than one-half of the credit hours required in a program may be earned by transfer credit. If any course is taken for credit after transfer credit has been awarded, and a grade of A, B, C, D, or F is earned, it will replace the transfer credit. A student who must repeat a course may take it at another institution and transfer it to A-B Tech according to the guidelines above. Credit may be awarded for appropriate military courses. If a student submits a transcript from a foreign university, it will be the student's responsibility to provide accurate notarized translations of (a) the transcript, (b) course descriptions, and (c) the grading system. Credits will be evaluated in the context of the current catalog.

Students transferring into the Associate in Arts, Associate in Science, or Associate in Fine Arts program who have transfer credit from colleges other than the North Carolina Community College System (NCCCS) or the institutions in the University of North Carolina System should speak with their advisor regarding eligibility for the Articulation Agreement between the universities and NCCCS. Students who have quarter courses will not be eligible for the Comprehensive Articulation Agreement. Transcripts of these students will be evaluated on a course-by-course basis.

Students transferring into the A.A. or A.S. program who have completed the general education core of 44 semester hours with the proper distribution of hours, a "C" or better in all courses, and an overall GPA of 2.0 will be given credit for the general education core. Students transferring into the AFA program who have completed the general education core of 28 semester hours with the proper distribution of hours, a "C" or better in all courses, and an overall GPA of 2.0 will be evaluated by the university to which they transfer on a course-by-course basis.

#### Credit by Examination

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar College level credits, record of military study,

certification or license, standardized test scores, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Student Records and Registration Office or from the website. This test must be administered immediately after the 10 percent point in the semester.

Examinations are comprehensive and must be approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average ("A" or "B"). A grade of "A" or "B" will be posted on the transcript of the student who successfully completes the examination. The decision of the examining instructor is final.

No student may request a second test for Credit by Examination in the same course or request Credit by Examination in a course after receiving any recorded grade for that course. Exceptions must have approval of the Vice President for Instruction.

Because of specific requirements, credit for certain courses may not be received through Credit by Examination. Students who request Credit by Examination must:

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on part-time basis. There is no extra charge for full-time students who are taking at least 16 credit hours.
2. Present evidence of proficiency, complete the written request form, and have the request approved prior to the 10 percent point of the semester.
3. Remain enrolled and attend class until the examination is administered. During this period, students who have written approval for the exam may attend class without purchasing textbooks and materials. If books are purchased and returned for refund, they must be in new condition.
4. Students who are very confident of passing the exam may request a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and will be awarded a grade of "A" or "B" for the course. Receiving credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by examination must remain in the class and complete all course requirements to earn credit at the end of the semester.
7. Students who receive financial assistance of any type are required to inform the director of their assistance program that they are seeking credit by exam. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination.

Any exceptions to these procedures must have prior written approval by the appropriate Department Chairperson, Division Dean, and the Vice President for Instruction.

#### Articulated, Advanced Placement, and Continuing Education Credit

**High School Articulation and RAVE**. College credit may be awarded for high school courses if conditions of the North Carolina High School to Community College Articulation Agreement or Regional Articulation in Vocational Education (RAVE) are met. Students must submit the RAVE request form to the Director of Admissions along with the high school transcript.

**AP and CLEP**. College credit may be awarded if appropriate conditions are met by Advanced Placement (AP) or College Level Examination Program (CLEP) test scores. A-B Tech academic credit will be granted to enrolled students who receive scores of 3 or higher on the AP tests offered by the College Board. CLEP is granted for scores of 50th percentile or higher. AP and CLEP credit accepted at other post-secondary institutions is not automatically transferred to A-B Tech but is reviewed when scores are received by the Director of Admissions in the Bailey Student Services Center.

**Continuing Education**. Continuing education credits that lead to a credential or certification may be considered for course equivalency. Department chair approval is required, and the student must be enrolled in the program for which he or she is seeking credit.

## International Applicants

A-B Tech has been approved to issue I-20 forms for qualified international applicants seeking diplomas or associate degrees in F-1 or M-1 status. International applicants must show proficiency in the English language and graduate from a secondary school that is equivalent to secondary schools in the United States. Both academic records and documentation of financial support are important factors in the admissions decision for all applicants from outside the United States and those holding non-immigrant visas in the U.S.

International applicants should submit all admission credentials together. A written admissions application, international application supplement, TOEFL scores, official high school transcripts and English translations (if applicable), college transcripts, and English translations (if interested in transfer credit), and affidavits of financial support with supporting documentation are all necessary for an admission decision.

To demonstrate English proficiency, international applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL). The applicant must score at least 133 on the computer-based test, 450 on the paper-based test, or 60 on the internet based test(with no less than 15 on any section). Applicants already in the Asheville area may substitute the Accuplacer Placement Test, which can be taken at A-B Tech. Applicants must score a minimum of 52 on the reading section and 53 on the sentence skills to demonstrate English proficiency.

International applicants must also certify their ability to pay for out-of-state tuition, fees, books, supplies, transportation, and living expenses for at least one full year of study. Medical insurance is not required at this time but is highly recommended for all international applicants.

International applicants should contact the International Student Advisor for International Students in the Bailey Student Services Center for further information about admission. Information, including all necessary application materials and estimated cost of attendance, are also available online at **www.abtech.edu/Student_Services/Admissions/international.asp**. E-mail inquiries should be addressed to: rhowell@abtech.edu.



# Tuition and Expenses

## North Carolina Residency

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that a legal resident must have maintained domicile in North Carolina for at least the 12 months immediately prior to classification as a resident for tuition purposes. The student cannot qualify for in-state tuition if he or she is claimed as a dependent by a parent or guardian who is not a N.C. resident.

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are being employed, paying taxes, having a current North Carolina driver's license, and voting in the state. Anyone having a question regarding resident status should contact the Bailey Student Services Center staff or the Director of Admissions.

## Student Activity Fees

The student activity fee will be charged each semester based upon the number of credit hours taken during the day at the Asheville campus. The student who enrolls for nine or more on-campus day credit hours will be charged a student activity fee of $14.00 for the fall and spring semesters and $10.00 for the summer semester. The student who enrolls for eight or fewer on-campus day credit hours will be charged a student activity fee of $10.00 for the fall and spring semesters and $6.00 for the summer semester.

## Computer Use and Technology Fee

For Curriculum students, a computer use and technology fee will be charged each semester based upon the number of credit hours taken at the rate of $1 per credit hour to a maximum of $16.

## Tuition*

**Fall, Spring, and Summer Semester:**

| | |
|---|---|
| N.C. residents per semester | $800.00 |
| Nonresident of N.C. (16 or more credit hours) | $3,860.80 |
| Part-time N.C. residents per credit hour per semester | $50.00 |
| Nonresident of N.C. per credit hour per semester (fewer than 16 credit hours) | $241.30 |
| Return Check Charge | $15.00 |

North Carolina residents 65 years of age and older are exempted from the payment of curriculum tuition and registration fees for some Continuing Education classes.

**Tuition is subject to change by the state legislature.*

## Student Insurance

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to ensure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all curriculum students will be REQUIRED to subscribe to such coverage. The only exception would be students taking only off-campus courses. The cost of accident insurance to the student will be approximately $2.00 per semester.

## Additional Costs

Beginning students should be prepared to incur additional estimated expenses during the academic year (two semesters and summer term) as follows:

**Allied Health and Public Service Education**

Books . . . . . $400-1,400
Supplies . . . . . $200-1,100

**Arts and Sciences: A.A., A.S, A.F.A.**

Books . . . . . $600-900
Supplies . . . . . $100-200

**Business and Hospitality Education**

Books . . . . . $800-1,500
Supplies . . . . . $200-1,200

**Engineering and Applied Technology**

Books . . . . . $600-900
Supplies . . . . . $150-1,100

The cost of books and supplies varies from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, student kits, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, and pins. Students will incur most of the supply costs for their curriculum during the first semester of study. Students are encouraged to consult with their department chairperson for actual costs of supplies for their curriculum. Students should consult with their department chairperson or a member of the Math Department prior to the purchase of a calculator for use in class.

## Tuition and Fees Refund Policy

The tuition policy is set by the State of North Carolina and is subject to change. A 100% refund shall be made if the student officially drops prior to the first day of classes of the term as noted in the College Calendar.

Also, a student is eligible for a 100% refund if the class in which the student is registered is canceled.

A 75% refund shall be made if the student officially drops from the class(es) prior to or on the official 10% point of the term. Refer to the College calendar (pp. xiii-xiv) for 10% dates for each semester. Insurance, technology, and student activity fees are NOT refundable. Federal regulations, if different from above, will overrule this policy.

Second minimester and other classes that start one week or more after the regular start of the term may be dropped through the day prior to the start of the class for a full refund. A 75% refund will be made if the student officially drops prior to the 10% point of the class.

Only hours dropped below a total of 16 credit hours are considered for a refund. For example, a student registered for 18 hours who drops a 4-hour class before the 10% point of the term, leaving a 14-hour schedule, will be refunded 75% of 2 credit hours.

Any requests for exceptions must be presented to the Vice President for Student Services.

## Tuition Refund Procedure

To be eligible for a tuition refund the student must:

1. Register and pay tuition and fees.
2. Officially drop the class on or before the 10% point of the term in one of the following ways:
   a. By submitting in person to any Registration Center (Bailey Student Services Center, Transfer Advising Center, Records & Registration, Madison Campus Office) a Drop/Add Registration Change Notice during business hours.
   b. By having your advisor process the drop. You are responsible for ensuring this has been done.
   c. By using online Registration Drop/Add, if permitted.

# Student Rights, Responsibilities, and Due Process

## Code of Student Conduct

Almost 26,000 students, faculty, and staff are part of the A-B Tech family. Every year hundreds of people graduate from the College, and hundreds of new freshmen take their places. To protect all these students and employees from the irresponsible actions of others, the College has adopted basic rules of student conduct.

Students who have been charged with a violation of these rules may be assigned consequences based upon the seriousness of the offense. A hearing will be conducted by the Vice President for Student Services. In some situations, a Threat Assessment Team may review and make recommendations to the Vice President for Student Services prior to a hearing. If a student engages in criminal activity or demonstrates threatening behavior that constitutes a clear and present danger to the physical and/or emotional well being of the student and/or other students, faculty and staff, the Vice President for Student Services shall immediately suspend the student and remove him/her from campus

for no more than ten school days pending a hearing. In this situation, the Vice President for Student Services must convene a Team. See Threat Assessment Policy.

Consequences for violations include verbal warnings, written warnings, disciplinary probations, particular consequences adapted to the violation, suspensions, expulsions and recommendations by a Threat Assessment Team. Any disciplinary decision rendered by the Vice President for Student Services may be appealed to the President.

Any student charged with a violation of the Code of Student Conduct will receive a written copy of the charges and an appointment for a hearing. At a hearing, a student shall receive certain due process rights. It shall be the responsibility of the President or his/her designee to create and amend these rights and list them each year in the A-B Tech catalog.

The following actions are specifically prohibited on this campus under the Code of Student Conduct:

1. **Academic Dishonesty** - You may not deceive any official of the College by cheating on any assignment, examination, or paper. This includes plagiarism, which is the intentional theft or unacknowledged use of another's words or ideas. Plagiarism includes (but is not limited to) paraphrasing or summarizing another's words or works without proper acknowledgement, using direct quotes of material without proper acknowledgement, or purchasing or using a paper or presentation written or produced by another. The faculty at A-B Tech may also consider presenting as original work a paper written for one class to satisfy a requirement in another class to be academic dishonesty.
2. **Alcoholic Beverages** - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.
3. **Animals** - You may not have an animal of any kind on campus. This includes animals left within a vehicle. Working dogs, such as police dogs and Seeing Eye dogs, are permitted.
4. **Damage to Property** - You may not damage property of the College or of any other person working at or attending the College.
5. **Disobedience** - You may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.
6. **Disorderly Conduct** - You may not conduct yourself in a way which will interrupt the academic mission of the College or which will disturb the peace of the College.
7. **Disruption** - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
8. **Drugs** - You may not possess, use, or be under the influence of any narcotic or illegal drug on campus in violation of the laws of the state of North Carolina or of the United States.
9. **False Information** - You may not present to the College or its employees false information; neither may you knowingly withhold information which may have an effect on your enrollment or your status in the institution and which is properly and legally requested by the College.
10. **Assault and/or Battery** - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.
11. **Gambling** - You may not gamble on campus.
12. **Possession of Weapons** - You may not have a weapon of any kind, including a knife, stun gun, or any firearm in your possession on campus. Law Enforcement officers are exempt from this prohibition. This includes facsimiles of weapons.
13. **Professional Conduct** - Various curricula have specific codes of professional conduct for which you may be held accountable, if you are enrolled in those curricula.
14. **Theft** - You may not steal the property of another individual or of the College. Students who are caught stealing will be required to make restitution and may be eligible for civil or criminal prosecution as well as College discipline.
15. **Public Laws** - You may not violate the laws of the state of North Carolina while on campus. Doing so may lead to legal actions as well as campus discipline.
16. **Sexual and Other Unlawful Harassment** - You may not harass any member of the College community, including other students, employees, or other persons on the College campus. This prohibition includes sexual, verbal or physical harassment for any reason including race, color, religion, sex, national origin, disability, veteran's status, creed, sexual orientation, or political affiliation.
17. **Use of the Internet** - The College has an extensive policy for appropriate use of the Internet. Users of the College computers acknowledge the policy whenever they sign on. You may not use the College's access to the Internet for access to sexually explicit material or for downloading music. E-mail accounts are provided for student use; however, no right of privacy exists for use of e-mail.
18. **Tobacco** - You may not use tobacco of any form on campus.
19. **Threats** - You may not engage in any behavior that constitutes a clear and present danger to the physical and/or emotional well being of yourself and/or other students, faculty and staff.

20. **Code of Classroom Conduct** - You may not violate any of the rules pertaining to the Code of Classroom Conduct. It shall be the responsibility of the President or his/her designee to create and amend these rules and list them each year in the A-B Tech Catalog.
21. **Skate Boards and Roller Skates** - Skate boards and roller skates are not permitted to be used on campus.

## Code of Classroom Conduct

A-B Tech is an institution for adult learning. It is a partnership between instructors with the desire to teach and students with the desire to learn. In order to create an appropriate environment for teaching and learning, there must be respect for the instructor and fellow students. Listed below are guidelines for classroom behavior, which the College has established to ensure that the learning environment is not compromised.

1. **Absences**. Inform the instructor in advance if you know you are going to miss class. Also, take responsibility for getting missed assignments from other students. Do not expect that you will be allowed to make up work, such as unannounced quizzes or tests, after an absence. Instructors are not responsible for re-teaching the material you missed because of absence.
2. **Attendance**. You are expected to be in class the entire class time. Do not enter late or leave early. Rare exceptions may be excused, particularly under emergency circumstances, but you should be prepared to explain your tardiness to the instructor after class. Likewise, the need to leave early should be explained to the instructor before class.
3. **Attitude**. You are expected to maintain a civil attitude in class. You may not use inappropriate or offensive commentary or body language to show your attitude regarding the course, the instructor, assignments, or fellow students.
4. **Cell phones and beepers**. You may not receive or send telephone calls, text messages, or pages during class. You are responsible for turning off cell phones, beepers, and other personal communications devices upon entering class.
5. **Conversation**. Do not carry on side conversations in class.
6. **Food, Drink**. You may not have food or drink in class.
7. **Guests**. You may not bring unregistered friends or children to class.
8. **Internet**. In classes where internet access is provided, you may use the internet for valid, academic purposes only. You may not use it for open access to other non-academic sites, which are unrelated to the course.
9. **Other Activities**. You may not work on other activities while in class. This includes homework for other courses or other personal activities.
10. **Personal Business**. You may need to transact personal business with the instructor, asking him or her to sign forms. Plan to do this before instruction begins or after class.
11. **Profanity and Offensive Language**. You may not use profanity or offensive language in class.
12. **Sleep**. Do not sleep in class.
13. **Personal Protective Equipment**. You must properly wear personal protective equipment at all times in any area of the College in which it is required.
14. **Perfumes**. You should avoid wearing strong perfumes of any kind as other students may be allergic to them.

Typically, violations of the Code of Classroom Conduct will be dealt with as minor infractions. However, repetition of minor infractions or other more serious violations of the Code of Student Conduct may lead to removal from the classroom while the matter is resolved and referral to the Vice President for Student Services for disciplinary action.

## Student Rights of Due Process

If you are accused of a violation of the Code of Student Conduct, A-B Tech guarantees you these rights as the matter is resolved:

1. You have the right to written notice of the provision of the Code of Student Conduct, which you are accused of violating, and a summary of the relevant facts.
2. You have the right to a hearing before the Vice President for Student Services.
3. You have the right to review all evidence, including written statements made against you. (Strict rules of evidence do not apply in the hearing.)
4. You may cross-examine witnesses.
5. You may present witnesses and evidence.
6. You may be represented by counsel, if you notify the Vice President for Student Services in advance of the hearing.
7. You have the right to a record of the hearing.
8. You have the right to a written notice of a decision within two days of your hearing.
9. You have the right to appeal any action taken by the Vice President for Student Services to the President. Any appeal must be in writing and be submitted within five days. The decision of the President is final.

## Student and Grade Appeals Policy

If you feel that you have been disciplined unfairly or wish to appeal some other decision that you consider to be unjustified, unfair, or a violation of your rights, then you should appeal that decision. In order to appeal the decision, you should use the Student Appeal Policy, which is summarized below. A complete copy is available from the Vice President for Student Services in the Bailey Student Services Center.

The intention of this policy is that the faculty member or other employee who has been responsible for the act that you consider to be unfair will attempt, in good faith, to resolve the dispute. You are encouraged to discuss the matter with him or her in an attempt to resolve it. If it is not possible to resolve the matter at this level, then you should bring the matter to the attention of the Vice President for Student Services.

The Vice President will hold an informal session to which you and the employee concerned are invited. Every attempt will be made to resolve the matter at that level, even if multiple sessions are required. If the problem is not resolved, then the Vice President for Student Services will inform you of the formal appeals procedure and provide you with an appeal form.

The appeal form must be filled out and returned to the Vice President for Student Services within five days. The appeal form must be signed by the student and the employee involved. It should also be signed by the supervisor or supervisors of the employee involved up the chain of command through the appropriate Vice President. Each of these supervisors may propose solutions to the disagreement which, if accepted by both parties, will result in resolution of the problem. Failure to reach agreement at any level in the appeal process will require that the matter be taken up to the next higher level.

Particular attention will be paid to ensuring that night students can have access to supervisors who are otherwise available during the day hours only.

If the matter remains unresolved through the level of the appropriate Vice President, then you should return to the Vice President for Student Services who will then turn the matter over to the Student Appeals Committee. This Committee, which is composed of two students, two faculty members, a Student Services employee, and a non-teaching professional who will serve as chairperson, is called together by the Vice President for Student Services. The chairperson will conduct the meeting and render a decision which reflects the popular opinion of the Committee. If further appeal is necessary, then the matter is referred to the President whose decision is final. When this policy is used to appeal a disciplinary action taken by the Vice President of Student Services in his or her capacity as the College discipline officer, the appeal will go directly to the President whose decision is final.

Appeals pertaining to grades issued in courses must be initiated with the Vice President for Student Service within six weeks of the awarding of the grade.

As stated earlier, a complete copy of this policy is available from the Vice President for Student Services, and you are encouraged to see him or her if you feel that an appeal is necessary.

## Privacy of Student Records

1. Definitions:
   a. "Directory information" means information contained in an education record of a student that would not generally be considered harmful or an invasion of privacy if disclosed. For purposes of this section, directory information includes: name, address, telephone number, date and place of birth, major field of study, dates of attendance and degrees received.
   b. "Education record" means records that are directly related to a student and maintained by an educational agency or institution or by a party action for the agency or institution.
   c. "Eligible student" means a student who is eighteen years old (or starts attending any postsecondary institution) and has complete control of his or her education records.
   d. "Law enforcement purpose" means enforcing state, local or federal law; referring possible violations of such law to law enforcement agencies or enforcement; or otherwise maintaining the physical security or safety of the school.
   e. "Law enforcement unit" refers to the A-B Tech Campus Police Force which is officially authorized by A-B Tech to:
      • enforce any local, State or Federal law, or refer to appropriate authorities a matter for enforcement of any local, State or Federal law against any individual or organization other than the agency or institution itself; or
      • maintain the physical security and safety of the agency or institution.
   f. "Law enforcement unit record" means any records, files documents and other materials that are:
      • created by a law enforcement unit;
      • created for a law enforcement purpose; and
      • maintained by the law enforcement unit.

      Records created and maintained by a law enforcement unit exclusively for a non-law enforcement purpose, such as a student disciplinary action or proceeding conducted by the education agency or institution, are not law enforcement unit records, even if created and maintained by law enforcement unit personnel.
   g. "Legitimate educational interest" means the need for an individual to know the content of a stu-

dent's education record for purposes of educational related matters (included but not limited to academic and disciplinary issues). For purposes of this section, the personnel of the A-B Tech Campus Police are designated as school officials with a legitimate educational interest in student's education records.

2. In compliance with the Family Educational Rights and Privacy Act of 1974 ("FERPA"), commonly know as the Buckley Amendment, Asheville-Buncombe Technical Community College ("A-B Tech") will not disclose education records concerning its students except for directory information and as otherwise stipulated herein.

   Directory information will be released to anyone who requests it, unless the student specifies in writing to the Student Records and Registration office that his or her directory information be withheld. In such case, no directory information will be released.

3. A parent of an eligible student does not have access to the student's education records. In order for parents to have access to an eligible student's education records, beyond directory information and without written permission from the student, a parent must certify that the student is economically dependent as defined in Section 152 of the Internal Revenue Code of 1954. If a parent can prove dependency to the Student Records and Registration office by showing a copy of the parent's current tax report form or another acceptable report of current dependency, then the parent may have total access to the student's education records.

4. A-B Tech will release a student's educational records without his or her approval only under the following circumstances:

   • to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.

   • to officials of another college or university in which a student seeks to enroll.

   • to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.

   • to persons involved in granting financial aid for which the student has applied.

   • to testing and research organizations conducting certain studies for or on behalf of the school.

   • to accrediting organizations.

   • in compliance with a court order or lawfully issued subpoena.

   • in very narrowly defined emergencies affecting the health and safety of the student or other persons.

   • to state and local authorities, within a juvenile justice system, pursuant to specific state law.

   • to parents of eligible students under the provision of paragraph 2 above.

5. Law enforcement unit records are not education records and may be disclosed by the AB Tech Campus Policy Force to College Officials, other law enforcement personnel and court officials without parental consent. Parents do not have an automatic right to inspect law enforcement unit records. Public inspection of law enforcement unit records is subject to the Chapter 132 of the North Carolina General Statutes (the North Carolina Public Records Act). All public records requests for law enforcement unit records must be reviewed by the College Attorney for legal compliance.

6. Questions regarding student records should be directed to the College's Student Records and Registration office.



# Academic Procedures

## Classification of Students

**Full-time student**: A student enrolled for 12 or more credit hours during fall and spring semesters and 9 or more credit hours during the summer session.

**Part-time student**: A student enrolled for fewer than 12 hours during fall or spring semesters or fewer than 9 credit hours during summer session. (Please note that financial aid recipients registered during the summer will need 12 credit hours for full Pell awards.)

#### Declaring, Changing, or Adding Second Majors

In order to declare a major, change majors, or add a second major, the student needs to see an Academic Advisor in Student Services who will complete a change-of-major form indicating the new major or the second major. The catalog in effect at the time of this declaration will be the catalog recorded for this major.

## Class Attendance

Regular and punctual class attendance is expected of all students for them to achieve their potential in class

and to develop desirable personal traits necessary to succeed in employment. Instructional time missed is a serious deterrent to learning. Students are responsible for fulfilling the requirements of the course by attending and completing course assignments. An accurate record of class attendance will be kept.

If instructional time is missed for excusable reasons, the student will be permitted to make up work to the extent possible. Because of the nature of some learning experiences, especially clinics, labs and shops, it is difficult, if not impossible, to duplicate the work of the class. In some courses, absence or tardiness of an individual may be a major disruption to the performance of others in the class or an inconvenience to other organizations such as hospitals and clinics. The faculty may develop guidelines for advance notice of absences, makeup of work, etc. Students will be informed of guidelines at the beginning of the course.

**To receive course credit, a student should attend a minimum of 80% of the contact hours of the class. Upon accumulating absences exceeding 20% of the course contact hours, the student may be dropped from the class and will be awarded a grade of "U," unless the student follows the official withdrawal procedure before the grade of "U" is recorded. (To receive course credit when enrolled in an Allied Health program*, a student should attend a minimum of 90% of the contact hours of all major area* courses. Upon accumulating absences exceeding 10% of the contact hours, the student may be dropped from the class and will be awarded a grade of "U", unless the student follows the official withdrawal procedure before the grade of "U" is recorded.) The 90% minimum attendance requirement applies to these major area course prefixes:**
***NUR, CAT, DEN, EMS, MED, MLT, MRI, SON, PBT, RAD, SUR and VET.**

**To receive course credit when enrolled in a Cosmetology program, a student should attend a minimum of 95% of the contact hours of all major area courses. Upon accumulating absences exceeding 5% of the contact hours, the student may be dropped from the class and will be awarded a grade of "U", unless the student follows the official withdrawal procedure before the grade of "U" is recorded. The 95% minimum attendance requirement applies to the major area course prefix of COS.**

A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

It is the joint responsibility of the student and instructor to discuss attendance patterns that will endanger the success of the student in the course. If it appears that a student will not be able to complete a course successfully, the instructor may advise the student to withdraw no later than the official withdrawal date at the 75% point of the class.

## Prerequisites and Corequisites

Before enrolling in a course with prerequisite requirements, students must satisfactorily complete the prerequisite course(s). Corequisite courses should be taken the same semester. Exceptions may be approved by the appropriate department chairperson and will be documented in the student's academic file.

## Course Substitutions

Course substitutions must be approved by the program area dean and forwarded to the registrar.

## First-Year Seminar

The First-Year Seminar (ACA 115) introduces students to A-B Tech and its history and culture while developing knowledge and skills that lead to a successful College experience. Students who enroll in an associate degree program or a diploma program leading to an associate degree must enroll in ACA 115 within their first two semesters of enrollment. Any student who places into more than one developmental course must enroll concurrently in ACA 115. Academic Advisors may approve exemptions based on College academic procedures.

## Schedule Adjustments

### Dropping/Withdrawing from a Class

In order to officially drop or withdraw from a course without academic penalty, the student must complete the appropriate form and submit it to the Records and Registration Office by the deadline.

The student may drop classes through the first 10% of the term. (For full semester classes the 10% point occurs on the eighth day. For minimesters, the 10% occurs on the fourth day. For Summer Session, the 10% occurs on the fourth or fifth day for 8- and 10-week sessions respectively.) A class may be dropped in one of the following ways:

a. By submitting in person to any Registration Center (Bailey Student Services Center, Transfer Advising Center, Records & Registration, Madison Campus Office) a Drop/Add Registration Change Notice during business hours.

b. By having your advisor or Academic Advisor process the drop. You are responsible for ensuring this has been done.

c. By using online Registration Drop/Add, if permitted.

In the case of drops, the course(s) will not be included on the transcript.

After the 10% point of the term, a student wishing to withdraw from a class must complete a withdrawal form. A student receiving financial aid must obtain a signature of a financial aid officer. Anyone receiving veteran's benefits must obtain signatures from the instructor(s) and the Veteran's Affairs Advisor. All withdrawal forms must be received by the Bailey Student Services Center, Academic Advisor, Records and Registration Office, Transfer Advising Center, or Madison Campus Office during the first 75% of the term. (For full semester classes the 75% point occurs at the end of the 12th week. For minimesters it occurs at the end of the sixth week. For Summer Session it occurs in the middle of the seventh week. Deadline dates will be published in the Student Handbook and Events Calendar each year.) In the case of a withdrawal, the student will receive a grade of "W," which will not influence the quality point ratio, but which will appear on the transcript.

Any student who accumulates absences in excess of 20% of the course contact hours (10% for allied health courses) may be dropped from the class and awarded a grade of "U," unless the student follows the official withdrawal procedure before the grade of "U" is recorded. The "U" grade is equivalent to an "F" and will affect the quality point ratio.

Exceptions such as serious illness or job transfer requiring withdrawal from all classes after the 75% point of the term will be considered on an individual basis by the Vice President for Student Services. A student who has withdrawn from a class may no longer attend the class.

#### Adding a Class

A student may add a class to his or her schedule by submitting a "Drop/Add Registration Change Notice" form to the Student Records Registration Office, to his or her advisor or SSA, to the Transfer Advising Center, to the Madison Campus Office, or by adding the class online if permitted. A class may only be added during the schedule adjustment period.

#### Balancing Class Size

Each student is assigned a sequential number for each curriculum class by the computer as registration is completed. This number determines position in the class should the class need to be split. The position determines the priority of the student to remain in the class. The College reserves the right to split classes and assign students to alternate sections whenever necessary to balance class size.

## College Withdrawal

Students who withdraw from the College (i.e. withdraw from all courses) must complete the appropriate withdrawal form for each class prior to the 75% point of the term (see previous section). A grade of "W" will be assigned.

To withdraw from the College after the 75% point, a student must:

1. Obtain a withdrawal form from the Vice President for Student Services.
2. Document valid reason(s) for needing to withdraw.
3. Discuss the need to withdraw with the Vice President for Student Services. Students who are approved for late withdrawal from all courses will receive grades of "W."

If an emergency prevents the student from completing the withdrawal process before leaving the campus, the student should call, write or arrange for someone to contact the Vice President for Student Services.

## Grading System

Final grades will be issued to all students at the end of the term based on the criteria outlined in the course syllabus. A student who wants to contest a grade must do so within six weeks of the awarding of the grade. A grade cannot be changed after this period without approval by the department chair and the division dean.

Students will be graded by the following system:

| | | |
|---|---|---|
| A | 90-100 | Excellent academic performance, consistent mastery of facts and concepts, and a thorough understanding of course content. |
| B | 80-89 | Good academic performance, high-level mastery of course content. |
| C | 70-79 | Average academic performance. |
| D | 60-69 | Marginal academic performance, poor mastery of course content. |
| F | Below 60 | Very poor performance, no demonstration of even minimal mastery of course content. |
| I | Incomplete | Assigned when a student is unable to complete work or take a final examination because of illness or other reasons over which the student has no control. An incomplete grade must be completed within the first six weeks of the next semester. Otherwise, the grade becomes an "F." |
| U | Unofficial Withdrawal (penalty) | Assigned when the student does not follow the College's official withdrawal policy by the course withdrawal deadline or is dropped for excessive absences. This is the equivalent of an "F" grade and will influence the quality point ratio. |
| W | Official Withdrawal (no penalty) | Assigned when the student OFFICIALLY WITHDRAWS. This will not influence the quality point ratio. Developmental Studies faculty may officially withdraw a student from a course. |
| X | Continuing | Assigned when a student is unable to complete work during the current semester because of class scheduling over consecutive semesters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed 12 months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period including zeros for work not completed. |

## Transcript Codes

Other codes that may appear on the college transcript include:

| | |
|---|---|
| AP | Advanced Placement course credit. |
| AR | North Carolina High School to Community College Articulation Agreement course credit. |
| CR | CLEP (College Level Examination Program) course credit. |
| NS | No Show. Student enrolled but never attended the class. This will not influence the quality point ratio. |
| P | Proficiency Credit. |
| T | Transfer credit from other colleges, universities, and military credit. |
| TA | Transfer credit from other North Carolina colleges and universities that articulates under the Comprehensive Articulation Agreement. |
| TS | Transfer credit from other North Carolina community college which can be used only for diploma or A.A.S. programs. |
| Y | Audit. |

# The pound sign next to a grade indicates that the course has been excluded from the quality point average either through course repetition or Academic Fresh Start.

## Quality Points

At the end of each semester quality points are assigned in accordance with the following formula. (The minimum program grade-point ratio for graduation is 2.00 or an average of grade "C.")

| | | | |
|---|---|---|---|
| A | 4 quality points per credit hour | F | no quality points |
| B | 3 quality points per credit hour | I | no quality points |
| C | 2 quality points per credit hour | U | no quality points |
| D | 1 quality points per credit hour | W | no quality points |

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted (excluding grades of "W"). A ratio of 2.00 indicates that a student has an average of "C."

## Final Examination Policy

Each instructor will schedule a comprehensive final course evaluation at some point during the last five days of the semester or the last two days of the class. The evaluation may consist of one or multiple components or methods. The course schedule will indicate the date(s) and method(s) of evaluation. If the final evaluation is given prior to the last day of class, the schedule will reflect the class activities to take place after the final evaluation.

Students are required to take their final examinations at the times and places scheduled. Conflicts may be resolved by arrangement with the faculty member. Three examinations scheduled for the same day is considered a conflict.

## Auditing Courses

Students wishing to audit courses must register through regular registration procedures and pay standard tuition and fees. Students who register to take a course for credit and then choose to audit the course must submit a "Request for an Audit Grade" form to the Records and Registration Office within the first 15 days of the term. The instructor must sign the form to approve the change. A student may change from audit to credit status through the Records and Registration Office only during the first five days of the term. Audit work does not receive credit and cannot be used toward diploma or degree requirements. All prerequisites must be met before a course can be audited. *Physical Education classes may not be audited.* Audit work is not covered by financial assistance.

## Curriculum Course Repetition

Students who need a course to graduate may take the course as many times as necessary to pass it, providing space is available. Any course that has been passed or audited may not be taken for credit or audited more than twice per academic year subject to space being available after registration. The twice-per-year regulation also applies to single or elective courses that are not required for graduation. No single physical education course may be attempted more than twice. Concurrently enrolled high school students in Huskins Bill or dual-enrollment programs may not attempt a course more than two times while concurrently enrolled.

If a student has a failing grade in a required course, the course must be passed prior to graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As courses are repeated, the higher grade becomes the official grade. Only a grade of "D" or above can replace an existing grade.

## Independent Study

Selected courses may be available for Independent Study, with approval of the appropriate Dean. A student requesting to take a course by independent study must complete the "Request for Independent Study" form and have it approved by the department chair and division dean prior to registration. The request to enroll in a course by independent study may be approved when the following conditions are met:

1. The course is not offered during the current semester or is in schedule conflict with another required course and is needed for the student to qualify for graduation or transfer.
2. The student has a cumulative grade point average of 2.0 or higher.
3. The student has completed 15 semester hours of study in his/her academic program at Asheville-Buncombe Technical Community College.
4. A full-time faculty member, with the approval of the department chair, agrees to serve as the instructor for the semester of independent study.

A student will be allowed to accumulate credit for no more than two courses taken by independent study. Any exceptions must be justified by special circumstances and approved by the Vice President for Instruction.

## Cooperative Education

In selected programs, A-B Tech provides students with an opportunity to integrate classroom learning with supervised work experience in an employment situation directly related to the educational program of the student. The work experience component is an integral part of the total educational process. The primary objective of cooperative education is to prepare the student for employment.

To be eligible to participate in a cooperative work experience activity, a student must be 18 years of age, be enrolled in a curriculum program that provides a cooperative education option, have a minimum 2.0 cumulative program GPA, have completed required course prerequisites, and have completed a minimum of 9 semester credit hours within the appropriate program of study. Approval by the department chairperson is required for a student to participate in a cooperative education activity. Any exceptions to these requirements must be approved by the appropriate academic dean.

## Standards for Academic Progress (Academic Warning, Probation, and Suspension Policy)

The College has established this policy to:

- provide students with a warning when they fail to meet minimum academic performance standards;
- limit scheduling when a student's academic performance indicates the necessity for intervention;
- provide a means of preventing and/or terminating prolonged failure.

This policy applies to all students, classified and unclassified.

Students whose semester grade point average (GPA) falls below 2.0 are subject to academic warning, which may be followed by probation and suspension. GPA will be calculated using the current official grade for each course taken that semester at Asheville-Buncombe Technical Community College.

#### I. Academic Warning

Students failing to meet the minimum GPA during any semester will receive an academic warning. The warning advises students of their academic status and encourages them to meet with their advisor immediately to examine present academic plans. Students will be notified in writing of their status by the retention advisor.

#### II. Probation

Students whose semester GPA falls below 2.0 for two successive semesters will be placed on probation, which means the student will have restricted scheduling and must meet with his or her advisor to do one or more of the following:

- limit the number of hours attempted;
- schedule preparatory or remedial courses as needed;
- schedule repeat of courses.

Academic probation will be posted to the student's official transcript. Students will be notified of their status by their retention advisor.

#### III. Suspension

Students whose semester GPA falls below 2.0 for three successive semesters will be placed on academic suspension for one semester. This means that those students will not be allowed to register for curriculum courses. Continuing Education courses may still be taken. Academic suspension will be posted to the student's official transcript.

#### IV. Appeals

Academic suspension may only be appealed through the Vice President for Student Services. Appeals will be considered on the day before classes begin each semester.

#### V. Reenrollment After Suspension

Students may reenroll after having been suspended for one semester.

## Academic Fresh Start

Any returning student who has not attended A-B Tech for three years and upon reenrolling maintains a 2.00 GPA for a minimum of 12 semester hours may petition to have grades on all prior course work more than three years old with a grade less than a "C" excluded in calculating the cumulative GPA. Grades below "C" disregarded in calculating the GPA will not count toward graduation but will remain on the transcript. The student should complete an application for Academic Fresh Start (obtained in the Records and Registration Office), after the end of the semester in which he/she has completed the 12 semester hours required. A student who plans to transfer to another College should contact that institution to determine the impact of Academic Fresh Start on transfer.

## Honors And Achievements

#### Dean's List

1. For the Dean's List, students must be enrolled in an academic program, carrying a minimum of eight credit hours of curriculum courses numbered 100 or above.
2. Students must have a minimum 3.75 quality point average to qualify for the Dean's List for the semester under consideration.
3. Students who earn grades of F, I, U or X and students enrolled in developmental courses are not eligible for the Dean's List for that semester. Students receiving credit for a course by examination are not affected.
4. The Dean's List will be compiled by the Registrar, the Administrative Assistant of Instructional Services, and Department Chairpersons. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President for Instructional Services will be responsible for final approval and publication.

#### President's List

1. For the President's List, students must be enrolled in an academic program, carrying a minimum of twelve credit hours of curriculum courses numbered 100 or above.
2. Students must have a 4.0 quality point average to qualify for the President's List during the semester under consideration.

3. Students who earn grades F, I, U or X and students enrolled in developmental courses are not eligible for the President's List for that semester. Students receiving credit for a course by examination are not affected.

4. The President's List will be compiled by the Registrar, the Administrative Assistant for Instructional Services, and Department Chairpersons. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President for Instructional Services will be responsible for final approval and publication.

## Academic Programs, Core Competencies, and Graduation Requirements

#### Degree, Diploma, and Certificate Programs

Asheville-Buncombe Technical Community College confers the Associate in Arts, Associate in Applied Science, Associate in Science, and Associate in Fine Arts degrees. A diploma is awarded for completion of one-year applied curricula. Certificates are issued to students who successfully complete designated short-term programs or course sequences. Degrees, diplomas, and certificates are conferred, awarded, or issued by authority of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

At least half of the credit hours in a program of study must be earned at this College (the A.A. Transfer-Ready Diploma and the bridge programs for EMS and Surgical Technology require that 25% of the credit hours must be earned at A-B Tech). Any exception must be approved by the Vice President for Instructional Services.

Because of rapid changes in workplace technologies, certain technical courses will "time out" after five years and must be repeated for graduation. Exceptions must be approved by the department chairperson.

#### Core Competencies

Upon successful completion of the Associate in Arts, Associate in Science, Associate in Applied Science, or Associate in Fine Arts degree requirements, the student will have mastered the following cross-curriculum competencies:

1. Demonstrate effective speaking, writing, reading, and listening skills.
2. Demonstrate proficiency in analyzing problems and making logical decisions through locating, evaluating, and using information.
3. Demonstrate proficiency with math skills and/or natural science knowledge by organizing and analyzing information to come to logical conclusions.
4. Demonstrate basic competency in computer technology.
5. Demonstrate knowledge of cultural diversity.

#### Requirements for Graduation

The College holds graduation ceremonies in May and August each year. To graduate with a diploma or degree, students must meet the following minimum requirements:

1. Declare an academic major and complete the requirements of a College-approved program of study according to the student's official catalog. The official catalog is determined by the academic advisor in consultation with the student and should be the catalog that is in effect at the time that the student declares a major. The official catalog may not be a catalog prior to the student's first date of enrollment and must be a College catalog dated no more than five years prior to the date of graduation (i.e., a student graduating in 2009 cannot use a catalog earlier than 2004-2005). Students should be aware that prerequisites for courses change frequently and that they will be required to meet the prerequisites which are in place at the time a course is taken.

2. Each course in the program of study must be completed by one of the following methods:

   a. Take the course at A-B Tech.

   b. Receive transfer credit.
      To be eligible for graduation, at least one-half of the required program hours must be completed at A-B Tech. The following programs require that selected upper-level courses be completed in residency at A-B Tech: Associate Degree Nursing, Basic Law Enforcement Training, Computed Tomography/Magnetic Resonance Imaging, Dental Assisting, Dental Hygiene, Emergency Medical Science, Medical Assisting, Medical Laboratory Technology, Medical Sonography, Phlebotomy, Practical Nursing, Radiography, Surgical Technology, Veterinary Medical Technology, Real Estate, Cosmetology, Therapeutic Massage. A student who desires to transfer credit into one of these programs should consult with the department chairperson. Exceptions may be approved by the Vice President for Instructional Services.

   c. Earn Credit-by-Exam.

3. Earn a grade of at least "C" in each course identified in the catalog as a major course and a minimum average of 2.0 ("C") quality points for the current program. Students completing their program of study with a program grade point average of 4.0 will be graduated with highest honors. Those who have a minimum program GPA of 3.75 will be graduated with high honors and those with a minimum program GPA of 3.50 will be graduated with honors. The student must assume primary responsibility for assuring that all requirements for graduation are met.

4. Apply for graduation online or in the Records and Registration Office the semester before completing degree requirements. Purchase caps, gowns, and diplomas in March (Spring Graduation) or June (Summer Graduation). Students who cannot attend graduation must still pay for the diploma.
5. Be in good standing; fulfill all financial obligations to the College; library clearance is also required.

## Transfer of Credit to Other Institutions

Asheville-Buncombe Technical Community College facilitates the transfer of credit to other institutions. The Associate in Arts, Associate in Science, and Associate in Fine Arts degree programs are designed to transfer to senior institutions at or near the junior level.

College transfer courses satisfactorily completed with a grade of "C" or better in the Associate in Arts, Associate in Science, and Associate in Fine Arts programs will transfer to senior institutions. Degree completers may transfer to selected universities.

Associate in Applied Science graduates have the option of entering a career, continuing their education at a senior institution, or doing both. We are proud of the fact that our graduates have a marketable job skill after two years of study and can also complete a four-year degree after two more years of academic work.

Students who attend most senior institutions do not declare a major until their junior year. Our applied science programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at A-B Tech in the first two years of study. As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

Parallel work, including single courses completed at A-B Tech, will transfer to other institutions in the North Carolina Community College System and to most senior institutions in the state. Most public and private four-year institutions in North Carolina, and many that are out of state, regularly accept credits from A-B Tech and generally enroll the graduates at approximately the junior level. The details of these affiliations are available from the Transfer Advising Center in the Elm Building and the individual senior institutions.

A-B Tech strongly encourages its graduates to continue their formal education after completion of their A-B Tech programs. It is important that graduates recognize the need to continue their education throughout life to prepare for new and changing careers.



# Student Support Services

## Counseling Services and the Career Center

A-B Tech provides free, confidential counseling and related services for students through the Counseling Center located in the Bailey Student Services Center. Students are encouraged to use counseling services at any time if they have personal, academic, or career concerns. The professional counseling staff, after initial assessment, will refer students who need specialized or long-term services to appropriate resources within the community.

Career counseling and career exploration services are available to students who are undecided or confused about career plans. The Career Center, located in the Bailey Student Services Center, houses a variety of career resources, both print and computerized, to assist students in career-related areas. Career development materials are available electronically under Career Development Services under the Student tab on the college home page. Individual career testing and career counseling sessions are available by appointment.

## Academic Advising

In order to ensure that every student receives quality academic advising, A-B Tech has established an academic advising system. Students who are admitted to an applied science degree, diploma, or certificate curriculum are advised by a faculty member from that curriculum. Students who are not admitted to a degree, diploma, or certificate program are advised by Academic Advisors in Student Services. Academic Advisors initially determine the developmental courses for students based upon the results of placement testing. Faculty advisors use this information when advising students. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic standards or have an online education plan developed, created by his/her academic advisor. Students who desire to register for more than 20 credit hours in a semester will need the approval of their department chair or the Vice President for Student Services.

Students in the college transfer program are assigned to the Transfer Advising Center (located in Elm 200) for academic advising. They will be seen by faculty members on duty from the Arts and Sciences Divi-

sion on a first-come, first-serve basis. The Center is open from 8:30 a.m. until 6:00 p.m. Monday through Thursday and from 8:30 a.m. until 4:30 p.m. on Friday. Extended hours are available during peak advising and registration periods. Any student in the college transfer program who wishes to have a specific advisor assigned to him or her may request this service at the Transfer Advising Center, and accommodations will be made for a permanent advisor assignment.

## Services to Students with Disabilities

Asheville-Buncombe Technical Community College is invested in full compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The Disability Services Office at the College ensures that the programs and facilities of the College are accessible to all students. The College focuses on the student as an individual and works toward equal opportunity, full integration into the campus environment, physical accessibility and the provision of reasonable accommodations, auxiliary aids, and services to students.

If you are a student with a disability and require the services of interpreters, readers, note-takers, or need other reasonable accommodations, it is your responsibility to request these services from the Disability Services Office since Federal law prohibits the College from making pre-admission inquiries about disabilities. This office is located in the Counseling Center in the Bailey Building. In order to assess each disabled student's needs and to provide the necessary support services, professional documentation of a disability or disabilities must be furnished to the Disability Services Office. Documentation must be current. Information provided by students is voluntary and appropriate confidentiality is maintained.

Students who need assistance for academic services should call the Office of Disability Services at 828/254-1921, Ext. 141, Ext. 7586, or EXT. 7581. Services are designed and developed on an individual-needs basis, and students may elect to use any or all of the services appropriate to their needs at no charge.

An appointment with the Coordinator of Disability Services is recommended in order to discuss any special concerns. If you are not satisfied with the decisions of this office, you may utilize the College's Student Appeals Policy.

## Developmental Studies

This department provides post-secondary students with instruction in basic math, English, and reading. As the point of entry for learners needing academic development, Developmental Studies is sensitive to the needs of students making a transition to a College environment. Instructors design course work to accommodate first-time College students, those returning to school after an absence, and those with disabilities. The objective of this department is to enable students to develop the skills and behaviors that will lead to successful achievement in A-B Tech's curricula. The minimum passing grade is "C." The grades of "D" or "U" will not be used for Developmental Studies courses. Developmental Studies faculty may officially withdraw a student from a course.

## Academic Learning Center

The Academic Learning Center supports student success through tutorial assistance, foreign language practice, a testing center, and an open computer lab.

The tutoring center provides math, reading, and writing tutorial assistance for students enrolled in any curriculum course. Students must be referred to the lab for tutoring by their instructors. Tutoring is accomplished through individual help, small groups, and computer-assisted instruction.

The foreign language lab provides students with opportunities to practice language skills. Lab practice is expected of all students enrolled in foreign language courses.

The open computer lab may be used by students to complete assignments using computers or may be reserved by an instructor for occasional use by a class.

The testing center facilitates on-line testing, re-testing, make-up testing, extra-time testing or other special needs testing.

Writing Center. The A-B Tech Writing Center is a partnership between the Academic Learning Center and the English Department. Located in Laurel 114 the Writing Center is open and available by appointment to students in all curriculum programs. Staffed by English instructors, the Center aims to help students improve their writing in all stages of the process (brainstorming and pre-writing to final drafting). During conference sessions, emphasis is placed on clarity of expression, design and organization, thesis construction, support for ideas, smooth transitions, appropriate language, integration of secondary source material, and documentation.

## Student Services for Distance Learners

It is our intention to provide as many student services to distance learners as possible. In doing so, we strive to minimize the inconvenience of visiting campus for those students who choose to study off campus exclusively. What follows is a list of student services you can expect to access away from campus as a student enrolled in distance learning classes:

1. **Student Welcome (Orientation).** The Student Welcome is available on local cable television or by requesting a DVD, streaming video, or podcast from the Vice President for Student Services.
2. The **Student Handbook** is available on the College web page at **www.abtech.edu**.

3. **Application.** Application to the College may be made at the College web page. Applications may also be mailed in; they are available in the schedule of classes each semester.
4. **Transcript Evaluation**. Transcripts from colleges previously attended may be faxed to A-B Tech by the originating college and can be evaluated for transfer credit upon receipt.
5. **Application for Graduation**. Applications for graduation are available in the schedule of classes each semester and may be mailed to the Records and Registration Office for evaluation. They are also available on the College web page.
6. **Catalog.** The catalog is available on the College web page at: **www.abtech.edu**
7. **A-B Tech Transcripts.** Transcripts of A-B Tech work may be requested by fax or mail from the transcript clerk in the Records and Registration Office. Transcript request forms are also available on the College web page.
8. **Dropping Classes.** Distance classes may be dropped by calling or e-mailing the Distance Learning Advisor, or online via WebAdvisor, if permitted.
9. **Schedule of Classes.** Curriculum schedules are available each semester on the College web page. Economic and Workforce Development/Continuing Education class schedules are mailed to households in Buncombe and Madison County and available online.
10. **Financial Aid.** Applications for federal financial aid (FAFSA) are available online @ fafsa.ed.gov. Financial Aid advice is available by e-mailing the director of financial aid: **dturner@abtech.edu**
11 **Academic Advising.** Academic advice is available as follows: students classified into programs may receive academic advice by e-mailing their assigned advisor at the College. Unclassified students who are not in any program may receive academic advice by contacting jgrunder@abtech.edu.
12. **Veteran's Services.** Veteran's services and advice are available by e-mailing the veteran's advisor: lszymanski@abtech.edu.
13. **Disabled Students.** Students with disabilities as defined by the Americans with Disabilities Act may seek services by e-mailing the advisor for students with disabilities: aclingenpeel@abtech.edu.
14. **Career Counseling Services.** Some career counseling services are available through e-mail or the postal service: pbulla@abtech.edu.
15. **Placement Testing.** Placement testing may be accomplished at any college in the North Carolina Community College System. Scores can then be faxed by the originating college. Also, SAT or ACT scores may be used instead of testing. For information, e-mail the testing coordinator: kedwards@abtech.edu.
16. **Payment of Tuition and Fees.** Tuition and fees may be paid online using Web Advisor.
17. **Purchase of Books.** Books may be purchased online from the College Bookstore.

## Financial Aid

The purpose of the financial aid program at Asheville-Buncombe Technical Community College is to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships, and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources, and that the student will avail himself of any other financial assistance that is available.

Students desiring financial aid for an academic year (August through May) are encouraged to apply early (January through March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all application materials mentioned in the following procedure may be obtained from any high school guidance office, most college and university financial aid offices, and the A-B Tech Student Services Center. Alternative accessible application formats will be made available to individuals with disabilities upon request to the ADA Coordinator.

## Application Procedure

For priority consideration, it is important that students complete the first three steps of the admissions procedure (See the section of this catalog regarding the General Admission Requirements and Procedures).

Starting with the 2008-09 academic year, all financial aid applications are required to be entered on the Department of Education website at **www.fafsa.ed.gov**. However, prior to completing the online FAFSA (Free Application for Federal Student Aid), students must apply for a Personal Identification Number (PIN) at **www.pin.ed.gov**. This number will be entered as your signature for the FAFSA.

If you are a dependent and therefore required to provide your parents' financial and personal information on the FAFSA, at least one parent must also apply for a PIN at the address above, as it is required to have the parent sign the FAFSA as well. When you go to the website, you will be given explicit instructions. Assistance is also provided by the Department of Education at 1-800-433-3243. TTY users (hearing impaired) may call 1-800-730-8913.

There is a FAFSA Worksheet that you may complete prior to completing the application online. Worksheets will be available at your local high school or college and in the Student Services Center on the A-B Tech main campus. You may also print the worksheet from the **www.fafsa.ed.gov** website.

When you log onto **www.fafsa.ed.gov**, you will be advised on all the documentation you must have to complete the FAFSA. A complete and accurate application will prevent delays in processing your financial aid. The college code you will enter for A-B Tech is 004033.

Make sure you receive and retain a copy of the confirmation number when your FAFSA is submitted. Once the Department of Education processes your application, an electronic file with the information the College needs to process financial aid for you will be transmitted to the A-B Tech Financial Aid Office. Also, when your FAFSA is processed, you will receive the Student Aid Report (SAR) in your email or a hard copy of the report may be mailed to your home address.

You will find all the web links mentioned above, as well as other helpful sources of financial aid assistance, on the A-B Tech website: Visit **www.abtech.edu**, click on the student link, and scroll down to the financial aid link. Computers are available for student use in the Bailey Student Services Center

Students seeking additional information about the Financial Aid Program at A-B Tech are urged to contact the Financial Aid Office in the Bailey Student Services Center

## Satisfactory Academic Progress Standards for Financial Aid

The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. The federal regulations addressing satisfactory progress were initially published in October 1983, with amendments made in December 1987 and then again in April 1994.

Satisfactory Progress Defined. Generally, a student is considered to be making satisfactory progress toward his/her curriculum program of study when three requirements are satisfied:

1. Maintain a minimum cumulative grade point average based on credit hours attempted. (The qualitative standard required by regulation).
2. Complete a minimum number of credit hours of the total credit hours attempted with grades of A, B, C, or D. (The first quantitative standard required by regulation).
3. Successfully complete the program of study within its maximum time frame. Regulations specify that the maximum time frame may not exceed 150% of the published length of the program for full-time students. (The second quantitative standard required by regulation).

**Monitoring Satisfactory Progress**. The College will monitor the qualitative and quantitative standards referenced in 1 and 2 above using the chart below. The chart has been designed to accommodate all federally eligible programs of study offered by the College and variable enrollment status of students (e.g. full-time, half-time, less than half-time).

| Credit Hours Attempted* | Minimum Credit Hours to be Completed** | Minimum Cumulative GPA Required*** |
|---|---|---|
| 1-18 | 33% | 2.00 |
| 19-40 | 50% | 2.00 |
| 41 and over | 66% | 2.00 |

*Credit hours attempted will be cumulative and will include all hours for which the student was enrolled as of the census date of each academic term or for which the student received a grade. The census date is defined as the last day for registration as outlined in the College Catalog.

**Credit hours completed with grades of A, B, C, or D only will fulfill this requirement. Grades of AP, AR, CR, I, NS, P, T, TH, U, W, X, and Y will not fulfill this requirement.

***Cumulative GPA is computed by dividing the total number of quality points earned by the total credit hours attempted for which the student received grades of A, B, C, D, F, or U.

The second quantitative standard referred to as the maximum time frame will be measured independently of the monitoring chart. For each program of study a maximum time frame will be calculated by taking the total credit hours required for the program as outlined in the College Catalog and multiplying the total by 150%. Time frames will vary from program to program.

Examples:

1. Practical Nursing curriculum requires 47 credit hours to complete the diploma. The time frame is calculated (47 x 150% = 71).
2. Associate Degree Nursing requires 71 credit hours to complete the degree. The time frame is calculated (71 x 150% = 107).
3. Associate in Arts (A.A.) Degree, Associate in Fine Arts (A.F.A.) Degree, and Associate in Science (A.S.)

Degree require 65 credit hours to complete the degree. The time frame is calculated (65 x 150% = 98).

4. Carpentry requires 46 credit hours to complete the diploma. The time frame is calculated (46 x 150% = 69).

The maximum time frame establishes the maximum number of credit hours a student may attempt in an effort to complete a program of study and, at the same time, remain eligible to receive financial assistance.

Key points to remember regarding the quantitative standard of the time frame:

1. Since the time frame sets the limit for the number of credit hours a student may attempt and remain eligible to receive financial assistance, it is very important that the student plan class schedules carefully with his or her academic advisor and/or the Student Services counseling staff. It is the responsibility of the student to register only for classes listed in his or her chosen major in the College Catalog and for scheduling only the number of hours he or she is capable of completing. SOME STUDENTS WILL BE REQUIRED TO TAKE PROVISIONAL COURSES WHICH WILL ALSO BE COUNTED AS HOURS ATTEMPTED. Students are responsible for knowing the policy concerning the limitation on hours attempted for financial aid purposes. Registering for more courses than a student is capable of completing, having to withdraw from classes, registering for courses for which the student has already received credit, taking courses in error, etc., all impact the time frame and could result in losing financial aid eligibility before completing a program of study.
2. The time frame is cumulative; therefore, by switching programs without completing the initial program, the student runs the risk of losing financial aid eligibility.
3. The time frame begins when the student first attends the College and continues until that student successfully completes a program of study regardless of the number of years that may elapse between enrollment periods.
4. Only students who successfully complete a program of study will be given a new time frame should they decide to enter a subsequent program of study. The credit hours attempted to complete the first program will not be included as hours attempted in the time frame for the second program of study.
5. Students who take course work and are unclassified will have those hours attempted added to their time frame if and when they enter a specific program of study.
6. Students accepted into a program of study who are required to take guided studies or developmental course work, as determined by placement testing results and the professional judgment of a student services counselor, will have the credit hours attempted for such course work count toward their time frame.
7. The credit hours for course incompletes, withdrawals, and repetitions will be counted as hours attempted toward the time frame.
8. Students switching from a degree program to a vocational program who have or nearly have exceeded the initial time frame may appeal to the Director of Financial Aid for a time frame extension.
9. Credit hours transferred in will be counted toward the maximum time frame of eligibility. Prior degrees earned will be taken into consideration when determining transfer hours.

## Satisfactory Progress Increments

The College will monitor satisfactory academic progress at two points during each academic year (i.e. at the end of both the Fall and Spring Semesters). The only exceptions to this would be (1) for those students returning to the College who have a prior academic record at the College. Such students would be monitored at the time they reenroll since the federal regulations require the standards for progress to cover all periods of enrollment, including those periods for which the student did not receive aid from Title IV funds, and (2) for students who return to the College at their own expense in an effort to reestablish their eligibility. These students would be monitored each term until they meet the satisfactory progress definition.

Based upon the number of credit hours attempted, the student will be expected to complete a minimum number of credit hours with satisfactory grades as described earlier and at the same time maintain a minimum cumulative grade point average without exceeding the maximum time frame. Failure to meet the standards outlined will result in termination of financial aid eligibility. Due to the leniency of the satisfactory progress standards early in the student's program of study, the College will not provide an automatic probationary period during which the student may continue receiving financial aid while attempting to improve upon the number of credit hours completed and/or the cumulative grade point average required. Nevertheless, the College will provide an appeal procedure for reinstatement of financial aid eligibility.

## Appeal of Financial Aid Termination

To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate in writing to the Director of Financial Aid the reasons why he/she did not make satisfactory progress and why financial aid should not be terminated. Documentation to support the appeal is required.

2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
3. A student wishing to appeal the decision of the Director of Financial Aid may do so, in writing, to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made through the Student and Grade Appeal Procedure and then to the President of the College if deemed necessary by the student.

## Reinstatement of Financial Aid Eligibility

Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met, eligibility is reinstated for the subsequent satisfactory progress increment. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.



# Scholarships and Other Financial Aid Information

## Scholarships

Generally, scholarships are awarded only to those applicants who have completed the Application Procedure for student financial assistance outlined earlier. Most scholarships awarded by the College are restricted to a specific program of study and are based on financial need. The College does award a limited number of merit scholarships to qualifying second-year students which are program specific and require the endorsement and/or screening of faculty in the applicant's department of study. Students needing more information about these limited scholarships should call the Financial Aid Office at 828/254-1921, Ext. 162.

All students are encouraged to seek out scholarships offered by clubs and organizations in their communities.

An excellent source for scholarships is located on the World Wide Web. Students can do searches by accessing **www.finaid.org** and using the Free Scholarship Search (FASTWEB). FASTWEB alone contains a database of more than 180,000 scholarships. The Web site of the North Carolina State Education Assistance Authority, **www.ncseaa.edu**, lists scholarships available to North Carolina residents only.

#### Asheville-Buncombe Technical Community College Foundation

The Asheville-Buncombe Technical Community College Foundation awards scholarships annually.

- February 15 - Online applications are available at: **www.abtech.edu/foundation/scholarships**
- April 15 - Students applying for scholarships requiring the establishment of financial need should complete the Free Application for Federal Student Aid (FAFSA). **www.fafsa.edu.gov**
- May 15 - Online application for scholarships closes.
- July 15 - Foundation Office informs the students and the Financial Aid Office of the selection status.

Students may access scholarship criteria on the A-B Tech website at **www.abtech.edu/foundation**. For additional information about the Foundation, please call 254-1921, Ext. 7562

#### Other Financial Aid Information

In addition to scholarships, information about grants, loans and work programs is also available on the internet. Some recommended sites are:

**www.ed.gov/offices/ope**: Click on "Information for Students" for federal student aid information.

**www.cfnc.org**: Provides comprehensive information about scholarships, loans, and other programs/issues.

**www.nasfaa.org**: Click on "Financial Aid Information for Students, Parents & Counselors;" provided by the National Association of Student Financial Aid Administrators.

**www.cfi.org**: Provides comprehensive information about student and parent loans.

## The Hope Tax Credit

The Hope Credit is a federal tax credit. The actual amount of the credit depends upon family income and the amount of qualified tuition paid less any financial aid.

To qualify, the taxpayer must file a return, owe taxes, and claim the student as a dependent (unless the student is a spouse). The student must be enrolled at least half-time in an eligible program leading to a degree, certificate or diploma and must not have completed the first two years of undergraduate study. The credit is not available to students who have been convicted of a felony drug offense.

## The Lifetime Learning Tax Credit

The Lifetime Learning Tax Credit may be claimed for the taxpayer, spouse, or eligible dependents for an unlimited number of years. This credit is family-based rather than dependent-based like the Hope Credit. The actual amount of the credit depends upon the family's income and the amount of qualified tuition less any financial aid. Unlike the Hope Credit, students are not required to be enrolled at least half-time in one of the first two years of post-secondary education.

*This is provided for informational purposes only. For detailed tax information, please consult your tax advisor. Information is also available at* **www.ed.gov/inits/hope/**.

## Veteran's Educational Benefits

The Veteran's Advisor will help incoming veterans process their request for benefits. The Veteran's Office is located in the Counseling Center in the Bailey Student Services Center. Individuals applying for veteran's benefits must meet all entrance requirements and are required to meet the College's academic standards as they progress through their programs. Failure to meet these academic standards of progress will result in loss of veteran's educational benefits.



# Other Policies Affecting the Campus Environment

## Tobacco Free Campus

Asheville-Buncombe Technical Community College is committed to providing students and employees with a safe and healthy environment. It is the policy of A-B Tech that tobacco use is not permitted on the College's three campuses. A-B Tech is tobacco free.

## Parking Regulations

All students are required to register their vehicles and display parking permits. Copies of parking regulations are available in the Business Office. Parking spaces designated for individuals with disabilities are located at each facility. Spaces marked by yellow lines are for faculty and staff use only. Students park in white-lined spaces. All parking fines must be paid prior to registering for classes.

## Workplace Violence Prevention Policy and Procedures

### Policy

A-B Tech is committed to providing everyone associated with the College a work and learning environment that is safe and free of violence. To this end, the College prohibits any form of violence.

For purposes of this policy, "violence" includes, but is not limited to, verbally or physically attacking, harassing, intimidating, stalking or coercing any employee, student, visitor, vendor or other person associated with the College, brandishing weapons, damaging property, and/or threatening or talking of engaging in such activities. Brandishing weapons shall not include the use or possession of weapons by authorized employees or students for the purpose of training, or by College security, law enforcement officers, or military personnel when acting in the discharge of their official duties (See "No Weapons on Campus" policy).

Any member of the College community who commits an act of violence toward other persons or property on campus, while engaged in any work for or on behalf of ABTCC, or at ABTCC sponsored events, shall be subject to disciplinary action, up to and including dismissal from employment or expulsion from the College, exclusive of any civil and/or criminal penalties that may be pursued, as appropriate. For the purposes of this policy, a "member of the College community" includes, but is not limited to, employees, students, visitors, College officers and College officials.

No existing College policy, practice, or procedure should be interpreted to prohibit prevention of violence as defined in this policy.

Every employee and student is responsible for reporting any threats or acts of violence that he/she has witnessed, received, or has been told that another person has witnessed or received. Even without an actual threat, an employee or student should report any behavior he/she has witnessed which he/she regards as threatening or violent when that behavior is job related or might be carried out on College property or is connected to College employment or activities. Reports should be made immediately to campus security. The College intends to investigate all acts of violence promptly and objectively.

## No Weapons On Campus Policy

The use or possession of any weapons is prohibited on A-B Tech property or at any College-sponsored activities or events. (See also Workplace Violence Prevention Policy.) It is a violation of A-B Tech policy and State law (N.C.G.S. 14.269.2) for any person, including students, employees and visitors to possess or carry, whether openly or concealed, any weapon. The term "weapon" includes but is not limited to the following:

Gun, rifle, pistol, dynamite, cartridge, bomb, grenade, mine, powerful explosive (as defined in N.C.G.S. 14-284.1), bowie knife, dirk, dagger, slingshot, leaded cane, switchblade knife, razors, razor blades, blackjack, and metallic knuckles.

The term "weapon" also includes any other weapon of like kind, such as sharp pointed or edged instruments; but the term "weapon" excludes tools, utensils, and equipment used solely for maintenance or instructional purposes (such as unaltered nail files and clips, dental tools, and tools used solely for preparation of food) or used for authorized ceremonial purposes on the A-B Tech campus, grounds, recreation areas, athletic field, or other properly owned, used, or operated by A-B Tech.

This policy shall not apply to employees or students when used for authorized training purposes, or to College security, law enforcement officers or military personnel when acting in the discharge of their official duties.

Any person violating this policy shall be disciplined at the discretion of the A-B Tech administration. A person found guilty of activity prohibited by this Weapons Policy may also be guilty under state law of a misdemeanor and upon conviction may be punished at the discretion of the court.



# Other College Services and Information

## College Services

**A-B Tech Café**. The Café is located in the Coman Student Activity Center. Breakfast and lunch meals, including sandwiches, salads, and soups, are prepared daily. Hours of operation are from 7 a.m. to 6 p.m. Monday - Thursday and 7 a.m. to 2 p.m. on Fridays. Vending machines dispensing soft drinks, coffee, and snacks can be found at various locations around campus.

The Culinary Technology, Baking and Pastry Arts, and Hotel and Restaurant Management students prepare and serve lunch and dinner on scheduled Thursdays during fall and spring semesters. See the Student Handbook for times, dates, and reservation information.

**Bookstore**. A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each semester.

Textbook costs vary considerably depending upon the curriculum and semester. Book costs also vary from year to year because of changes in curriculum book prices, texts, and material requirements. Texts and materials will be made available in alternative accessible formats for individuals with disabilities upon request to the Disabilities Services Academic Advisor.

**Child Care**. A-B Tech has limited dollars to assist students with child care services rendered off campus. These funds are provided annually by the state of North Carolina, and funding is therefore subject to annual state budgeting. To be eligible, the student must be approved for federal financial aid, having submitted a FAFSA. The student must have unmet need of greater than $1,000, be taking 12 or more credits, be on campus a minimum of four days per week, and be in good academic standing.

Also on campus is a day care center run by Buncombe County for the general public as well as students and staff. Admission to the facility is on a first come, first served basis. If you have interest in this facility, you may receive further information at 255-5111.

**College Closing or Delayed Opening**. The College will either be closed or opened on a delayed schedule when inclement weather conditions warrant such a decision. Closing or delaying announcements are placed on the switchboard automated attendant, on the A-B Tech web site at **www.abtech.edu**, and will be made on Asheville radio and television stations and some surrounding community radio stations. Separate decisions and announcements are made for the day and evening programs.

**Dental Clinic**. Throughout the year, the Allied Dental Department provides oral health services, such as patient education, dental X-rays, cleaning of teeth, nutritional counseling, and sealants. During spring and summer semesters, limited dental services such as fillings, crowns and partial dentures are also available. A nominal fee is charged for these services. Call the Allied Dental Clinic, Ext. 255, for an appointment and approximate charges for services.

**Distance Learning and the Virtual Campus**. Students who cannot fit a traditional classroom course into their schedules or who prefer to try something new have several alternatives, including web-based classes on the internet, telecourses on videocassette, and interactive television classes between campuses or on the North Carolina Information Highway (NCIH). All alternative instructional formats require student workloads and outcomes comparable to a traditional class. Distance Learning and the Virtual Campus is located in Holly, 107; telephone extension 300.

The Virtual Campus may be accessed through A-B Tech's Web page. For current offerings, times, and locations of courses, as well as phone numbers, alternative orientation formats, and specific course requirements, go to **www.abtech.edu** and click on the Virtual Campus link (or access the page directly at **www.abtech.edu/vcampus**). The Virtual Campus may be accessed from a home computer or from several open computer labs on campus.

Educational Technology Services. Educational Technology Services provides support for classrooms and assists with faculty and student media production. It houses an editing suite and a working studio. This area is staffed Monday-Thursday 8 a.m. - 6 p.m. Educational Technology Services is located in Holly, 115; telephone extensions are 304 and 309.

**Honorary Societies**. The College is proud to sponsor the Alpha Upsilon Eta Chapter of Phi Theta Kappa Academic Honor Society. Membership is open to any student who has a 3.5 GPA after 12 credits of completed work. Eligible students are welcome to seek more information from the Director of Student Activities in the Coman Student Activity Center.

**Intramurals**. A-B Tech Intramurals are an extremely popular extra-curricular activity. We offer volleyball, basketball, tennis, 2-mile run, softball distance throw, football punt, and golf-closest to the pin. Intramurals are open to male and female, faculty, staff, and students, and beginners to advanced athletes. The activities are on Tuesdays and Thursdays and are one hour or less for each session. The only requirements are that you must dress in proper athletic wear and shoes, and volleyball participants need to have some former experience in the sport. Watch for signs on building entrances, the student handbook, the campus marquee, and the Coman Gymnasium Intramural bulletin board.

**Holly Library**. The library provides students with access to print and electronic resources to meet their information need. Unique collections include a North Carolina Collection, audio books, and feature films. The library hours are Monday-Thursday 8 a.m.-8 p.m. and Friday 8 a.m.-4:30 p.m. The library has a Research Central area on the main level where students can use the internet and electronic databases. Quiet study zones, group study rooms, and wireless internet access are located throughout the building. The lower level contains a computer lab and Email Central. The library's circulation telephone ext. is 301.

**Library Hours**

| | |
|---|---|
| Monday-Thursday | 8:00 a.m. - 8:00 p.m. |
| Friday | 8:00 a.m. - 4:30 p.m. |

Mountain Tech Spa, an on-campus spa facility, located In the Birch Building, provides practical experience for Cosmetology, Esthetics Technology, Manicuring/Nail Technology and Therapeutic Massage students under the direction of College faculty.

**Parking Locations and Shuttle Service**. Parking is provided at various locations around campus. Please refer to the campus map located in this catalog for specific sites. Students with disabilities are provided parking at all locations. Parking areas are lighted during evening hours. Spaces marked with yellow lines are reserved for faculty, staff, disabled persons, and visitors. White-lined spaces are reserved for students. A shuttle service is provided for students who park in remote lots. Shuttle routes and schedules are available in the Bailey Student Services Center.

**Placement Service**. No reputable College can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way to obtain suitable employment. Applied Science department chairs are particularly helpful with placing their program graduates.

**Security**. Security personnel are on duty 24 hours a day, seven days a week. Each security officer is certified to respond to medical emergencies.

**Service-Learning Center**. Provides staffing to coordinate class-based projects with community service activities for curriculum classes that require or encourage service-learning as part of the educational experience. The Service-Learning Center is located in Holly, 129; telephone extension 7573.

**Small Business Center/Business Incubator**. The A-B Tech Small Business Center (SBC) is a community resource available to both students and non-students who are considering starting a business as well as those who currently own a business. The SBC offers a variety of resources and services to help businesses start and grow, including free, confidential business counseling, business related seminars and business incubation.

In addition, the SBC has a Student Business Incubator Program which is designed to provide a nurturing environment to current A-B Tech students who want to start or grow their own business and guide them toward becoming sustainable, contributing members of a strong economic community. This 12-month, extracurricular program is located at A-B Tech's Enka campus and is open to ALL current students. More information can be found at **www.abtech.edu/sbc**.

**Student Lounge**. A Student Lounge is located in the Coman Student Activity Center for those students with spare time and who wish to socialize. Wireless internet access is available as well as a community resource area.

**Student Housing**. Students are responsible for their own living accommodations. A-B Tech neither approves nor maintains housing facilities. Students who are looking for housing or roommates may check bulletin boards in the Bailey Student Services Center or the Coman Student Activity Center.

Study Abroad Program. A-B Tech occasionally sponsors Study Abroad opportunities for students. Students who want to participate must be enrolled in the College, must register for the study abroad course, and must purchase health and accident insurance that is valid outside of the United States. Students who successfully complete the study abroad activity and the course requirements will receive course credit.

# Allied Health and Public Service Education

The Allied Health and Public Service Education division offers a variety of programs designed to meet the increasing demand for specialized professionals in the burgeoning health care, child care, and public service industries. The programs in this division present a broad range of career options for individuals desiring a career in a helping profession. The division offers a variety of programs at the Associate in Applied Science degree, diploma and certificate levels. Some areas of study are offered on a day and evening basis.

In addition to classroom and laboratory instruction, each program emphasizes learning experiences at health and public service settings in the community. This extensive training at clinical, pre-hospital, laboratory, child care, or law enforcement facilities affords students a unique opportunity to develop the specialized skills required for employment in a health or public service profession.

An individual desiring training in a health or public service program should have a background in chemistry, biology, science, mathematics, and social sciences. The applicant to an area of study in this division should become familiar with the selection criteria and application deadlines for the specific program. Persons interested in a health or public service career are advised that professional licensure, certification, employment, or admission to clinical/work experience sites may be denied to anyone who has been convicted of a felony or other crime involving moral turpitude.

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator. Please refer to pages 6 and 32 for more information.

**A.A.S. Degrees Conferred**

Associate Degree Nursing
Criminal Justice Technology
Dental Hygiene
Early Childhood Associate
Emergency Medical Science
Fire Protection Technology
Human Services Technology/Social Services
Medical Assisting
Medical Laboratory Technology
Medical Sonography
Radiography
Surgical Technology
School-Age Education
Veterinary Medical Technology

**Diplomas Awarded**

Computed Tomography & Magnetic Resonance Imaging (CT/MRI)
Dental Assisting
Practical Nursing
Surgical Technology

**Certificates Awarded**

Basic Law Enforcement Training
Computed Tomography (CT)
Early Childhood
Fire Protection Technology
Infant/Toddler Care
Magnetic Resonance Imaging (MRI)
Phlebotomy
Special Education

## Associate Degree Nursing

This curriculum provides individuals with the knowledge and skills necessary to provide nursing care to clients and groups of clients throughout the lifespan 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.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
4. Satisfactory completion of required immunizations.
5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
6. Students applying to the Associate Degree Nursing program are encouraged to have successfully completed: BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, PSY 150, PSY 241, and a Humanities elective prior to program admission due to the rigorous nature of the A.D.N. curriculum.
7. Effective January 1, 2002, applicants for initial licensure in North Carolina must have a criminal background check. The clinical site may require a criminal background check and/or drug testing prior to participation in the clinical component. If any clinical facility refuses to allow the student to participate in clinical experiences in that clinical agency, the student may not be able to progress in the program.
8. Admission with advanced standing is subject to space available in the clinical component of the nursing program. Persons who begin their nursing education at Asheville-Buncombe Technical Community College have preference in admission over students requesting transfer into the program. Space will be allotted to transfer students only when no students who have previously enrolled in the A-B Tech ADN Program are requesting and have qualified for re-entry.
9. To be eligible for admission to the Fall 2009 Associate Degree Nursing program, applicants will be required to hold a documented current unrestricted credential as a Nursing Assistant I (NA I) from the North Carolina Nurse Aide Registry and the Division of Health Service Regulation by June 15, 2009.

To be eligible for admission in Fall 2010, all nursing program applicants must, by January 29, 2010:

1. Provide documentation of successful completion of a NC approved Certified Nurse Aide I Program which includes theory, lab, and clinical components*. (A copy of a college transcript or a notarized course completion certificate will be acceptable documentation)

   *Challenging the Nurse Aide I examination will not meet this requirement.

   and

2. Hold a documented, current, unrestricted credential as a Nurse Aid I (NAI) from the North Carolina Nurse Aid Registry and the Division of Health Service Regulation. (A copy of current listing on the NC DHSR Nurse Aid Registry Website by January 29, 2010 will be acceptable documentation)Associate Degree Nursing

### Advanced Placement for Licensed Practical Nurses

Applicants are encouraged to complete all non nursing coursework prior to acceptance as an advanced placement LPN. The following general education courses must be completed prior to the end of fall semester to be eligible to apply to the associate degree nursing program: BIO 168, BIO 169, ENG 111, ENG 114, and PSY 150. The remaining general education courses, PSY 241 and CIS 110 may be taken in sequence while enrolled in nursing courses.

**Specific Requirements**

1. Meets the minimum general college admission requirements for Associate Degree Nursing.
2. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
3. Satisfactory completion of required immunizations.
4. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.

5. Current, unrestricted license to practice as an LPN in the state of North Carolina is a prerequisite to admission and must be maintained throughout the program.
6. Completion of NUR 133 Nursing Assessment is a prerequisite to joining the current cohort of associate degree nursing students and is offered spring semester for students accepted into advanced placement.
7. Proof of completion of the Legal Scope of Practice Online Course offered by the NC Board of Nursing as evidenced by documentation of contact hour credit. This course must be taken within 1 year of admission. To access the course offering, please visit **www.ncbon.com/content.aspx?id=1104**
8. The clinical site may require a criminal background check and/or drug testing prior to participation in the clinical component. If any clinical facility refuses to allow the student to participate in clinical experiences in that clinical agency, the student may not be able to progress in the program.
9. Admission with advanced standing is subject to space available in the clinical component of the nursing program. Persons who begin their nursing education at Asheville-Buncombe Technical Community College have preference in admission over students requesting transfer into the program. Space will be allotted to transfer students only when no students who have previously enrolled in the A-B Tech ADN Program are requesting and have qualified for re-entry.
10. A letter of intent should be mailed to the Nursing Department Chairperson by November 1. The letter should contain the following contact information: home and cell phone / email and mailing address.
11. Applicants will be ranked by the total Accuplacer test score administered by the Admissions Office. The Accuplacer test includes reading, sentence skills and math.
12. Applicants will be notified of acceptance or wait list status in December based on space available in the associate degree nursing program at that time. Applicants receiving an acceptance letter will also receive an information packet from the nursing department.
13. Additional seats will be offered to wait list applicants should space become available during the first week of class.

**Associate in Applied Science Degree – Fall Admission (A45120)****

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *6* |
| Core Courses | 37 |
| Other Courses | 16 |
| Program Total | 71 |

Courses requiring a grade of "C" or better: BIO and NUR

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 168 | Anatomy and Physiology I | 3 | 3 | 0 | 4 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| NUR | 115 | Fundamentals of Nursing | 2 | 3 | 6 | 5 |
| NUR | 117 | Pharmacology | 1 | 3 | 0 | 2 |
| NUR | 133 | Nursing Assessment | 2 | 3 | 0 | 3 |
| | | | **11** | **12** | **6** | **17** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 169 | Anatomy and Physiology II | 3 | 3 | 0 | 4 |
| ENG | 114 | Professional Research & Reporting† | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| NUR | 135 | Adult Nursing I | 5 | 3 | 9 | 9 |
| | | | **14** | **6** | **9** | **19** |
| **Third Semester (Summer)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| NUR | 185 | Mental Health Nursing | 3 | 0 | 6 | 5 |
| | | (or NUR 125 Maternal Child Nursing) | (5 | 3 | 6 | 8) |
| | | | **5 (7)** | **2 (5)** | **6** | **8 (11)** |
| **Fourth Semester (Fall II)** | | | | | | |
| NUR | 125 | Maternal-Child Nursing | 5 | 3 | 6 | 8 |
| | | (or NUR 185 Mental Health Nursing) | (3 | 0 | 6 | 5) |
| NUR | 255 | Professional Issues | 3 | 0 | 0 | 3 |
| PSY | 241 | Development Psychology | 3 | 0 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 0 | 3 |
| | | | **(12) 14** | **(0) 3** | **6** | **(14) 17** |
| **Fifth Semester (Spring II)** | | | | | | |
| NUR | 235 | Adult Nursing II | 4 | 3 | 15 | 10 |
| | | | **4** | **3** | **15** | **10** |
| **Program Totals** | | | **48** | **26** | **42** | **71** |

** Upon successful completion of the additional 32 credit hours in nursing and 9 credit hours in general education, students will receive credit for NUR 115, NUR 117, and NUR 135 and receive the Associate in Applied Science degree in nursing.

†Applicants must obtain nursing department chair approval to enroll in ENG 114.

# Basic Law Enforcement Training (C55120)

Basic Law Enforcement Training (BLET) is designed to give students essential skills required for entry-level employment as law enforcement officers with state, county, or municipal governments, or with private enterprise.

This program utilizes state-commission-mandated topics and methods of instruction. General subjects include, but are not limited to, criminal, juvenile, civil, traffic, and alcoholic beverage laws; investigative, patrol, custody, and court procedures; emergency responses; and ethics and community relations.

Successful graduates receive a curriculum certificate and are qualified to take certification examinations mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or the North Carolina Sheriffs Education and Training Standards Commission.

**Specific Requirements**

1. General college admission requirements.
2. Individuals must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book—General Statute 17-A and Title-12 Chapter 9 North Carolina Administrative Code.
3. Individuals must be sponsored by a North Carolina law enforcement agency. The letter of sponsorship must:

a. be signed by the agency head; i.e., Chief or Sheriff.

b. include a statement of sponsorship that certifies that the applicant meets the standards for certification as stated in number two above.

c. state that a background investigation was conducted.

4. Individuals must submit their sponsorship letter and college application to the Law Enforcement Training Center director at least 15 days prior to the courses scheduled start date. Applicants are accepted on a first-come, first-serve basis. Priority will be given to full-time employees of law enforcement agencies.
5. Individuals must provide the School Director a certified criminal record check for local and state records for the time period since the trainee has become an adult and from all locations where the trainee has resided since becoming an adult. An Administrative Office of the Courts criminal record check or a comparable out-of-state criminal record check will satisfy this requirement.
6. If accepted into the program, the student must submit completed North Carolina Sate Forms F-1 and F-2 on the first day of class. These forms are provided by the sponsoring agency and are not available at the College.
7. Prior to admission each student must achieve a reading score of at least the tenth grade. This testing can be done AFTER submitting your application for enrollment Testing is done in the K. Ray Bailey Building Monday through Thursdays: 8:30 am, 10:30 am, 1:30 pm, 3:30 pm, and 5:30 pm and Fridays: 8:30 am, 10:30 am, and 1:30 pm. Please visit http://placementtesting.abtech.edu to schedule your placement test. Please arrive in the counseling department of the Bailey Building 20 minutes prior to your scheduled test time.

## Basic Law Enforcement Training Certificate Program – Day and Evening Schedule

| Program Summary | Hours |
|---|---|
| One major Course | 19 |

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| CJC | 100 | Basic Law Enforcement Training | 9 | 30 | 19 |

# Computed Tomography & Magnetic Resonance Imaging Technology (CT/MRI)

The Computed Tomography and Magnetic Resonance Imaging Technology curriculum 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 curriculum must be registered or registry-eligible radiologic technologists, radiation therapists, or nuclear medicine technologist*

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 Computed Tomography and/or Magnetic Resonance Imaging examinations. They may find employment in facilities which perform these imaging procedures.

Students may opt for the certificate in either the CT or MRI program.

**Specific Requirements**

1. General college admission requirements.
2. Applicants must be ARRT certified in Radiography, Radiation Therapy, or Nuclear Medicine (may also be NMTCB certified) or registry-eligible at the time of enrollment.
3. Keyboarding skills are highly recommended.
4. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to the department chair before classes begin.
5. Either first dose of Hepatitis B vaccine or completion of series.
6. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider which must be renewed annually.
7. Criminal background checks may be required prior to admission to clinical sites.

**Notice**

Candidates for advanced certification from the American Registry of Radiologic Technologists (ARRT) must comply with the "Rules of Ethics" contained in the ARRT Standards of Ethics. Any conviction of a crime, including a felony, a gross misdemeanor, or a misdemeanor with the sole exception of speeding and parking violations must be investigated by the ARRT in order to determine eligibility for the certification examination. Additional information may be obtained from the department chairperson or on the ARRT website at **www.arrt.org**.

CT/MRI students will be required to complete clinical rotations which may require them to travel as much as two hours from campus. Clinical affiliates may be located throughout Western North Carolina.

## Computed Tomography & Magnetic Resonance Imaging Technology - Diploma (D45200)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *6* |
| Core Courses | 36 |
| Program Total | 42 |

Courses requiring a grade of "C" or better: CAT and MRI

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| CAT | 210 | CT Physics and Equipment | 3 | 0 | 0 | 3 |
| CAT | 211 | CT Procedures | 4 | 0 | 0 | 4 |
| CAT | 225 | CT Clinical Practicum | 0 | 0 | 15 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | | **10** | **0** | **15** | **15** |
| **Second Semester (Spring)** | | | | | | |
| MRI | 210 | MRI Physics and Equipment | 3 | 0 | 0 | 3 |
| MRI | 211 | MRI Procedures | 4 | 0 | 0 | 4 |
| MRI | 225 | MRI Clinical Practicum | 0 | 0 | 15 | 5 |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| | | | **10** | **0** | **15** | **15** |
| **Third Semester (Fall)** | | | | | | |
| CAT | 226 | CT Clinical Practicum (or MRI 226 MRI Clinical Practicum) | 0 | 0 | 18 | 6 |
| | | | **0** | **0** | **18** | **6** |
| **Fourth Semester (Spring)** | | | | | | |
| MRI | 226 | MRI Clinical Practicum (or CAT 226 CT Clinical Practicum) | 0 | 0 | 18 | 6 |
| | | | **0** | **0** | **18** | **6** |
| **Program Totals** | | | **20** | **0** | **66** | **42** |

## Computed Tomography Technology Certificate Program (C45200L1)

| Program Summary | Hours |
|---|---|
| Major Courses (CAT prefix) | 18 |

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **Program offered Fall** | | | | | | |
| CAT | 210 | CT Physics and Equipment | 3 | 0 | 0 | 3 |
| CAT | 211 | CT Procedures | 4 | 0 | 0 | 4 |
| CAT | 225 | CT Clinical Practicum | 0 | 0 | 15 | 5 |
| CAT | 226 | CT Clinical Practicum | 0 | 0 | 18 | 6 |
| **Program Totals** | | | **7** | **0** | **33** | **18** |

## Magnetic Resonance Imaging Technology Certificate Program (C45200L2)

| Program Summary | Hours |
|---|---|
| Major Courses (MRI prefix) | 18 |

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **Program offered Spring** | | | | | | |
| MRI | 210 | MRI Physics and Equipment | 3 | 0 | 0 | 3 |
| MRI | 211 | MRI Procedures | 4 | 0 | 0 | 4 |
| MRI | 225 | MRI Clinical Practicum | 0 | 0 | 15 | 5 |
| MRI | 226 | MRI Clinical Practicum | 0 | 0 | 18 | 6 |
| **Program Totals** | | | **7** | **0** | **33** | **18** |

# Criminal Justice Technology

This curriculum is designed to provide practical 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 Associate in Applied Science Degree (A55180)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 22 |
| Other Courses | 39 |
| Program Total | **76** |

Courses requiring a grade of "C" or better: CJC

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| CJC | 111 | Introduction to Criminal Justice | 3 | 0 | 3 |
| CJC | 113 | Juvenile Justice | 3 | 0 | 3 |
| CJC | 231 | Constitutional Law | 3 | 0 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| | | | **14** | **4** | **16** |
| **Second Semester (Spring)** | | | | | |
| CJC | 112 | Criminology | 3 | 0 | 3 |
| CJC | 131 | Criminal Law | 3 | 0 | 3 |
| | | Criminal Justice Electives (Choose 2)* | 6 | 0 | 6 |
| HUM | 115 | Critical Thinking | 3 | 0 | 3 |
| | | | **15** | **0** | **15** |
| **Third Semester (Summer)** | | | | | |
| CJC | 114 | Investigative Photography | 1 | 2 | 2 |
| | | (or CJC 120, or CJC 261) | | | |
| | | Criminal Justice Electives (Choose 3)* | 9 | 0 | 9 |
| PSY | 150 | General Psychology | 3 | 0 | 3 |
| | | | **13** | **2** | **14** |
| **Fourth Semester (Fall)** | | | | | |
| CJC | 221 | Investigative Principles | 3 | 2 | 4 |
| | | Criminal Justice Electives (Choose 2)* | 6 | 0 | 6 |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 3 |
| SOC | 225 | Social Diversity | 3 | 0 | 3 |
| | | (or PSY 281, or PSY 231, or PSY 237) | | | |
| | | | **15** | **2** | **16** |

| | | | | |
|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | |
| CJC 212 | Ethics and Community Relations | 3 | 0 | 3 |
| | Criminal Justice Electives (Choose 2)* | 6 | 0 | 6 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | (or MAT 151, or MAT 161) | | | |
| SPA 120 | Spanish for the Workplace | 3 | 0 | 3 |
| | (or SPA 111, or COM 120) | | | |
| | | **14** | **2** | **15** |
| **Program Totals** | | **71** | **10** | **76*** |

** Totals include a minimum of twenty-seven credit hours of major electives to be selected from: CJC 121, CJC 122, CJC 132, CJC 160, CJC 170, CJC 213, CJC 214, CJC 215, CJC 222, CJC 223, CJC 225, CJC 232, CJC 255, CCT 110, CCT 121, or CCT 231.*
Students who have successfully completed a curriculum offering of Basic Law Enforcement Training within 10 years of their application to the Criminal Justice Technology Program will receive credit for CJC 121, 131, 132, 221, and 231.

## Criminal Justice Technology Associate in Applied Science Degree - Evening Schedule (A55180)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| CJC 111 | Introduction to Criminal Justice | 3 | 0 | 3 |
| CJC 113 | Juvenile Justice | 3 | 0 | 3 |
| CJC 231 | Constitutional Law | 3 | 0 | 3 |
| | | **11** | **4** | **13** |
| **Second Semester (Spring)** | | | | |
| CJC 112 | Criminology | 3 | 0 | 3 |
| CJC 131 | Criminal Law | 3 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | Criminal Justice Elective* | 3 | 0 | 3 |
| | | **12** | **0** | **12** |
| **Third Semester (Summer)** | | | | |
| | Criminal Justice Elective* | 3 | 0 | 3 |
| ENG 114 | Professional Research & Reporting | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Fourth Semester (Fall)** | | | | |
| | Criminal Justice Elective* | 3 | 0 | 3 |
| CJC 114 | Investigative Photography | 1 | 2 | 2 |
| | (or CJC 120, or CJC 261) | | | |
| CJC 221 | Investigative Principles | 3 | 2 | 4 |
| | | **7** | **4** | **9** |
| **Fifth Semester (Spring)** | | | | |
| CJC 212 | Ethics and Community Relations | 3 | 0 | 3 |
| | Criminal Justice Elective* | 3 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | (or MAT 151, or MAT 161) | | | |
| | | **8** | **2** | **9** |
| **Sixth Semester (Summer)** | | | | |
| | Criminal Justice Elective* | 3 | 0 | 3 |
| HUM 115 | Critical Thinking | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Seventh Semester (Fall)** | | | | |
| | Criminal Justice Electives (Choose 2)* | 6 | 0 | 6 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Eighth Semester (Spring)** | | | | |
| | Criminal Justice Electives (Choose 2)* | 6 | 0 | 6 |
| SOC 225 | Social Diversity | 3 | 0 | 3 |
| | (or PSY 281, or PSY 231, or PSY 237) | | | |
| SPA 120 | Spanish for the Workplace | 3 | 0 | 3 |
| | (or SPA 111, or COM 120) | | | |
| | | **12** | **0** | **12** |
| **Program Totals** | | **71** | **10** | **76** |

** Totals include a minimum of twenty-seven credit hours of major electives to be selected from: CJC 121, CJC 122, CJC 132, CJC 160, CJC 170, CJC 213, CJC 214, CJC 215, CJC 222, CJC 223, CJC 225, CJC 232, CJC 255, CCT 110, CCT 121, or CCT 231.*
Students who have successfully completed a curriculum offering of Basic Law Enforcement Training within 10 years of their application to the Criminal Justice Technology Program will receive credit for CJC 121, 131, 132, 221, and 231.

# Dental Assisting

This 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 of this program may be eligible to take the Dental Assisting National Board Examination to become Certified Dental Assistants. As Dental Assistant IIs, defined by the Dental Laws of North Carolina, graduates work in dental clinics/offices, and insurance companies.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. Acceptable report of medical examination by first day of class.
4. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
5. Students applying to the Dental Assisting program are encouraged to have successfully completed BIO 161 or BIO 163 or BIO 168 and BIO 169, CIS 110 or CIS 111, ENG 102 or ENG 111 and COM 231, and PSY 150 prior to program admission due to the rigorous nature of the Dental Assisting curriculum.

## Dental Assisting Diploma (D45240)

| Program Summary | Hours |
|---|---|
| General Education | 9 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 37 |
| Other Courses | 2 |
| Program Total | 48 |

Courses requiring a grade of "C" or better: DEN

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| BIO | 161 | Intro to Human Biology (or BIO 106) | 3 | 0 | 0 | 3 |
| DEN | 101 | Preclinical Procedures | 4 | 6 | 0 | 7 |
| DEN | 103 | Dental Sciences | 2 | 0 | 0 | 2 |
| DEN | 110 | Orofacial Anatomy | 2 | 2 | 0 | 3 |
| DEN | 111 | Infection/Hazard Control | 2 | 0 | 0 | 2 |
| DEN | 112 | Dental Radiography | 2 | 3 | 0 | 3 |
| | | | **15** | **11** | **0** | **20** |
| **Second Semester (Spring)** | | | | | | |
| DEN | 102 | Dental Materials | 3 | 4 | 0 | 5 |
| DEN | 104 | Dental Health Education | 2 | 2 | 0 | 3 |
| DEN | 105 | Practice Management | 2 | 0 | 0 | 2 |
| DEN | 106 | Clinical Practice I | 1 | 0 | 12 | 5 |
| | | | **8** | **6** | **12** | **15** |
| **Third Semester (Summer)** | | | | | | |
| CIS | 111 | Basic PC Literacy | 1 | 2 | 0 | 2 |
| DEN | 107 | Clinical Practice II | 1 | 0 | 12 | 5 |
| ENG | 102 | Applied Communication II | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | | **8** | **2** | **12** | **13** |
| **Program Totals** | | | **31** | **19** | **24** | **48** |

# Dental Hygiene

This curriculum prepares individuals with the knowledge and skills to assess, plan, implement, and evaluate dental hygiene care for the individual and the community.

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.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. Have high school credit with grade of at least "C" for four units of English, two units of mathematics (one of which must be algebra), one unit of chemistry, and one unit of biology. Science oriented college preparatory courses are recommended.
4. Acceptable report of medical examination by the first day of class.
5. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
6. Students applying to the Dental Hygiene program are encouraged to have successfully completed: BIO 168, BIO 169, BIO 175, CIS 110 or CIS 111, COM 231, ENG 111, HUM 115, and SOC 240 prior to program admission due to the rigorous nature of the Dental Hygiene curriculum.
7. The North Carolina Board of Dental Examiners may deny license to individuals convicted of a felony or any other crime involving moral turpitude.

## Dental Hygiene
## Associate in Applied Science Degree (A45260)

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 53 |
| Other Courses | 5 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: DEN

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Weekly Clinic Hrs. | Credit Hrs. |
|---|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | | |
| BIO | 168 | Anatomy and Physiology I | 3 | 3 | 0 | 4 |
| DEN | 110 | Orofacial Anatomy | 2 | 2 | 0 | 3 |
| DEN | 111 | Infection/Hazard Control | 2 | 0 | 0 | 2 |
| DEN | 112 | Dental Radiography | 2 | 3 | 0 | 3 |
| DEN | 120 | Dental Hygiene Preclinic Lecture | 2 | 0 | 0 | 2 |
| DEN | 121 | Dental Hygiene Preclinic Lab | 0 | 6 | 0 | 2 |
| | | | **11** | **14** | **0** | **16** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 169 | Anatomy and Physiology II | 3 | 3 | 0 | 4 |
| DEN | 124 | Periodontology | 2 | 0 | 0 | 2 |
| DEN | 125 | Dental Office Emergencies | 0 | 2 | 0 | 1 |
| DEN | 130 | Dental Hygiene Theory I | 2 | 0 | 0 | 2 |
| DEN | 131 | Dental Hygiene Clinic I | 0 | 0 | 9 | 3 |
| DEN | 223 | Dental Pharmacology | 2 | 0 | 0 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | | **12** | **5** | **9** | **17** |
| **Third Semester (Summer)** | | | | | | |
| BIO | 175 | General Microbiology | 2 | 2 | 0 | 3 |
| CIS | 111 | Basic PC Literacy | 1 | 2 | 0 | 2 |
| DEN | 140 | Dental Hygiene Theory II | 1 | 0 | 0 | 1 |
| DEN | 141 | Dental Hygiene Clinic II | 0 | 0 | 6 | 2 |
| DEN | 222 | General & Oral Pathology | 2 | 0 | 0 | 2 |
| | | | **6** | **4** | **6** | **10** |
| **Fourth Semester (Fall)** | | | | | | |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| DEN | 123 | Nutrition/Dental Health | 2 | 0 | 0 | 2 |
| DEN | 220 | Dental Hygiene Theory III | 2 | 0 | 0 | 2 |
| DEN | 221 | Dental Hygiene Clinic III | 0 | 0 | 12 | 4 |
| DEN | 224 | Materials and Procedures | 1 | 3 | 0 | 2 |
| DEN | 232 | Community Dental Health | 2 | 0 | 0 | 2 |
| SOC | 240 | Social Psychology | 3 | 0 | 0 | 3 |
| | | | **13** | **3** | **12** | **18** |
| **Fifth Semester (Spring)** | | | | | | |
| DEN | 230 | Dental Hygiene Theory IV | 1 | 0 | 0 | 1 |
| DEN | 231 | Dental Hygiene Clinic IV | 0 | 0 | 12 | 4 |
| DEN | 232 | Community Dental Health | 0 | 0 | 3 | 1 |
| DEN | 233 | Professional Development | 2 | 0 | 0 | 2 |
| DEN | 235 | Dental Hygiene Concepts | 2 | 0 | 0 | 2 |
| HUM | 115 | Critical Thinking | 3 | 0 | 0 | 3 |
| | | | **8** | **0** | **15** | **13** |
| **Program Totals** | | | **50** | **26** | **42** | **74** |

# Early Childhood Associate

This curriculum prepares individuals to work with children from infancy through early childhood in diverse learning environments. Students will combine learned theories with practice in actual settings with young children under the supervision of qualified teachers.

Course work includes childhood 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.

**Specific Requirements**

1. General college admission requirements.
2. Acceptable reports of medical examination by the first day of class.
3. Three character/employment references by the first day of class.
4. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."
5. Criminal background checks are required prior to assignment to cooperative work experience sites.

## Early Childhood Associate
## Associate in Applied Science Degree (A55220)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 35 |
| Other Courses | 22 |
| Program Total | 72 |

Courses requiring a grade of "C" or better:, CIS, COE, and EDU

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| EDU | 119 | Intro to Early Childhood Education | 4 | 0 | 0 | 4 |
| EDU | 144 | Child Development I | 3 | 0 | 0 | 3 |
| EDU | 151 | Creative Activities | 3 | 0 | 0 | 3 |
| EDU | 151A | Creative Activities Lab | 0 | 2 | 0 | 1 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | | **15** | **6** | **0** | **18** |
| **Second Semester (Spring)** | | | | | | |
| COE | 111EC | Work Experience I | 0 | 0 | 10 | 1 |
| COE | 115EC | Work Experience I Seminar | 1 | 0 | 0 | 1 |
| EDU | 131 | Child, Family & Community | 3 | 0 | 0 | 3 |
| EDU | 145 | Child Development II | 3 | 0 | 0 | 3 |
| EDU | 271 | Educational Technology | 2 | 2 | 0 | 3 |
| COM | 120 | Interpersonal Communication | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | | **15** | **2** | **10** | **17** |
| **Third Semester (Summer)** | | | | | | |
| EDU | 251 | Exploration Activities | 3 | 0 | 0 | 3 |
| EDU | 251A | Exploration Activities Lab | 0 | 2 | 0 | 1 |
| MAT | 140 | Survey of Mathematics | 3 | 0 | 0 | 3 |
| | | | **6** | **2** | **0** | **7** |
| **Fourth Semester (Fall)** | | | | | | |
| EDU | 146 | Child Guidance | 3 | 0 | 0 | 3 |
| EDU | 154 | Social/Emotional/Behavior Development (or EDU 262 Administration II) | 3 | 0 | 0 | 3 |
| EDU | 214 | Early Childhood Interm Practium | 1 | 9 | 0 | 4 |
| EDU | 221 | Children with Exceptionalities | 3 | 0 | 0 | 3 |
| EDU | 280 | Language and & Literacy Experiences | 3 | 0 | 0 | 3 |
| | | | **13** | **9** | **0** | **16** |
| **Fifth Semester (Spring)** | | | | | | |
| COM | 140 | Intercultural Communication | 3 | 0 | 0 | 3 |
| EDU | 153 | Health, Safety & Nutrition | 3 | 0 | 0 | 3 |
| EDU | 153A | Health, Safety & Nutrition Lab | 0 | 2 | 0 | 1 |
| EDU | 248 | Developmental Delays (or EDU 234 Infants, Toddlers, Twos) (or EDU 114 Family Child Care) (or EDU 261 Administration I) | 3 | 0 | 0 | 3 |
| EDU | 284 | Early Childhood Capstone Prac | 1 | 9 | 0 | 4 |
| | | | **10** | **11** | **0** | **14** |
| **Program Totals** | | | **59** | **30** | **10** | **72** |

## Early Childhood Certificates

The Early Childhood Certificate program is designed to provide students minimum entry level skills to work with children from infancy through early childhood. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Head Start programs, and school age programs.

**Specific Requirements**

1. General college admission requirements.
2. Three character/employee references by the first day of class.
3. Criminal background checks are required prior to credentialing. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."

### Early Childhood Certificate Program (C55220L1)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | |
| EDU 119 | Intro to Early Childhood Education | 4 | 0 | 0 | 4 |
| EDU 144 | Child Development I | 3 | 0 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | **10** | **0** | **0** | **10** |
| **Second Semester (Spring)** | | | | | |
| EDU 146 | Child Guidance | 3 | 0 | 0 | 3 |
| EDU 151 | Creative Activities | 3 | 0 | 0 | 3 |
| EDU 151A | Creative Activities Lab | 0 | 2 | 0 | 1 |
| | | **6** | **2** | **0** | **7** |
| **Program Totals** | | **16** | **2** | **0** | **17** |

### Special Education Certificate Program

The Early Childhood Special Education Certificate focuses on working with children from infancy through middle childhood in diverse learning environments.

Course work includes childhood growth and development, guidance of children, causes, expressions, prevention and management of challenging behaviors as well as definition, characteristics, assessment, educational strategies, inclusion, family involvement, and services for children with developmental delays.

Students who complete these courses are eligible to earn a certificate in Special Education. The Special Education certificate will better prepare the student to provide early childhood educational services to special needs populations.

### Special Education Certificate Program (C55220L2)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | |
| EDU 144 | Child Development I | 3 | 0 | 0 | 3 |
| EDU 146 | Child Guidance | 3 | 0 | 0 | 3 |
| | | **6** | **0** | **0** | **6** |
| **Second Semester (Spring)** | | | | | |
| EDU 145 | Child Development II | 3 | 0 | 0 | 3 |
| | | **3** | **0** | **0** | **3** |
| **Third Semester (Fall)** | | | | | |
| EDU 154 | Social/Emotional Behavior Development | 3 | 0 | 0 | 3 |
| EDU 221 | Children with Exceptionalities | 3 | 0 | 0 | 3 |
| | | **6** | **0** | **0** | **6** |
| **Fourth Semester (Spring)** | | | | | |
| EDU 248 | Developmental Delays | 3 | 0 | 0 | 3 |
| | | **3** | **0** | **0** | **3** |
| **Program Totals** | | **18** | **0** | **0** | **18** |

## Infant/Toddler Care Certificate

The curriculum prepares individuals to work with children from infancy to three years of age in diverse learning environments. Students will combine learned theories, competency-based knowledge, and practice in actual settings with young children under the supervision of qualified teachers.

Coursework includes infant/toddler growth and development: physical/nutritional needs of infants and toddlers; safety issues in the care of infants and toddlers; care and guidance; communication skills with parents and children; design and implementation of appropriate curriculum; and other related topics.

Graduates should be prepared to plan and implement developmentally appropriate infant/toddler programs in early childhood settings. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Early Head Start Programs, and other infant/toddler programs.

**Specific Requirements:**

1. General college admission requirements.
2. Three character/employee references by the first day of class.
3. Criminal background checks are required prior to credentialing. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."

### Infant/Toddler Care Certificate Program (C55290)

Program Summary — Hours
Major Courses (EDU prefix) — 17

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| EDU 119 | Intro to Early Childhood Education | 4 | 0 | 0 | 4 |
| EDU 144 | Child Development I | 3 | 0 | 0 | 3 |
| EDU 131 | Child, Family & Community | 3 | 0 | 0 | 3 |
| | | **10** | **0** | **0** | **10** |
| **Second Semester (Spring)** | | | | | |
| EDU 153 | Health, Safety & Nutrition | 3 | 0 | 0 | 3 |
| EDU 153A | Health, Safety & Nutrition Lab | 0 | 2 | 0 | 1 |
| EDU 234 | Infant, Toddlers, and Twos | 3 | 0 | 0 | 3 |
| | | **6** | **2** | **0** | **7** |
| **Program Totals** | | **6** | **2** | **0** | **7** |

## Early Childhood/School-Age Education

This curriculum prepares individuals to work with children in elementary through middle grades in diverse learning environments. Students will combine learned theories with practice in actual settings with school-age children under the supervision of qualified teachers.

Course work includes child growth/development; computer technology in education; physical/nutritional needs of school-age children; care and guidance of school-age children; and communication skills with families and children. Students will foster the cognitive/language, physical/motor, social/emotional, and creative development of school-age populations.

Graduates are prepared to plan and implement developmentally appropriate programs in school-aged environments. Employment opportunities include school-age teachers in child care programs, before/after-school programs, paraprofessional positions in public/ private schools, recreational centers, and other programs that work with school-age populations.

**Specific Requirements**

1. General college admission requirements.
2. Acceptable reports of medical examination by the first day of class.
3. Three character/employment references by the first day of class.
4. Criminal background checks are required prior to assignment to cooperative work experience sites.

### School-Age Education
### Associate in Applied Science Degree (A55440)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 27 |
| Other Courses | 33 |
| Program Total | **75** |

Courses requiring a grade of "C" or better: COE and EDU

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First Year Seminar | 0 | 2 | 0 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| EDU 119 | Intro to Early Childhood Education | 4 | 0 | 0 | 4 |
| EDU 144 | Child Development I | 3 | 0 | 0 | 3 |
| EDU 151 | Creative Activities | 3 | 0 | 0 | 3 |
| EDU 151A | Creative Activities Lab | 0 | 2 | 0 | 1 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | **15** | **6** | **0** | **18** |

| | | | | | |
|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | |
| EDU 118 | Principles and Practice Inst Assistant | 3 | 0 | 0 | 3 |
| EDU 131 | Child, Family, & Community | 3 | 0 | 0 | 3 |
| EDU 145 | Child Development II | 3 | 0 | 0 | 3 |
| EDU 271 | Educational Technology | 2 | 2 | 0 | 3 |
| COM 120 | Interpersonal Communication | 3 | 0 | 0 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | **17** | **2** | **0** | **18** |
| **Third Semester (Summer)** | | | | | |
| EDU 251 | Exploration Activities | 3 | 0 | 0 | 3 |
| EDU 251A | Exploration Activities Lab | 0 | 2 | 0 | 1 |
| MAT 140 | Survey of Mathematics | 3 | 0 | 0 | 3 |
| | | **6** | **2** | **0** | **7** |
| **Fourth Semester (Fall)** | | | | | |
| EDU 146 | Child Guidance | 3 | 0 | 0 | 3 |
| EDU 163 | Classroom Management & Instruction | 3 | 0 | 0 | 3 |
| EDU 221 | Children With Exceptionalities | 3 | 0 | 0 | 3 |
| EDU 280 | Language & Literacy Experiences | 3 | 0 | 0 | 3 |
| EDU 289 | Advanced Issues/School Age | 2 | 0 | 0 | 2 |
| COE 111EC | Work Experience I | 0 | 0 | 10 | 1 |
| | | **14** | **0** | **10** | **15** |
| **Fifth Semester (Spring)** | | | | | |
| COM 140 | Intercultural Communication | 3 | 0 | 0 | 3 |
| EDU 153 | Health, Safety & Nutrition | 3 | 0 | 0 | 3 |
| EDU 153A | Health, Safety & Nutrition Lab | 0 | 2 | 0 | 1 |
| EDU 281 | Instructional Strategies/ Read & Writ | 2 | 2 | 0 | 3 |
| EDU 248 | Developmental Delays | 3 | 0 | 0 | 3 |
| EDU 285 | Internship Experience-School Age | 1 | 9 | 0 | 4 |
| | | **12** | **13** | **0** | **17** |
| **Program Totals** | | **64** | **23** | **10** | **75** |

# Emergency Medical Science

This 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 become 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.

**Specific Requirements**

1. General college admission requirements.
   a. Complete application for admission,
   b. Successfully complete College Placement Test.
   c. High School transcript or GED scores on file with admissions office.
   d. Official transcript of any prior college credit on file with admissions office.
2. Must be 18 years of age at the end of the first semester of the program.
3. Current N.C. driver's license.
4. Acceptable reports of medical examinations and immunizations.
5. Criminal background checks may be required prior to admission to clinical sites.

## Emergency Medical Science
## Associate in Applied Science Degree (A45340)

| Program Summary | Hours |
|---|---|
| General Education | 20 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *8* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 49-50 |
| Other Courses | 6-7 |
| Program Total | **75-77** |

Courses requiring a grade of "C" or better: EMS

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO 168 | Anatomy and Physiology I | 3 | 3 | 0 | 4 |
| CIS 110 | Introduction to Computers (or CIS 111 Basic PC Literacy) | 2 | 2 | 0 | 3 |
| EMS 110 | EMT-Basic | 5 | 6 | 0 | 7 |
| EMS 111 | Prehospital Environment (or EMS 115 Defense Tactics for EMS) | 2 | 2 | 0 | 3 |
| EMS 150 | Emergency Vehicles and EMS Communication | 1 | 3 | 0 | 2 |
| | | **13** | **18** | **0** | **20** |
| **Second Semester (Spring)** | | | | | |
| BIO 169 | Anatomy and Physiology II | 3 | 3 | 0 | 4 |
| EMS 120 | Intermediate Interventions | 2 | 3 | 0 | 3 |
| EMS 121 | EMS Clinical Practicum I | 0 | 0 | 6 | 2 |
| EMS 130 | Pharmacology I for EMS | 1 | 3 | 0 | 2 |
| EMS 131 | Advanced Airway Management | 1 | 2 | 0 | 2 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | **10** | **11** | **6** | **16** |
| **Third Semester (Summer)** | | | | | |
| EMS 210 | Advanced Patient Assessment | 1 | 3 | 0 | 2 |
| EMS 220 | Cardiology | 2 | 6 | 0 | 4 |
| EMS 221 | Clinical Practicum II | 0 | 0 | 9 | 3 |
| | | **3** | **9** | **9** | **9** |
| **Fourth Semester (Fall)** | | | | | |
| EMS 140 | Rescue Scene Management | 1 | 3 | 0 | 2 |
| EMS 140A | Rescue Skills Lab | 0 | 3 | 0 | 1 |
| EMS 231 | Clinical Practicum III | 0 | 0 | 9 | 3 |
| EMS 250 | Advanced Medical Emergencies | 2 | 3 | 0 | 3 |
| EMS 260 | Advanced Trauma Emergencies | 1 | 3 | 0 | 2 |
| ENG 114 | Professional Research & Reporting | 3 | 0 | 0 | 3 |
| SOC 225 | Social Diversity | 3 | 0 | 0 | 3 |
| | | **10** | **12** | **9** | **17** |
| **Fifth Semester (Spring)** | | | | | |
| EMS 230 | Pharmacology II For EMS | 1 | 3 | 0 | 2 |
| EMS 240 | Special Needs Patients | 1 | 2 | 0 | 2 |
| EMS 241 | Clinical Practicum IV | 0 | 0 | 9 | 3 |
| EMS 270 | Life Span Emergencies | 2 | 2 | 0 | 3 |
| EMS 285 | EMS Capstone | 1 | 3 | 0 | 2 |
| PHI 240 | Introduction to Ethics | 3 | 0 | 0 | 3 |
| | | **8** | **10** | **9** | **15** |
| **Program Totals** | | **44** | **60** | **33** | **77** |

## Emergency Medical Science Bridge Program

The Emergency Medical Science Bridge Program is designed to allow currently certified non-degree paramedics to earn an Associate in Applied Science (A.A.S.) degree in Emergency Medical Science. Paramedics enrolled in the bridge program must complete the EMS Bridge, Rescue Scene Management, Pharmacology II for EMS, Emergency Vehicles and EMS Communications, and EMS Capstone courses along with all related and general education course requirements for the EMS degree.

**Specific Requirements**

1. General college admission requirements.
   a. Complete application for admission.
   b. Successfully complete College Placement Test.
   c. High School transcript or GED scores on file with admissions office.
   d. Official transcript of any prior college credit on file with admissions office.
2. Possess current North Carolina driver's license.
3. Complete interview with EMS Department faculty.
4. At least 4,000 hours of patient contact at the paramedic level as evidenced by the signature of the director of the EMS agency with which the paramedic is affiliated and the medical director of the ALS system with which the paramedic is affiliated.
5. Current EMT-Paramedic certification.* (A copy of the paramedic education program transcript must be on file in the EMS Department.)
6. Current Basic Cardiac Life Support certification.*
7. Current Advanced Cardiac Life Support certification.*
8. Current Basic Trauma Life Support certification.*
9. Current Pediatric Advanced Life Support certification.*

* Copies of all current certifications must be on file in the EMS Department.

The above certifications and experience (4-9) will provide 41 hours of proficiency credit toward the A.A.S. degree and will count toward the A-B Tech residency requirement. These 41 hours represent the major area (EMS) courses required for EMT-Basic, EMT-Intermediate, and Paramedic certification that are not required as part of the EMS Bridge Program.

## Emergency Medical Science Bridge Program Associate in Applied Science Degree (A45340BR)

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 168 | Human Anatomy and Physiology I | 3 | 3 | 0 | 4 |
| CIS | 110 | Introduction to Computers (or CIS 111 Basic PC Literacy) | 2 | 2 | 0 | 3 |
| EMS | 140 | Rescue Scene Management | 1 | 3 | 0 | 2 |
| EMS | 140A | Rescue Skills Lab | 0 | 3 | 0 | 1 |
| EMS | 150 | Emergency Vehicles and EMS Communications | 1 | 3 | 0 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | | **10** | **14** | **0** | **15** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 169 | Anatomy and Physiology II | 3 | 3 | 0 | 4 |
| EMS | 230 | Pharmacology II For EMS | 1 | 3 | 0 | 2 |
| EMS | 280 | EMS Bridge Course | 2 | 2 | 0 | 3 |
| EMS | 285 | EMS Capstone | 1 | 3 | 0 | 2 |
| | | | **7** | **11** | **0** | **11** |
| **Third Semester (Summer)** | | | | | | |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 0 | 3 |
| PHI | 240 | Introduction to Ethics | 3 | 0 | 0 | 3 |
| SOC | 225 | Social Diversity | 3 | 0 | 0 | 3 |
| | | | **9** | **0** | **0** | **9** |
| **Program Totals** | | | **26** | **25** | **0** | **35*** |

*At least 25% of required credit hours (19 credit hours) must be earned at A-B Tech.

# Fire Protection Technology

This curriculum is designed to provide individuals with technical and professional knowledge to make decisions regarding fire protection for both public and private sectors. It also provides a sound foundation for continuous higher learning in fire protection, administration, and management.

Coursework includes classroom and laboratory exercises to introduce the student to various aspects of fire protection. Students will learn technical and administrative skills such as hydraulics, hazardous materials, arson investigation, fire protection safety, fire suppression management, law, and codes.

Graduates should qualify for employment or advancement in governmental agencies, industrial firms, insurance rating organizations, educational organizations, and municipal fire departments. Employed persons should have opportunities for skilled and supervisory-level positions with their current organizations.

## Fire Protection Technology Associate in Applied Science Degree – Day and Evening Schedule (A55240)

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *9* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 15 |
| Other Courses | 40 |
| Program Total | 73 |

Courses requiring a grade of "C" or better: FIP

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| FIP | 120 | Introduction to Fire Protection | 3 | 0 | 3 |
| | | | **8** | **4** | **10** |
| **Second Semester (Spring)** | | | | | |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 3 |
| FIP | 124 | Fire Prevention & Public Education | 3 | 0 | 3 |
| FIP | 128 | Detection & Investigation | 3 | 0 | 3 |
| | | | **9** | **0** | **9** |
| **Third Semester (Summer)** | | | | | |
| FIP | 140 | Industrial Fire Protection | 3 | 0 | 3 |
| FIP | 228 | Local Govt Finance | 3 | 0 | 3 |
| | | | **6** | **0** | **6** |
| **Fourth Semester (Fall)** | | | | | |
| FIP | 132 | Building Construction | 3 | 0 | 3 |
| FIP | 230 | Chemistry of Hazardous Materials I | 5 | 0 | 5 |
| MAT | 115 | Mathematical Models | 2 | 2 | 3 |
| | | | **10** | **2** | **11** |
| **Fifth Semester (Spring)** | | | | | |
| COM | 231 | Public Speaking | 3 | 0 | 3 |
| FIP | 136 | Inspections & Codes | 3 | 0 | 3 |
| FIP | 152 | Fire Protection Law | 3 | 0 | 3 |
| FIP | 220 | Fire Fighting Strategies | 3 | 0 | 3 |
| | | | **12** | **0** | **12** |
| **Sixth Semester (Summer)** | | | | | |
| FIP | 232 | Hydraulics and Water Distribution | 2 | 2 | 3 |
| FIP | 236 | Emergency Management | 3 | 0 | 3 |
| | | | **5** | **2** | **6** |

| | | | | | |
|---|---|---|---|---|---|
| **Seventh Semester (Fall)** | | | | | |
| FIP | 224 | Instructional Methodology | 4 | 0 | 4 |
| FIP | 240 | Fire Service Supervision | 3 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 3 |
| | | | **10** | **0** | **10** |
| **Eighth Semester (Spring)** | | | | | |
| FIP | 260 | Fire Protection Planning | 3 | 0 | 3 |
| FIP | 276 | Managing Fire Services | 3 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | | **9** | **0** | **9** |
| **Program Totals** | | | **69** | **8** | **73** |

## Fire Protection Technology Certificate – Day and Evening Schedule (C55240L1)

The certificate in Fire Protection Technology provides recognition of the accomplishment of selected courses within the Fire Protection Technology program. These courses should be of particular value to those who are serving or who aspire to serve as officers in fire departments and similar organizations as these courses are comparable with the requirements of NFPA 1021, the national Standard for Fire Officer Professional Qualifications, for Fire Officer 1 and 2.

| Program Summary | Hours |
|---|---|
| Major courses (FIP prefix) | 15 |
| Related general education courses | 3 |
| Program Total | 18 |

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| FIP | 132 | Building Construction | 3 | 0 | 3 |
| FIP | 240 | Fire Service Supervision | 3 | 0 | 3 |
| | | | **9** | **0** | **9** |
| **Second Semester (Spring)** | | | | | |
| FIP | 152 | Fire Protection Law | 3 | 0 | 3 |
| FIP | 220 | Fire Fighting Strategies | 3 | 0 | 3 |
| FTP | 276 | Managing Fire Services | 3 | 0 | 3 |
| | | | **9** | **0** | **9** |
| **Certificate Totals** | | | **18** | **0** | **18** |

# Human Services Technology/Social Services

The Human Services Technology/Social Services concentration prepares students for direct service delivery work in social service agencies. The curriculum enables students to link theory and practice through interactive classroom activities developing a skill-based academic foundation.

Course work includes the history of the social service movement, ethical issues, case management, diversity issues, law in the practice of social work, and community resources. Students also gain skills in interviewing and counseling techniques.

Graduates should qualify for employment with local, county, state, and federal government social service agencies. Employment includes family and child assistance, rehabilitation health services, medical assistance, youth services, aging, and developmentally disabled programs in public and private settings.

**Specific Requirements**

1. General college admission requirements.
2. Three character references by the end of the first semester of enrollment in this program.
3. Acceptable reports of medical examination and immunization as required by a Co-op site.
4. Compliance with relevant standards outlined in the College's "Guidelines for Students at Risk" brochure.

## Human Services Technology/Social Services Associate in Applied Science Degree (A4538D)

| Program Summary | Hours |
|---|---|
| General Education | 17 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 25 |
| Concentration | 15 |
| Other Courses | 18 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: COE, DDT, HSE, MHA, PSY, SAB, SOC and SWK.

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| HSE | 110 | Introduction to Human Services | 2 | 2 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| SWK | 113 | Working with Diversity | 3 | 0 | 0 | 3 |
| | | | **13** | **6** | **0** | **16** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| PSY | 241 | Developmental Psychology | 3 | 0 | 0 | 3 |
| SAB | 110 | Substance Abuse Overview | 3 | 0 | 0 | 3 |
| HSE | 125 | Counseling | 2 | 2 | 0 | 3 |
| SWK | 110 | Introduction to Social Work | 3 | 0 | 0 | 3 |
| | | | **15** | **4** | **0** | **17** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Third Semester (Summer)** | | | | | | |
| HUM | 115 | Critical Thinking | 3 | 0 | 0 | 3 |
| PSY | 281 | Abnormal Psychology | 3 | 0 | 0 | 3 |
| HSE | 220 | Case Management | 2 | 2 | 0 | 3 |
| SWK | 115 | Community Resources | 2 | 2 | 0 | 3 |
| | | | **10** | **4** | **0** | **12** |
| **Fourth Semester (Fall)** | | | | | | |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| DDT | 110 | Developmental Disabilities | 3 | 0 | 0 | 3 |
| HSE | 112 | Group Process I | 1 | 2 | 0 | 2 |
| HSE | 123 | Interviewing Techniques | 2 | 2 | 0 | 3 |
| HSE | 225 | Crisis Intervention | 3 | 0 | 0 | 3 |
| SWK | 220 | SWK Issues in Client Services | 3 | 0 | 0 | 3 |
| | | | **15** | **4** | **0** | **17** |
| **Fifth Semester (Spring)** | | | | | | |
| SOC | 213 | Sociology of the Family | 3 | 0 | 0 | 3 |
| MHA | 238 | Psychopathology | 3 | 0 | 0 | 3 |
| HSE | 210 | Human Services Issues | 2 | 0 | 0 | 2 |
| SWK | 214 | Social Work Law | 3 | 0 | 0 | 3 |
| COE | 111SS | Co-op Work Experience I | 0 | 0 | 10 | 1 |
| COE | 115SS | Work Experience Seminar I | 1 | 0 | 0 | 1 |
| | | | **12** | **0** | **10** | **13** |
| **Program Totals** | | | **65** | **18** | **10** | **75** |

# 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, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

Graduates of CAAHEP-accredited medical assisting programs may be eligible to sit for the American Association of Medical Assistants' Certification Examination to become Certified Medical Assistants. Employment opportunities include physicians' offices, health maintenance organizations, health departments, and hospitals.

**Specific Requirements**

1. General college admission requirements.
   a. Complete application for admission.
   b. Successfully complete College Placement Test.
   c. High School transcript or GED scores on file with admissions office.
   d. Official transcript of any prior college credit on file with admissions office.
2. High School units:
   a. Algebra, biology, chemistry strongly recommended.
3. Acceptable reports of medical examinations by first day of clinical.
4. Successful completion of keyboarding skills placement test.
5. Satisfactory completion of required immunizations by first day of clinical.
6. Criminal background checks may be required prior to admissions to clinical sites.
7. Current CPR certification for the Professional Rescuer or Healthcare Provider by the first day of clinical.
8. This program may have a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

## Medical Assisting
## Associate in Applied Science Degree (A45400)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 33 |
| Other Courses | 27 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: BIO, MED and OST

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MED | 110 | Orientation to Medical Assisting | 1 | 0 | 0 | 1 |
| MED | 121 | Medical Terminology I | 3 | 0 | 0 | 3 |
| MED | 130 | Admin Office Procedures I | 1 | 2 | 0 | 2 |
| MED | 138 | Infection Hazard Control | 2 | 0 | 0 | 2 |
| OST | 131 | Keyboarding | 1 | 2 | 0 | 2 |
| | | | **15** | **6** | **0** | **18** |
| **Second Semester (Spring)** | | | | | | |
| MAT | 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| MED | 118 | Medical Law and Ethics | 2 | 0 | 0 | 2 |
| MED | 122 | Medical Terminology II | 3 | 0 | 0 | 3 |
| MED | 131 | Admin Office Procedures II | 1 | 2 | 0 | 2 |
| MED | 140 | Exam Room Procedures I | 3 | 4 | 0 | 5 |
| MED | 274 | Diet Therapy and Nutrition | 3 | 0 | 0 | 3 |
| | | | **14** | **8** | **0** | **18** |

| | | | | | |
|---|---|---|---|---|---|
| **Third Semester (Summer)** | | | | | |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| MED 270 | Symptomatology | 2 | 2 | 0 | 3 |
| MED 272 | Drug Therapy | 3 | 0 | 0 | 3 |
| | | **7** | **4** | **0** | **9** |
| **Fourth Semester (Fall II)** | | | | | |
| COM 120 | Intro to Interpersonal Communications (or COM 140) | 3 | 0 | 0 | 3 |
| MED 150 | Laboratory Procedures I | 3 | 4 | 0 | 5 |
| MED 240 | Exam Room Procedures II | 3 | 4 | 0 | 5 |
| SPA 120 | Spanish for the Workplace | 3 | 0 | 0 | 3 |
| | | **12** | **8** | **0** | **16** |
| **Fifth Semester (Spring II)** | | | | | |
| MED 260 | MED Clinical Externship | 0 | 0 | 15 | 5 |
| MED 262 | MED Clinical Perspectives | 1 | 0 | 0 | 1 |
| MED 276 | Patient Education | 1 | 2 | 0 | 2 |
| | Social/Behavioral Sciences Elective | 3 | 0 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 0 | 3 |
| | | **8** | **2** | **15** | **14** |
| **Program Totals** | | **56** | **28** | **15** | **75** |

## Medical Laboratory Technology

This 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.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N River Rd. Suite 720, Rosemont, IL 60018, (773)-714-8880, **www.naacls.org**

**Specific Requirements**

1. General college admission requirements.
2. High School units:
   a. Algebra required.
   b. Biology, chemistry, and geometry strongly recommended.
3. Acceptable reports of medical examinations by first day of Practicum MLT 252.
4. Satisfactory completion of required immunizations by first day of MLT 252 Practicum I.
5. Criminal background checks may be required prior to admission to clinical sites.
6. Current CPR certification for the Professional Rescuer or Healthcare Provider by the first day of MLT 252 Practicum I.

## Medical Laboratory Technology Associate in Applied Science Degree (A45420)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 55 |
| Other Courses | 4 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BIO, CHM, and MLT

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| BIO 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| CHM 130 | General, Organic & Biochemistry | 3 | 0 | 0 | 3 |
| CHM 130A | General, Organic & Biochemistry Lab | 0 | 2 | 0 | 1 |
| MAT 115 | Mathematics Models (or MAT 140 Survey of Mathematics) | 2 | 2 | 0 | 3 |
| MLT 110 | Introduction to MLT | 2 | 3 | 0 | 3 |
| MLT 140 | Introduction to Microbiology | 2 | 3 | 0 | 3 |
| | | **13** | **12** | **0** | **18** |
| **Second Semester (Spring)** | | | | | |
| MLT 120 | Hematology/Hemostasis I | 3 | 3 | 0 | 4 |
| MLT 126 | Immunology and Serology | 1 | 2 | 0 | 2 |
| MLT 130 | Clinical Chemistry I | 3 | 3 | 0 | 4 |
| MLT 240 | Special Clinical Microbiology | 2 | 3 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| | | **12** | **11** | **0** | **16** |
| **Third Semester (Summer)** | | | | | |
| MLT 111 | Urinalysis & Body Fluids | 1 | 3 | 0 | 2 |
| MLT 127 | Transfusion Medicine | 2 | 3 | 0 | 3 |
| MLT 252 | MLT Practicum I | 0 | 0 | 6 | 2 |
| | | **3** | **6** | **6** | **7** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fourth Semester (Fall)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| SOC | 215 | Group Processes (or PSY 150 General Psychology) | 3 | 0 | 0 | 3 |
| MLT | 254 | MLT Practicum I | 0 | 0 | 12 | 4 |
| MLT | 255 | MLT Practicum I | 0 | 0 | 15 | 5 |
| MLT | 261 | MLT Practicum II | 0 | 0 | 3 | 1 |
| | | | **5** | **2** | **30** | **16** |
| **Fifth Semester (Spring)** | | | | | | |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 0 | 3 |
| PHI | 240 | Introduction to Ethics | 3 | 0 | 0 | 3 |
| MLT | 215 | Professional Issues | 1 | 0 | 0 | 1 |
| MLT | 265 | MLT Practicum II | 0 | 0 | 15 | 5 |
| MLT | 275 | MLT Practicum III | 0 | 0 | 15 | 5 |
| | | | **7** | **0** | **30** | **17** |
| **Program Totals** | | | **40** | **31** | **66** | **74** |

## Medical Sonography

The medical sonography curriculum provides knowledge and clinical skills in the application of high frequency sound waves to image internal body structures.

Course work includes physics, cross-sectional anatomy, abdominal, introductory vascular, and obstetrical/gynecological sonography. Competencies are attained in identification of normal anatomy and pathological processes, use of equipment, fetal growth and development, integration of related imaging, and patient interaction skills.

Graduates of accredited programs may be eligible to take examinations in ultrasound physics and instrumentation and specialty examinations administered by the American Registry of Diagnostic Medical Sonographers (ARDMS) and find employment in clinics, physicians' offices, mobile services, hospitals, and educational institutions.

Graduates will be eligible to take all ARDMS examinations in General and Vascular concentrations.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. High school biology and one unit of high school algebra.
4. Keyboarding skills are highly recommended.
5. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to department chair before classes begin.
6. Either first dose of Hepatitis B vaccine or completion of series.
7. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider, which must be renewed annually.
8. Completion of an observation in an approved Sonography area. Details are available from the Medical Sonography faculty.
9. Criminal background checks may be required prior to admission to clinical sites.
10. Sonography students will be required to complete clinical rotations which may require them to travel as much as two hours from campus.

## Medical Sonography
## Associate in Applied Science Degree (A45440)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 54 |
| Other Courses | 7 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: BIO and SON

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| PHY | 125 | Health Sciences Physics | 3 | 2 | 0 | 4 |
| SON | 110 | Intro to Sonography | 1 | 3 | 3 | 3 |
| SON | 130 | Abdominal Sonography I | 2 | 3 | 0 | 3 |
| | | | **13** | **10** | **3** | **18** |
| **Second Semester (Spring)** | | | | | | |
| MAT | 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| SON | 111 | Sonographic Physics | 3 | 3 | 0 | 4 |
| SON | 120 | SON Clinical Ed I | 0 | 0 | 15 | 5 |
| SON | 131 | Abdominal Sonography II | 1 | 3 | 0 | 2 |
| SON | 140 | Gynecological Sonography | 2 | 0 | 0 | 2 |
| | | | **8** | **8** | **15** | **16** |

| | | | | | |
|---|---|---|---|---|---|
| **Third Semester (Summer)** | | | | | |
| SON 121 | SON Clinical Ed II | 0 | 0 | 15 | 5 |
| SON 241 | Obstetrical Sonography I | 2 | 0 | 0 | 2 |
| | | **2** | **0** | **15** | **7** |
| **Fourth Semester (Fall)** | | | | | |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COM 231 | Public Speaking | 3 | 0 | 0 | 3 |
| SON 220 | SON Clinical Ed III | 0 | 0 | 24 | 8 |
| SON 242 | Obstetrical Sonography II | 2 | 0 | 0 | 2 |
| SON 250 | Vascular Sonography | 1 | 3 | 0 | 2 |
| | | **8** | **5** | **24** | **18** |
| **Fifth Semester (Spring)** | | | | | |
| SON 221 | SON Clinical Ed IV | 0 | 0 | 24 | 8 |
| SON 225 | Case Studies | 0 | 3 | 0 | 1 |
| SON 289 | Sonographic Topics | 2 | 0 | 0 | 2 |
| | Humanities Elective | 3 | 0 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **8** | **3** | **24** | **17** |
| **Program Totals** | | **39** | **26** | **81** | **76** |

## Ophthalmic Medical Assistant

The Ophthalmic Medical Assistant Program prepares individuals to perform ophthalmic procedures under the supervision of a licensed physician specializing in Ophthalmology. Course work includes lecture, laboratory, and clinical training in ocular measurements; ocular testing; lensometry; administering topical and oral medications; eye care; and caring for instruments.

Graduates are employed in medical institutions, clinics, or physician practices.

Graduates may qualify as candidates to take the Joint Commission on Allied Health Personnel, Ophthalmology National Certification Exam.

**Program offered in collaboration with Caldwell Community College and Technical Institute. General Education classes may be taken at A-B Tech. Major area (OPH) classes would be taken at Caldwell Community College and Technical Institute. The Diploma is awarded by Caldwell Community College and Technical Institute.**

### Ophthalmic Medical Assistant Diploma (D45510)

See Allied Health and Public Service Division for additional information.

| | | Credit Hrs. |
|---|---|---|
| **Required Courses (May be taken at A-B Tech)** | | |
| ACA 115 | First Year Seminar | 1 |
| COM 120 | Intro to Interpersonal Communications | 3 |
| ENG 111 | Expository Writing | 3 |
| PSY 150 | General Psychology | 3 |
| **Required Courses: (Taken at Caldwell CC&TI)** | | **34** |
| OPH 103 | Intro to Diseases of Eye | 2 |
| OPH 104 | Basic Ophthalmic Pharma. | 2 |
| OPH 105 | Opthalmic Clin Proc I | 2 |
| OPH 106 | Ophthalmic Med. Asst. Pract. I | 9 |
| OPH 107 | Opthalmic Clin Preoc II | 2 |
| OPH 108 | Ophthalmic Patient Care | 2 |
| OPH 109 | Opthal. & Basic Refract | 2 |
| OPH 110 | Op Med Asst Practicum II | 9 |
| OPH 150 | Intro to Ophth Med Assist | 2 |
| OPH 151 | Ocular Anat. and Physiology | 2 |

## Phlebotomy

This 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, physician's offices, and other health care settings, and may be eligible to test for national certification as phlebotomy technicians.

This program is approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Rd. Suite 720 Rosemont, IL 60018, (773)-714-8880 **www.naacls.org**

**Specific Requirements**

1. General college admission requirements.
2. Acceptable reports of medical examinations by first day of class.
3. Satisfactory completion of required immunizations.
4. Criminal background checks may be required prior to admission to clinical sites.
5. Current CPR certification for the Professional Rescuer or Healthcare Provider by the first day of class.

### Phlebotomy Certificate (C45600)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **Program offered Fall or Spring** | | | | | |
| PBT 100 | Phlebotomy Technology | 5 | 2 | 0 | 6 |
| PBT 101 | Phlebotomy Practicum | 0 | 0 | 9 | 3 |
| PSY 118 | Interpersonal Psychology (or PSY 150 General Psychology) | 3 | 0 | 0 | 3 |
| **Program Totals** | | **8** | **2** | **9** | **12** |

# Practical Nursing

This curriculum prepares individuals with the knowledge and skills to provide nursing care to children and adults. Students will participate in assessment, planning, implementing, and evaluating nursing care.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-PN) which is required for practice as a Practical Nurse. Employment opportunities include hospitals, rehabilitation facilities, long-term care facilities, clinics, physician's offices, and home health agencies.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. Final admission to the Practical Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
4. Satisfactory completion of required immunizations.
5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
6. Students applying to the Practical Nursing Program are encouraged to have successfully completed: BIO 168, BIO 169, ENG 111, and PSY 150 prior to program admission due to the rigorous nature of the Practical Nursing curriculum. Students with limited technology skills are encouraged to complete CIS 110 as an aid to understanding computer documentation and use of informatics in clinical agencies.
7. Effective January 1, 2002, applicants for initial licensure in North Carolina must have a criminal background check. The clinical site may require a criminal background check and/or drug testing prior to participation in the clinical component. If any clinical facility refuses to allow the student to participate in clinical experiences in that clinical agency, the student will not be able to progress in the program.
8. Admission with advanced standing is subject to space available in the clinical component of the nursing program. Persons who begin their nursing education at Asheville-Buncombe Technical Community College have preference in admission over students requesting transfer into the program. Space will be allotted to transfer students only when no students who have previously enrolled in the A-B Tech Practical Nursing Program are requesting and have qualified for re-entry.
9. To be eligible for admission to the Fall 2009 Practical Nursing Program, applicants will be required to hold a documented current unrestricted credential as a Nursing Assistant I (NA I) from the North Carolina Nurse Aide Registry and the Division of Health Service Regulation by June 15, 2009.

To be eligible for admission in Fall 2010, all nursing program applicants must, by January 29, 2010:

1. Provide documentation of successful completion of a NC approved Certified Nurse Aide I Program which includes theory, lab, and clinical components*. (A copy of a college transcript or a notarized course completion certificate will be acceptable documentation)

   *Challenging the Nurse Aide I examination will not meet this requirement.

   and

2. Hold a documented, current, unrestricted credential as a Nurse Aid I (NAI) from the North Carolina Nurse Aid Registry and the Division of Health Service Regulation. (A copy of current listing on the NC DHSR Nurse Aid Registry Website by January 29, 2010 will be acceptable documentation)

## Practical Nursing Diploma (D45660)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 33 |
| Other Courses | 8 |
| Program Total | 47 |

Courses requiring a grade of "C" or better: BIO and NUR

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 168 | Anatomy and Physiology I | 3 | 3 | 0 | 4 |
| NUR | 101 | Practical Nursing I | 7 | 6 | 6 | 11 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | | **13** | **9** | **6** | **18** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 169 | Anatomy and Physiology II | 3 | 3 | 0 | 4 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| NUR | 102 | Practical Nursing II | 8 | 0 | 12 | 12 |
| | | | **14** | **3** | **12** | **19** |
| **Third Semester (Summer)** | | | | | | |
| NUR | 103 | Practical Nursing III | 6 | 0 | 12 | 10 |
| | | | **6** | **0** | **12** | **10** |
| **Program Totals** | | | **33** | **12** | **30** | **47** |

# 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.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. High school biology and one unit of high school algebra.
4. Keyboarding skills are highly recommended.
5. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to the department chair before classes begin.
6. Either first dose of Hepatitis B vaccine or completion of series.
7. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider which must be renewed annually.
8. Completion of a 12-hour observation in the Radiology department at one of the clinical affiliates. Details are available in the Admissions Office.
9. Criminal background checks may be required prior to admission to clinical sites.

**Notice**

Candidates for certification from the American Registry of Radiologic Technologists (ARRT) must comply with the "Rules of Ethics" contained in the ARRT Standards of Ethics. Any conviction of a crime, including a felony, a gross misdemeanor, or a misdemeanor with the sole exception of speeding and parking violations must be investigated by the ARRT in order to determine eligibility for the certification examination. Additional information may be obtained from the department chairperson or on the ARRT website at **www.arrt.org**.

Radiography students will be required to complete clinical rotations which may require them to travel as much as one hour from campus. Clinical affiliates are currently located in Asheville, Hendersonville, Fletcher, Brevard, Weaverville and Marion. Radiography students may be expected to complete a four to eight week rotation during the late afternoon-early evening hours (3:30 - 10 p.m.) at some time during their clinic education.

## Radiography
## Associate in Applied Science Degree (A45700)

| Program Summary | Hours |
|---|---|
| General Education | 17 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 53 |
| Other Courses | 5 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: RAD

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| RAD | 110 | Radiography Introduction & Patient Care | 2 | 3 | 0 | 3 |
| RAD | 111 | RAD Procedures I | 3 | 3 | 0 | 4 |
| RAD | 151 | RAD Clinical Education I | 0 | 0 | 6 | 2 |
| RAD | 182 | RAD Clinical Elective | 0 | 0 | 6 | 2 |
| | | | **12** | **8** | **12** | **19** |
| **Second Semester (Spring)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| RAD | 112 | RAD Procedures II | 3 | 3 | 0 | 4 |
| RAD | 121 | Radiographic Imaging I | 2 | 3 | 0 | 3 |
| RAD | 161 | RAD Clinical Education II | 0 | 0 | 15 | 5 |
| | | | **10** | **8** | **15** | **18** |
| **Third Semester (Summer)** | | | | | | |
| RAD | 122 | Radiographic Imaging II | 1 | 3 | 0 | 2 |
| RAD | 131 | Radiographic Physics I | 1 | 3 | 0 | 2 |
| RAD | 171 | RAD Clinical Education III | 0 | 0 | 12 | 4 |
| | | | **2** | **6** | **12** | **8** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fourth Semester (Fall)** | | | | | | |
| RAD | 211 | RAD Procedures III | 2 | 3 | 0 | 3 |
| RAD | 231 | Radiographic Physics II | 1 | 3 | 0 | 2 |
| RAD | 241 | Radiobiology/Protection | 2 | 0 | 0 | 2 |
| RAD | 251 | RAD Clinical Education IV | 0 | 0 | 21 | 7 |
| | | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | | **8** | **6** | **21** | **17** |
| **Fifth Semester (Spring)** | | | | | | |
| PHI | 240 | Introduction to Ethics | 3 | 0 | 0 | 3 |
| RAD | 245 | RAD Quality Management | 1 | 3 | 0 | 2 |
| RAD | 261 | RAD Clinical Education V | 0 | 0 | 21 | 7 |
| RAD | 271 | Radiography Capstone | 0 | 3 | 0 | 1 |
| | | | **4** | **6** | **21** | **13** |
| **Program Totals** | | | **36** | **34** | **81** | **75** |

## Surgical Technology

This 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.

Graduates of accredited programs will be eligible to apply to take the national certification exam for surgical technologists which is administered by the National Board on Surgical Technology and Surgical Assisting. Employment opportunities include labor/delivery/emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

**Specific Requirements**

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.

www.abtech.edu/Student_Services/admissions/allied_health.asp

3. Final admission to the Surgical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe care to the public.
4. Satisfactory completion of required immunizations.
5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
6. Clinical agencies and/or credentialing bodies may require criminal background checks prior to admission to clinical sites or issuance of credentials.
7. Students applying to the Surgical Technology program are encouraged to have successfully completed: ACA 115, BIO 163 (or BIO 168 and BIO 169), BIO 175, CIS 110, and ENG 111 prior to program admission due to the rigorous nature of the Surgical Technology curriculum.

## Surgical Technology
## Associate in Applied Science Degree (A45740)

| Program Summary | Hours |
|---|---|
| General Education | 17 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 37 |
| Other Courses | 13 |
| Program Total | 67 |

Courses requiring a grade of "C" or better: BIO and SUR

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO | 163 | Basic Anatomy & Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| SUR | 110 | Introduction to Surgical Technology | 3 | 0 | 0 | 3 |
| SUR | 111 | Periop Patient Care | 5 | 6 | 0 | 7 |
| | | | **15** | **10** | **0** | **19** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 175 | General Microbiology | 2 | 2 | 0 | 3 |
| SUR | 122 | Surgical Procedures I | 5 | 3 | 0 | 6 |
| SUR | 123 | Surgical Clinical I | 0 | 0 | 21 | 7 |
| | | | **7** | **5** | **21** | **16** |
| **Third Semester (Summer)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| SUR | 134 | Surgical Procedures II | 5 | 0 | 0 | 5 |
| SUR | 135 | Surgical Clinical II | 0 | 0 | 12 | 4 |
| SUR | 137 | Professional Success Preparation | 1 | 0 | 0 | 1 |
| | | | **8** | **2** | **12** | **13** |
| **Fourth Semester (Fall)** | | | | | | |
| BUS | 135 | Principles of Supervision | 3 | 0 | 0 | 3 |
| ENG | 114 | Professional Research & Reporting (or COM 120 Interpersonal Comm.) | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| SUR | 211 | Advanced Theoretical Concepts | 2 | 0 | 0 | 2 |
| | | | **11** | **0** | **0** | **11** |

| | | | | | |
|---|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | | |
| HUM | 115 | Critical Thinking (or PHI 240 Introduction to Ethics) | 3 | 0 | 0 | 3 |
| SOC | 215 | Group Processes | 3 | 0 | 0 | 3 |
| SUR | 210 | Advanced Clinical Practice | 0 | 0 | 6 | 2 |
| | | | **6** | **0** | **6** | **8** |
| **Program Totals** | | | **47** | **17** | **39** | **67** |

## Surgical Technology Diploma (D45740)

| Program Summary | Hours |
|---|---|
| General Education | 8 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| Core Courses | 33 |
| Other Courses | 7 |
| Program Total | 48 |

Courses requiring a grade of "C" or better: BIO and SUR

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO | 163 | Basic Anatomy & Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| SUR | 110 | Introduction to Surgical Technology | 3 | 0 | 0 | 3 |
| SUR | 111 | Perioperative Patient Care | 5 | 6 | 0 | 7 |
| | | | **15** | **10** | **0** | **19** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 175 | General Microbiology | 2 | 2 | 0 | 3 |
| SUR | 122 | Surgical Procedures I | 5 | 3 | 0 | 6 |
| SUR | 123 | Surgical Clinical I | 0 | 0 | 21 | 7 |
| | | | **7** | **5** | **21** | **16** |
| **Third Semester (Summer)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| SUR | 134 | Surgical Procedures II | 5 | 0 | 0 | 5 |
| SUR | 135 | Surgical Clinical II | 0 | 0 | 12 | 4 |
| SUR | 137 | Professional Success Preparation | 1 | 0 | 0 | 1 |
| | | | **8** | **2** | **12** | **13** |
| **Program Totals** | | | **30** | **17** | **33** | **48** |

## Surgical Technology Bridge Program

The surgical technology bridge program is designed to allow currently certified non-degree surgical technologists to earn an Associate in Applied Science (A.A.S.) degree in surgical technology. Surgical technologists enrolled in the bridge program must have completed their surgical technology certificate or diploma at a Commission on Accreditation for Allied Health Education Programs (CAAHEP) accredited surgical technology program. All major courses along with all related and general education course requirements must be met for the Surgical Technology Associate in Applied Science Degree.

**Specific Requirements**

1. General college admission requirements.
   a. Complete application for admission
   b. Successfully complete college placement test.
   c. High school transcript or GED scores on file with admissions office.
   d. Official transcript of any prior college credit on file with admissions office.
   e. Diploma or Certificate in Surgical Technology from a CAAHEP accredited program.*
2. Current Basic Cardiac Life Support for the health care provider.*
3. Final admission to the Surgical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe care to the public.*
4. Satisfactory completion of required immunizations*
5. Current Certification in Surgical Technology (CST) through the NBSTSA (National Board on Surgical Technology and Surgical Assisting) prior to taking SUR 210 course.*
6. Two letters of recommendation from a previous or current director, supervisor, operating room educator, or specialty service line team leader.*
7. A letter documenting 1,500 hours or more work experience signed by an operating room director or supervisor that validates the work experience.*

*Copies of 1e. as well as 2-7 must be on file with the surgical technology department.

The CST and surgical technology certificate or diploma will provide 33 hours of credit towards the A.A.S. degree. The program will accept transferred curriculum courses from regionally accredited institutions in related and general education coursework, as well as major area coursework. Students must earn a minimum of 25% of all A.A.S. courses at A-B Tech.

Surgical technology, related and general education courses can be completed at the student's own pace. It is understood that most students are employed full time during their A.A.S. pursuit. General education courses are offered fall, spring and summer semesters. Surgical technology courses: SUR 210 and SUR 211 are offered during fall and spring semesters respectively.

## Surgical Technology Bridge Program Associate in Applied Science Degree (A45740BR)

| Program Summary | Hours |
|---|---|
| General Education | 17 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 37 |
| Other Courses | 12 |
| Program Total | 66 |

Courses requiring a grade of "C" or better: BIO and SUR

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 163 | Basic Anatomy & Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| SOC | 215 | Group Processes | 3 | 0 | 0 | 3 |
| SUR | 211 | Advanced Theoretical Concepts | 2 | 0 | 0 | 2 |
| | | | **15** | **2** | **0** | **16** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 175 | General Microbiology | 2 | 2 | 0 | 3 |
| BUS | 135 | Principles of Supervision | 3 | 0 | 0 | 3 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| ENG | 114 | Professional Research & Reporting (or COM 120 Interpersonal Comm.) | 3 | 0 | 0 | 3 |
| HUM | 115 | Critical Thinking (or PHI 240 Introduction to Ethics) | 3 | 0 | 0 | 3 |
| SUR | 210 | Advanced Clinical Practice | 0 | 0 | 6 | 2 |
| | | | **13** | **4** | **6** | **17** |
| **Program Totals excluding SUR Diploma courses** | | | **28** | **6** | **6** | **33** |

**Program Totals with SUR Diploma/Certificate courses: 33 credits plus above 33 credits = 66**

*At least 25% of required total credit hours (17 hours) must be earned at A-B Tech.

## Veterinary Medical Technology

This curriculum is designed to prepare individuals to assist veterinarians in preparing animals, equipment, and medications for examination and surgery; collecting specimens; performing laboratory, radiographic, anesthetic, and dental procedures; assisting in surgery; and providing proper husbandry of animals and their environment.

Course work includes instruction in veterinary anatomy, nutrition, parasitology, pathology, physiology, radiology, terminology, zoology, office practices, laboratory techniques, dentistry, and small and large animal clinical practices.

Graduates of accredited programs may be eligible to take state and national examinations administered by the North Carolina Veterinary Medical Board. Graduates may be employed in veterinary clinics; diagnostic, research, or pharmaceutical laboratories; zoos; academic institutions; or other areas associated with animal care.

**Specific Requirements**

1. General college admission requirements.
2. High School units:
   a. Chemistry required
   b. Biology and Algebra highly recommended
3. Final admission to the Veterinary Medical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe care to animals.
4. Satisfactory completion of required immunizations.
5. North Carolina Board for Veterinary Medicine may require criminal background checks on all applicants for initial credentialing.

## Veterinary Medical Technology Associate in Applied Science Degree (A45780)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 50 |
| Other Courses | 9 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: CHM, COE, and VET

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| VET | 110 | Animal Breeds and Husbandry | 2 | 2 | 0 | 3 |
| VET | 114 | Intro to Veterinary Medical Tech | 1 | 0 | 0 | 1 |
| VET | 120 | Veterinary Anatomy and Physiology | 3 | 3 | 0 | 4 |
| VET | 121 | Vet Medical Terminology | 3 | 0 | 0 | 3 |
| | | | **11** | **9** | **0** | **15** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | | |
| CHM | 130 | General Organic, and Biochemistry | 3 | 0 | 0 | 3 |
| CHM | 130A | General Organic, and Biochemistry Lab | 0 | 2 | 0 | 1 |
| MAT | 110 | Mathematical Measurement (or MAT 140 Survey of Mathematics) | 2 | 2 | 0 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| VET | 123 | Veterinary Parasitology | 2 | 3 | 0 | 3 |
| VET | 125 | Veterinary Diseases I | 2 | 0 | 0 | 2 |
| | | | **12** | **7** | **0** | **15** |
| **Third Semester (Summer)** | | | | | | |
| VET | 131 | Veterinary Laboratory Techniques I | 2 | 3 | 0 | 3 |
| VET | 133 | Veterinary Clinical Practices I | 2 | 3 | 0 | 3 |
| VET | 137 | Veterinary Office Practices | 1 | 2 | 0 | 2 |
| | | | **5** | **8** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | | | |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 0 | 3 |
| VET | 126 | Veterinary Diseases II | 1 | 3 | 0 | 2 |
| VET | 211 | Veterinary Laboratory Techniques II | 2 | 3 | 0 | 3 |
| VET | 213 | Veterinary Clinical Practices II | 1 | 9 | 0 | 4 |
| VET | 215 | Veterinary Pharmacology | 3 | 0 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 0 | 3 |
| | | | **13** | **15** | **0** | **18** |
| **Fifth Semester (Spring)** | | | | | | |
| VET | 212 | Veterinary Laboratory Techniques III | 2 | 3 | 0 | 3 |
| VET | 214 | Veterinary Clinical Practices III | 1 | 9 | 0 | 4 |
| VET | 217 | Large Animal Clinical Practices | 2 | 3 | 0 | 3 |
| VET | 237 | Animal Nutrition | 3 | 0 | 0 | 3 |
| | | Social Science Elective | 3 | 0 | 0 | 3 |
| | | | **11** | **15** | **0** | **16** |
| **Sixth Semester (Summer)** | | | | | | |
| COE | 112 | Co-op Work Experience | 0 | 0 | 20 | 2 |
| | | | **0** | **0** | **20** | **2** |
| **Program Totals** | | | **52** | **54** | **20** | **74** |

# Business and Hospitality Education

The Business and Hospitality Education Division provides technical postsecondary education in the academic departments of Administrative/Medical Systems Technology, Business Administration, Business Computer Technologies, Culinary Arts and Hospitality, Networking Technologies, and Spa Therapies and Operations. Programs of study are specifically designed to provide students with necessary job skills to meet the personnel needs of local employers. All programs emphasize the mastery of analytical and technology-related skills. Business and Hospitality faculty work in partnership with local employers and program advisory committees to provide students with an appropriate foundation of theoretical and hands-on experiences. Day and evening classes are available for most programs. The Business and Hospitality Education Division is an associate member of the National Alliance of Business, the International Council of Hotel, Restaurant and Institutional Education and the National Restaurant Association.

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator. Please refer to pages 6 and 32 for more information.

**Objectives of Business and Hospitality Programs**

1. To provide students with the necessary skills to compete in local business or hospitality job markets while gaining an appreciation for global markets.
2. To provide students with a challenging and rigorous program of study emphasizing oral and written communication skills along with analytical, computational, and technical proficiencies.
3. To provide an interactive partnership between students, employers and faculty through a variety of methods including cooperative work experiences, guest lecturers, field trips, and advisory committee input.
4. To invest in the human capital of Buncombe and Madison counties and contribute to the economic development of the business and hospitality community.

**A.A.S. Degrees Conferred**

Accounting
Baking and Pastry Arts
Business Administration
Computer Information Technology
Cosmetology
Culinary Technology
Digital Media Technology
Entrepreneurship
Hotel and Restaurant Management
Human Resources Management
Information Systems Security
Marketing and Retailing
Networking Technology
Office Administration
Therapeutic Massage
Web Technologies

Degree programs in the Division of Business and Hospitality Education are five to six semesters in duration and require from 20 to 30 hours per week of course work. Students electing to enroll in the Business and Hospitality Division in evening programs will have the time required for completion extended.

**Diplomas Awarded**

Cosmetology
Medical Office Administration
Medical Transcription
Office Administration
Therapeutic Massage

**Certificates Awarded**

Accounting - Level I and Level II
Computer Information Technology - Database Management
Computer Information Technology - Geospatial Technology Computer
Computer Information Technology - Microcomputer Applications
Computer Information Technology - PC Installation and Maintenance
Digital Media Technology - Digital Video
Digital Media Technology - Interactive Multimedia
Entrepreneurship
Esthetics Technology
Hotel Restaurant Management - Bed and Breakfast/Inn Management
Hotel Restaurant Management - Hospitality Management
Manicuring/Nail Technology
Marketing and Retailing - Retail Marketing
Medical Office Administration - Medical Coding
Networking Technology - Basic Network Administration
Networking Technology - CCNA Preparation
Networking Technology - RHCT Preparation
Office Administration - Word Processing and Desktop Publishing
Real Estate Appraisal
Real Estate Licensing
Resort and Spa Management
Web Technologies - Web Designer
Web Technologies - Web Programmer

## 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
## Associate in Applied Science Degree (A25100)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 24 |
| Other Courses | 35 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, CTS, ECO and MKT

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC | 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| MAT | 115 | Mathematical Models (or MAT 151/151A) | 2 | 2 | 3 |
| | | | **10** | **8** | **14** |
| **Second Semester (Spring)** | | | | | |
| ACC | 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| BUS | 137 | Principles of Management | 3 | 0 | 3 |
| CTS | 130 | Spreadsheet | 2 | 2 | 3 |
| MKT | 120 | Principles of Marketing | 3 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | | **14** | **4** | **16** |
| **Third Semester (Summer)** | | | | | |
| ACC | 150 | Accounting Software Applications | 1 | 2 | 2 |
| BUS | 115 | Business Law I | 3 | 0 | 3 |
| COM | 231 | Public Speaking | 3 | 0 | 3 |
| ECO | 251 | Principles of Microeconomics | 3 | 0 | 3 |
| | | Related Elective* | 3 | 0 | 3 |
| | | | **13** | **2** | **14** |
| **Fourth Semester (Fall)** | | | | | |
| ACC | 129 | Individual Income Taxes | 2 | 2 | 3 |
| ACC | 140 | Payroll Accounting | 1 | 2 | 2 |
| ACC | 220 | Intermediate Accounting I | 3 | 2 | 4 |
| BUS | 225 | Business Finance | 2 | 2 | 3 |
| ECO | 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| | | | **11** | **8** | **15** |
| **Fifth Semester (Spring)** | | | | | |
| ACC | 130 | Business Income Taxes | 2 | 2 | 3 |
| ACC | 180 | Practices in Bookkeeping | 3 | 0 | 3 |
| ACC | 240 | Government and & Not-for-Profit Accounting | 3 | 0 | 3 |
| ACC | 269 | Auditing | 3 | 0 | 3 |
| BUS | 147 | Business Insurance | 3 | 0 | 3 |
| | | | **14** | **2** | **15** |
| **Program Totals** | | | **62** | **24** | **74** |

*Related Electives: ACC 131, BUS 116, BUS 151, BUS 240, BUS 260, BUS 270, BUS 280.

## Accounting
## Associate in Applied Science Degree – Evening Schedule (A25100)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC | 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| | | | **6** | **4** | **8** |
| **Second Semester (Spring)** | | | | | |
| ACC | 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| MAT | 115 | Mathematical Models (or MAT 151/151A) | 2 | 2 | 3 |
| | | | **7** | **6** | **10** |
| **Third Semester (Summer)** | | | | | |
| ACC | 240 | Government and & Not-for-Profit Accounting t | 3 | 0 | 3 |
| BUS | 137 | Principles of Management | 3 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | | **9** | **0** | **9** |

| | | | | |
|---|---|---|---|---|
| **Fourth Semester (Fall)** | | | | |
| ACC 129 | Individual Income Taxes | 2 | 2 | 3 |
| BUS 115 | Business Law I | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| | | **11** | **2** | **12** |
| **Fifth Semester (Spring)** | | | | |
| ACC 130 | Business Income Taxes | 2 | 2 | 3 |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **10** | **4** | **12** |
| **Sixth Semester (Summer)** | | | | |
| ACC 150 | Accounting Software Applications | 1 | 2 | 2 |
| BUS 225 | Business Finance | 2 | 2 | 3 |
| | | **3** | **4** | **5** |
| **Seventh Semester (Fall)** | | | | |
| ACC 140 | Payroll Accounting | 1 | 2 | 2 |
| ACC 220 | Intermediate Accounting I | 3 | 2 | 4 |
| BUS 147 | Business Insurance | 3 | 0 | 3 |
| | | **7** | **4** | **9** |
| **Eighth Semester (Spring)** | | | | |
| ACC 180 | Practices in Bookkeeping | 3 | 0 | 3 |
| ACC 269 | Auditing | 3 | 0 | 3 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Program Totals** | | **62** | **24** | **74** |

*Related Electives: ACC 131, BUS 116, BUS 151, BUS 240, BUS 260, BUS 270, BUS 280.

## Accounting – Certificates

There are two levels of Accounting Certificates. Level I provides introductory training in the field of accounting, while Level II takes students to an advanced level including the specialized area of government and not-for-profit accounting. Applicants must have earned a high school diploma or GED to apply for these certificates.

### Accounting Level I – Certificate (C25100L1)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| | | **3** | **2** | **4** |
| **Second Semester (Spring)** | | | | |
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| | | **3** | **2** | **4** |
| **Third Semester (Summer)** | | | | |
| BUS 115 | Business Law I | 3 | 0 | 3 |
| | | **3** | **0** | **3** |
| **Fourth Semester (Fall)** | | | | |
| ACC 140 | Payroll Accounting | 1 | 2 | 2 |
| | | **1** | **2** | **2** |
| **Program Totals** | | **10** | **6** | **13** |

### Accounting Level II – Certificate (C25100L2)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 129 | Individual Income Taxes | 2 | 2 | 3 |
| ACC 220 | Intermediate Accounting I | 3 | 2 | 4 |
| | | **5** | **4** | **7** |
| **Second Semester (Spring)** | | | | |
| ACC 180 | Practices in Bookkeeping | 3 | 0 | 3 |
| ACC 240 | Government & Not-for-Profit Accounting | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Program Totals** | | **11** | **4** | **13** |

## Baking and Pastry Arts

The Baking and Pastry Arts curriculum is designed to prepare students with the skills and knowledge required for employment in the baking/pastry industry including restaurants, hotels, independent bakeries/pastry shops, wholesale/retail markets, and high-volume bakeries.

Course offerings emphasizing practical application, a strong theoretical knowledge base, and professionalism provide the critical competencies to meet industry demands. Course work includes specialty/artisan breads, desserts, pastries, candies, decorative work, high-volume production and food marketing.

Graduates should qualify for entry-level positions, such as pastry/bakery assistants, area pastry chef and assistant pastry chef. American Culinary Federation certification is available to graduates.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis A vaccine. Second Hepatitis A vaccine to be completed within six to twelve months of the first vaccination.

## Baking and Pastry Arts
## Associate in Applied Science Degree (A55130)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 20 |
| Other Courses | 39 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BPA, COE, CUL and HRM

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| CUL | 110 | Sanitation and Safety | 2 | 0 | 0 | 2 |
| CUL | 110A | Sanitation and Safety Lab | 0 | 2 | 0 | 1 |
| CUL | 142 | Fundamentals of Food | 2 | 6 | 0 | 5 |
| CUL | 150 | Food Science | 1 | 2 | 0 | 2 |
| CUL | 160 | Baking I | 1 | 4 | 0 | 3 |
| MAT | 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| | | | **8** | **18** | **0** | **17** |
| **Second Semester (Spring)** | | | | | | |
| BPA | 120 | Petit Fours and Pastries | 1 | 4 | 0 | 3 |
| BPA | 130 | European Cakes and Tortes | 1 | 4 | 0 | 3 |
| BPA | 150 | Artisan & Specialty Breads | 1 | 6 | 0 | 4 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| HRM | 220 | Food & Beverage Controls | 3 | 0 | 0 | 3 |
| | | | **11** | **16** | **0** | **19** |
| **Third Semester (Summer)** | | | | | | |
| COE | 112 | Co-op Work Experience I | 0 | 0 | 20 | 2 |
| | | | **0** | **0** | **20** | **2** |
| **Fourth Semester (Fall)** | | | | | | |
| BPA | 210 | Cake Design & Decorating | 1 | 4 | 0 | 3 |
| BPA | 240 | Plated Desserts | 1 | 4 | 0 | 3 |
| BPA | 250 | Dessert & Bread Production | 1 | 8 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| HRM | 245 | Hosp. Human Resource Mgt. | 3 | 0 | 0 | 3 |
| | | | **9** | **16** | **0** | **17** |
| **Fifth Semester (Spring)** | | | | | | |
| BPA | 220 | Confection Artistry | 1 | 6 | 0 | 4 |
| BPA | 230 | Chocolate Artistry | 1 | 4 | 0 | 3 |
| BPA | 260 | Pastry & Baking Marketing | 2 | 2 | 0 | 3 |
| CUL | 112 | Nutrition for Foodservice | 3 | 0 | 0 | 3 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 0 | 3 |
| | | | **13** | **12** | **0** | **19** |
| **Program Totals** | | | **41** | **62** | **20** | **74** |

## 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
## Associate in Applied Science (A25120)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 19 |
| Other Courses | 41 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, ECO and MKT

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC | 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS | 110 | Introduction to Business | 3 | 0 | 3 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| MAT | 115 | Mathematical Models | 2 | 2 | 3 |
| | | | **10** | **8** | **14** |

**Second Semester (Spring)**

| | | | | |
|---|---|---|---|---|
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **15** | **2** | **16** |

**Third Semester (Summer)**

| | | | | |
|---|---|---|---|---|
| BUS 115 | Business Law I | 3 | 0 | 3 |
| BUS 153 | Human Resource Management | 3 | 0 | 3 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **15** | **0** | **15** |

**Fourth Semester (Fall)**

| | | | | |
|---|---|---|---|---|
| BUS 135 | Principles of Supervision | 3 | 0 | 3 |
| BUS 225 | Business Finance | 2 | 2 | 3 |
| BUS 280 | REAL Small Business | 4 | 0 | 4 |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| | | **14** | **4** | **16** |

**Fifth Semester (Spring)**

| | | | | |
|---|---|---|---|---|
| BUS 147 | Business Insurance | 3 | 0 | 3 |
| BUS 255 | Organizational Behavior in Business | 3 | 0 | 3 |
| BUS 239 | Bus Applications Seminar | 1 | 2 | 2 |
| | Related Elective* | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **13** | **2** | **14** |

| | | | |
|---|---|---|---|
| **Program Totals** | **67** | **16** | **75** |

* Related Electives: BUS 116, BUS 151, BUS 240, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 224.

## Business Administration Associate in Applied Science - Evening Schedule (A25120)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |

**First Semester (Fall)**

| | | | | |
|---|---|---|---|---|
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| | | **6** | **4** | **8** |

**Second Semester (Spring)**

| | | | | |
|---|---|---|---|---|
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **8** | **4** | **10** |

**Third Semester (Summer)**

| | | | | |
|---|---|---|---|---|
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **9** | **0** | **9** |

**Fourth Semester (Fall)**

| | | | | |
|---|---|---|---|---|
| BUS 115 | Business Law I | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| | | **11** | **2** | **12** |

**Fifth Semester (Spring)**

| | | | | |
|---|---|---|---|---|
| BUS 135 | Principles of Supervision | 3 | 0 | 3 |
| BUS 153 | Human Resource Management | 3 | 0 | 3 |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| | | **11** | **2** | **12** |

**Sixth Semester (Summer)**

| | | | | |
|---|---|---|---|---|
| COM 231 | Public Speaking | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **6** | **0** | **6** |

**Seventh Semester (Fall)**

| | | | | |
|---|---|---|---|---|
| BUS 280 | REAL Small Business | 4 | 0 | 4 |
| BUS 147 | Business Insurance | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **10** | **0** | **10** |

**Eighth Semester (Spring)**

| | | | | |
|---|---|---|---|---|
| BUS 225 | Business Finance | 2 | 2 | 3 |
| BUS 255 | Organizational Behavior in Business | 3 | 0 | 3 |
| BUS 239 | Bus Applications Seminar | 1 | 2 | 2 |
| | | **6** | **4** | **8** |

| | | | |
|---|---|---|---|
| **Program Totals** | **67** | **16** | **75** |

* Related Electives: BUS 116, BUS 151, BUS 240, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 224.

# 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 curriculum that can be customized to meet community information system needs.

Course work will develop a student's ability to communicate complex technical issues related to computer hardware, software, and networks in a manner that computer users can understand. Classes cover computer operations and terminology, operating systems, database, networking, security, and technical support.

Graduates should qualify for employment in entry-level positions with businesses, educational systems, and governmental agencies which rely on computer systems to manage information. Graduates should be prepared to sit for industry-recognized certification exams.

## Computer Information Technology Associate in Applied Science Degree (A25260)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 36 |
| Other Courses | 23 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BUS, CIS, COE, CSC, CTS, DBA, DME, GIS, SEC and WEB

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| MAT 115 | Mathematical Models (or MAT 171 Precalculus Algebra) | 2 | 2 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| | | **12** | **9** | **16** |
| **Second Semester (Spring)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| GIS 111 | Introduction to GIS | 2 | 2 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| | | **10** | **12** | **15** |
| **Third Semester (Summer)** | | | | |
| COM 231 | Public Speaking (or ENG 114 Prof. Research and Reporting) | 3 | 0 | 3 |
| NOS 130 | Windows Single User | 2 | 2 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **11** | **2** | **12** |
| **Fourth Semester (Fall)** | | | | |
| CTS 120 | Hardware/Software Support | 2 | 3 | 3 |
| CTS 135 | Integrated Software Intro | 2 | 4 | 4 |
| CTS 285 | Systems Analysis and Design | 3 | 0 | 3 |
| NOS 230 | Windows Admin I | 2 | 2 | 3 |
| | Major Elective 1* | 2 | 2 | 3 |
| | | **11** | **11** | **16** |
| **Fifth Semester (Spring)** | | | | |
| CTS 288 | Professional Practices in IT | 2 | 2 | 3 |
| CTS 289 | System Support Project | 1 | 4 | 3 |
| NET 110 | Networking Concepts | 2 | 2 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | Major Elective 2* | 2 | 2 | 3 |
| | | **10** | **10** | **15** |
| **Program Totals** | | **54** | **44** | **74** |

*Students have the ability to select an area of interest through the selection of their Major Electives. The following are the five interest areas and the associated classes. Students should meet with their advisor to help determine the courses that best meet their needs.

***Option I - Database:**

| | | |
|---|---|---|
| Elective 1 | DBA 120 | Database Programming I |
| Elective 2 | DBA 210 | Database Administration (or Co-op Work Experience) |

***Option II - Tech Support:**

| | | |
|---|---|---|
| Elective 1 | CTS 217 | Computer Training and Support |
| Elective 2 | CTS 220 | Adv. Hardware/Software Support (or Co-op Work Experience) |

***Option III - Design:**

| | | |
|---|---|---|
| Elective 1 | WEB 120 | Introduction to Internet Multimedia (or WEB 210 Web Design) |
| Elective 2 | CTS 125 | Presentation Graphics (or Co-op Work Experience) |

***Option IV - Business Support:**

| | | |
|---|---|---|
| Elective 1 | CTS 217 | Computer Train/Support |
| Elective 2 | CTS 125 | Presentation Graphics (or Co-op Work Experience) |

***Option V - Geographic Information Systems:**

| | | |
|---|---|---|
| Elective 1 | GIS 121 | Georeferencing and Mapping |
| Elective 2 | GIS 215 | GIS Data Models (or Co-op Work Experience) |

## Computer Information Technology Associate in Applied Science Degree – Evening Schedule (A25260)

***(Begins in even years only)***

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| MAT 115 | Mathematical Models (or MAT 171 Precalculus Algebra) | 2 | 2 | 3 |
| | | **7** | **6** | **10** |
| **Second Semester (Spring)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| | | **7** | **5** | **9** |
| **Third Semester (Summer)** | | | | |
| NOS 110 | Operating Systems Concepts | 2 | 3 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | Social/Behavioral Sciences Elective | 3 | 0 | 3 |
| | | **8** | **3** | **9** |
| **Fourth Semester (Fall)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| NOS 130 | Windows Single User | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| | | **6** | **7** | **9** |
| **Fifth Semester (Spring)** | | | | |
| CTS 120 | Hardware/Software Support | 2 | 3 | 3 |
| NET 110 | Networking Concepts | 2 | 2 | 3 |
| GIS 111 | Introduction to GIS | 2 | 2 | 3 |
| | | **6** | **7** | **9** |
| **Sixth Semester (Summer)** | | | | |
| COM 231 | Public Speaking (or ENG 114 Prof. Research and Reporting) | 3 | 0 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Seventh Semester (Fall)** | | | | |
| CTS 135 | Integrated Software Intro | 2 | 4 | 4 |
| CTS 285 | Systems Analysis and Design | 3 | 0 | 3 |
| | Major Elective 1* | 2 | 2 | 3 |
| | | **7** | **6** | **10** |
| **Eighth Semester (Spring)** | | | | |
| CTS 288 | Professional Practices in IT | 2 | 2 | 3 |
| NOS 230 | Windows Admin I | 2 | 2 | 3 |
| | Major Elective 2* | 2 | 2 | 3 |
| | | **6** | **6** | **9** |
| **Ninth Semester (Summer)** | | | | |
| CTS 289 | System Support Project | 1 | 4 | 3 |
| | | **1** | **4** | **3** |
| **Program Totals** | | **54** | **44** | **74** |

** Students have the ability to select an area of interest through the selection of their Major Electives. The following are the five interest areas and the associated classes. Students should meet with their advisor to help determine the courses that best meet their needs.*

***Option I - Database:**

| | | |
|---|---|---|
| Elective 1 | DBA 120 | Database Programming I |
| Elective 2 | DBA 210 | Database Administration (or Co-op Work Experience) |

***Option II - Tech Support:**

| | | |
|---|---|---|
| Elective 1 | CTS 217 | Computer Training and Support |
| Elective 2 | CTS 220 | Adv. Hardware/Software Support (or Co-op Work Experience) |

***Option III - Design:**

| | | |
|---|---|---|
| Elective 1 | WEB 120 | Introduction to Internet Multimedia (or WEB 210 Web Design) |
| Elective 2 | CTS 125 | Presentation Graphics (or Co-op Work Experience) |

***Option IV - Business Support:**

| | | |
|---|---|---|
| Elective 1 | CTS 217 | Computer Train/Support |
| Elective 2 | CTS 125 | Presentation Graphics (or Co-op Work Experience) |

***Option V - Geographic Information Systems:**

| | | |
|---|---|---|
| Elective 1 | GIS 121 | Georeferencing and Mapping |
| Elective 2 | GIS 215 | GIS Data Models (or Co-op Work Experience) |

## Computer Information Technology Database Management (C25260L1)

Students will learn how to design, manipulate and update databases using a variety of database programs. Upon completion of the certificate students should be able to write programs which create, update and produce databases, tables and reports representative of industry standards.

This certificate is designed for students who have experience with computers and want to improve database skills.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| DBA 120 | Database Programming I | 2 | 2 | 3 |
| DBA 210 | Database Administration | 2 | 2 | 3 |
| WEB 182 | PHP Programming | 2 | 2 | 3 |
| **Certificate Totals** | | **8** | **9** | **12** |

## Computer Information Technology Geospatial Technology Certificate (C25260L4)

The Geospatial Technology (GIS) certificate provides a curriculum based on a solid foundation in GIS concepts. Students enrolled in this certificate will learn the different forms of spatial data and their essential properties, principles and methods for collecting spatial data, principles of map design and effective cartographic communication, ways spatial data can be used to investigate complex problems, and customization of GIS software to meet individual needs.

Course work is also included to provide students with a programming, database or basic computer skills foundation. Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **Required Courses:** | | | | | |
| GIS | 111 | Introduction to GIS | 2 | 2 | 3 |
| GIS | 121 | Georeferencing and Mapping | 2 | 2 | 3 |
| GIS | 215 | GIS Data Models | 2 | 2 | 3 |
| **Select ONE of the following:** | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| CIS | 115 | Introduction to Programming and Logic | 2 | 3 | 3 |
| DBA | 110 | Database Concepts | 2 | 3 | 3 |
| **Certificate Totals** | | | **8** | **8-9** | **12** |

## Computer Information Technology Microcomputer Applications (C25260L2)

Participants in this certificate program learn about computer hardware as well as a variety of the most popular software application packages used in business. Applicants must have earned a high school diploma or GED to apply for this certificate program.

This certificate is designed for students who have little or no computer experience who want to improve their skills for home or the workplace.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **Required Courses:** | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| CTS | 135 | Integrated Software | 2 | 4 | 4 |
| DBA | 110 | Database Concepts | 2 | 3 | 3 |
| NOS | 110 | Operating Systems Concepts | 2 | 3 | 3 |
| **Certificate Totals** | | | **8** | **12** | **13** |

## Computer Information Technology PC Installation and Maintenance Certificate (C25260L3)

Students learn how to install, optimize, upgrade, and troubleshoot personal computer hardware and software. They gain both theoretical and hands-on experience using a variety of current hardware and software technologies. Topics such as testing electrical components, using diagnostics utilities, and user PC support interactions will be covered.

Preparation for the A+ Certification examination is an integral objective of this certificate program. Success as a PC technician requires essential knowledge and skills that may be tested by the internationally recognized A+ Certification exam.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **Required Courses:** | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| CTS | 120 | Hardware/Software Support | 2 | 3 | 3 |
| CTS | 220 | Advanced Hardware/Software Support | 2 | 3 | 3 |
| NOS | 110 | Operating System Concepts | 2 | 3 | 3 |
| **Certificate Totals** | | | **8** | **11** | **12** |

# Cosmetology

The Cosmetology curriculum is designed to provide competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the cosmetology industry. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional imaging, hair design, chemical processes, skin care, nail care, multi-cultural practices, business/computer principles, product knowledge, and other selected topics.

Graduates should qualify to sit for the State Board of Cosmetic Arts examination. Upon successfully passing the State Board exam, graduates will be issued a license. Employment is available in beauty salons and related businesses.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Cosmetology students under the direction of College faculty.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. To earn hours, Cosmetology students must be physically present in the laboratory. When leaving a laboratory, students must clock out.
4. Students enrolled in the program should not be subject to colorblindness, pregnancy or have a sensitivity to chemicals.
5. Students should be physically able to use cosmetology equipment such as clippers and shears and able to stand for long periods of time.

## Cosmetology
## Associate in Applied Science (A55140)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 34 |
| Other Courses | 18 |
| Program Total | 67 |

***Courses requiring a grade of "C" or better: BUS, CIS, and COS***

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 113 | Computer Basics | 0 | 2 | 1 |
| COS 111 | Cosmetology Concepts I | 4 | 0 | 4 |
| COS 112 | Salon I | 0 | 24 | 8 |
| | | **4** | **28** | **14** |
| **Second Semester (Spring)** | | | | |
| BUS 151 | People Skills | 3 | 0 | 3 |
| COS 113 | Cosmetology Concepts II | 4 | 0 | 4 |
| COS 114 | Salon II | 0 | 24 | 8 |
| | | **7** | **24** | **15** |
| **Third Semester (Summer)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| COS 115 | Cosmetology Concepts III | 4 | 0 | 4 |
| COS 116 | Salon III | 0 | 12 | 4 |
| | | **7** | **12** | **11** |
| **Fourth Semester (Fall)** | | | | |
| COS 117 | Cosmetology Concepts IV | 2 | 0 | 2 |
| COS 118 | Salon IV | 0 | 21 | 7 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **5** | **21** | **12** |
| **Fifth Semester (Spring)** | | | | |
| BUS 280 | REAL Small Business | 4 | 0 | 4 |
| COS 260 | Design Applications | 1 | 3 | 2 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **13** | **5** | **15** |
| **Program Totals** | | **36** | **90** | **67** |

## Cosmetology
## Associate in Applied Science - Evening Schedule (A55140)

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 113 | Computer Basics | 0 | 2 | 1 |
| COS 111AB | Cosmetology Concepts I | 2 | 0 | 2 |
| COS 112AB | Salon I | 0 | 12 | 4 |
| | | **2** | **16** | **8** |
| **Second Semester (Spring)** | | | | |
| BUS 151 | People Skills | 3 | 0 | 3 |
| COS 111BB | Cosmetology Concepts I | 2 | 0 | 2 |
| COS 112BB | Salon I | 0 | 12 | 4 |
| | | **5** | **12** | **9** |
| **Third Semester (Summer)** | | | | |
| COS 113AB | Cosmetology Concepts II | 2 | 0 | 2 |
| COS 114AB | Salon II | 0 | 12 | 4 |
| | | **2** | **12** | **6** |
| **Fourth Semester (Fall)** | | | | |
| COS 113BB | Cosmetology Concepts II | 2 | 0 | 2 |
| COS 114BB | Salon II | 0 | 12 | 4 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **5** | **12** | **9** |
| **Fifth Semester (Spring)** | | | | |
| COS 115 | Cosmetology Concepts III | 4 | 0 | 4 |
| COS 116 | Salon III | 0 | 12 | 4 |
| | | **4** | **12** | **8** |

| | | | | |
|---|---|---|---|---|
| **Sixth Semester (Summer)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| COS 117AB | Cosmetology Concepts IV | 1 | 0 | 1 |
| COS 118AB | Salon IV | 0 | 6 | 2 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **7** | **6** | **9** |
| **Seventh Semester (Fall)** | | | | |
| COS 117BB | Cosmetology Concepts IV | 1 | 0 | 1 |
| COS 118BB | Salon IV | 0 | 15 | 5 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | | **3** | **17** | **9** |
| **Eighth Semester (Spring)** | | | | |
| BUS 280 | REAL Small Business | 4 | 0 | 4 |
| COS 260 | Design Applications | 1 | 3 | 2 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **8** | **3** | **9** |
| **Program Totals** | | **36** | **90** | **67** |

## Cosmetology - Diploma (D55140)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 34 |
| Other Courses | 8 |
| Program Total | 48 |

Courses requiring a grade of "C" or better: CIS and COS

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| COS 111 | Cosmetology Concepts I | 4 | 0 | 4 |
| COS 112 | Salon I | 0 | 24 | 8 |
| | | **4** | **24** | **12** |
| **Second Semester (Spring)** | | | | |
| COS 113 | Cosmetology Concepts II | 4 | 0 | 4 |
| COS 114 | Salon II | 0 | 24 | 8 |
| | | **4** | **24** | **12** |
| **Third Semester (Summer)** | | | | |
| COS 115 | Cosmetology Concepts III | 4 | 0 | 4 |
| COS 116 | Salon III | 0 | 12 | 4 |
| | | **4** | **12** | **8** |
| **Fourth Semester (Fall)** | | | | |
| COS 117 | Cosmetology Concepts IV | 2 | 0 | 2 |
| COS 118 | Salon IV | 0 | 21 | 7 |
| | | **2** | **21** | **9** |
| **Fifth Semester (Spring)** | | | | |
| CIS 113 | Computer Basics | 0 | 2 | 1 |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **6** | **2** | **7** |
| **Program Totals** | | **20** | **83** | **48** |

## Cosmetology - Diploma - Evening Schedule (D55140)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| CIS 113 | Computer Basics | 0 | 2 | 1 |
| COS 111AB | Cosmetology Concepts I | 2 | 0 | 2 |
| COS 112AB | Salon I | 0 | 12 | 4 |
| | | **2** | **14** | **7** |
| **Second Semester (Spring)** | | | | |
| COS 111BB | Cosmetology Concepts I | 2 | 0 | 2 |
| COS 112BB | Salon I | 0 | 12 | 4 |
| | | **2** | **12** | **6** |
| **Third Semester (Summer)** | | | | |
| COS 113AB | Cosmetology Concepts II | 2 | 0 | 2 |
| COS 114AB | Salon II | 0 | 12 | 4 |
| | | **2** | **12** | **6** |
| **Fourth Semester (Fall)** | | | | |
| COS 113BB | Cosmetology Concepts II | 2 | 0 | 2 |
| COS 114BB | Salon II | 0 | 12 | 4 |
| | | **2** | **12** | **6** |
| **Fifth Semester (Spring)** | | | | |
| COS 115 | Cosmetology Concepts III | 4 | 0 | 4 |
| COS 116 | Salon III | 0 | 12 | 4 |
| | | **4** | **12** | **8** |
| **Sixth Semester (Summer)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| COS 117AB | Cosmetology Concepts IV | 1 | 0 | 1 |
| COS 118AB | Salon IV | 0 | 6 | 2 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **7** | **6** | **9** |
| **Seventh Semester (Fall)** | | | | |
| COS 117BB | Cosmetology Concepts IV | 1 | 0 | 1 |
| COS 118BB | Salon IV | 0 | 15 | 5 |
| | | **1** | **15** | **6** |
| **Program Totals** | | **20** | **83** | **48** |

# 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 emphasizing practical application, a strong theoretical knowledge base, and professionalism and provides the critical competencies to successfully meet industry demands. Courses also include sanitation, food/beverage service and control, baking, garde manger, 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 may be available to graduates. With experience, graduates may advance to positions such as sous chef, executive chef, or food service manager.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis A vaccine. Second Hepatitis A vaccine to be completed within six to twelve months of the first vaccination.

## Culinary Technology
## Associate in Applied Science Degree (A55200)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 17 |
| Other Courses | 44 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: COE, CUL and HRM

**First Semester (Fall)**

| | | | | | | |
|---|---|---|---|---|---|---|
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| CUL | 110 | Sanitation and Safety | 2 | 0 | 0 | 2 |
| CUL | 110A | Sanitation and Safety Lab | 0 | 2 | 0 | 1 |
| CUL | 140 | Basic Culinary Skills | 2 | 6 | 0 | 5 |
| CUL | 150 | Food Science | 1 | 2 | 0 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MAT | 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| | | | **12** | **14** | **0** | **19** |

**Second Semester (Spring)**

| | | | | | | |
|---|---|---|---|---|---|---|
| CUL | 120 | Purchasing | 2 | 0 | 0 | 2 |
| CUL | 160 | Baking I | 1 | 4 | 0 | 3 |
| CUL | 170 | Garde Manger I | 1 | 4 | 0 | 3 |
| CUL | 240 | Advanced Culinary Skills | 1 | 8 | 0 | 5 |
| CUL | 240A | Advanced Culinary Skills Lab | 0 | 3 | 0 | 1 |
| HRM | 220 | Food and Beverage Controls | 3 | 0 | 0 | 3 |
| | | | **8** | **19** | **0** | **17** |

**Third Semester (Summer)**

| | | | | | | |
|---|---|---|---|---|---|---|
| COE | 112 | Co-op Work Experience I | 0 | 0 | 20 | 2 |
| | | | **0** | **0** | **20** | **2** |

**Fourth Semester (Fall)**

| | | | | | | |
|---|---|---|---|---|---|---|
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| CUL | 130 | Menu Design | 2 | 0 | 0 | 2 |
| CUL | 180 | Internat & Amer Regl Cuisine (or CUL 275 Catering Cuisine) | 1 | 8 | 0 | 5 |
| CUL | 260 | Baking II (or CUL 285 Competition Fundamentals) | 1 | 4 | 0 | 3 |
| CUL | 270 | Garde Manger II | 1 | 4 | 0 | 3 |
| HRM | 245 | Hosp. Human Resource Mgt | 3 | 0 | 0 | 3 |
| | | | **11** | **16** | **0** | **19** |

**Fifth Semester (Spring)**

| | | | | | | |
|---|---|---|---|---|---|---|
| CUL | 112 | Nutrition for Food Service | 3 | 0 | 0 | 3 |
| CUL | 135 | Food and Beverage Service | 2 | 0 | 0 | 2 |
| CUL | 135A | Food and Beverage Service Lab | 0 | 2 | 0 | 1 |
| CUL | 214 | Wine Appreciation | 1 | 2 | 0 | 2 |
| CUL | 250 | Classical Cuisine | 1 | 8 | 0 | 5 |
| PSY | 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 0 | 3 |
| | | | **13** | **12** | **0** | **19** |
| **Program Totals** | | | **44** | **61** | **20** | **76** |

# Digital Media Technology

The Digital Media Technology program prepares students for entry-level jobs in the digital design and multimedia industry. Students learn to synthesize multimedia, hypertext, computer programming, information architecture, and client/server technologies using both Internet and non-network-based media.

Students develop skills in communication, critical thinking, and problem solving as well as interface design, multimedia formats, application programming, data architecture, and client/server technologies. The program develops technical skills through practical applications that employ current and emerging standards and technologies.

Graduates should qualify for employment as web designers, graphic artists/designers, multimedia specialists, web developers, web content specialists, media specialists, information specialists, digital media specialists, animation specialists, interface designers, and many new jobs yet to be defined in this expanding field.

## Digital Media Technology
## Associate in Applied Science Degree (A25210)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 21 |
| Other Courses | 40 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: ART, CIS, COE, CSC, CTS, DBA, DME, FVP, GIS, and WEB

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| ART 171 | Computer Art I | 0 | 6 | 3 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| CIS 115 | Introduction to Programming and Logic | 2 | 3 | 3 |
| DME 110 | Introduction to Digital Media | 2 | 2 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | (or MAT 171 Precalculus Algebra) | | | |
| | | **8** | **17** | **16** |
| **Second Semester (Spring)** | | | | |
| ART 271 | Computer Art II | 0 | 6 | 3 |
| DME 130 | Digital Animation I | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| | Major Elective 1* | 2 | 2 | 3 |
| | | **9** | **12** | **15** |
| **Third Semester (Summer)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| | (or ENG 114 Prof. Research and Reporting) | | | |
| DME 120 | Intro to Multimedia Applications | 2 | 2 | 3 |
| DME 140 | Introduction to Audio/Video Media | 2 | 2 | 3 |
| | | **7** | **4** | **9** |
| **Fourth Semester (Fall)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| DME 210 | User Interface Design | 2 | 2 | 3 |
| DME 230 | Digital Animation II | 2 | 2 | 3 |
| | Major Elective 2* | 2 | 2 | 3 |
| | Major Elective 3* | 2 | 2 | 3 |
| | | **10** | **11** | **15** |
| **Fifth Semester (Spring)** | | | | |
| DME 260 | Emerging Technologies in Digital Media | 2 | 2 | 3 |
| DME 285 | Systems Project | 2 | 2 | 3 |
| WEB 210 | Web Design | 2 | 2 | 3 |
| | Major Elective 4* | 2 | 2 | 3 |
| | | **8** | **8** | **12** |
| **Sixth Semester (Summer)** | | | | |
| DME 270 | Professional Practices in Digital Media | 2 | 2 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | Social Sciences Elective | 3 | 0 | 3 |
| | | **8** | **2** | **9** |
| **Program Totals** | | **50** | **54** | **76** |

* Students have the ability to select an area of interest through the selection of their Major Electives. The following are the three interest areas and the associated classes. Students should meet with their advisor to help determine the courses that best meet their needs.

***Web/Multimedia Programming Track:**

| | | |
|---|---|---|
| Elective 1 | WEB 115 | Web Markup and Scripting |
| Elective 2 | WEB 182 | PHP Programming (or GIS 111 Introduction to GIS) |
| Elective 3 | DME 220 | Interactive Multimedia Programming |
| Elective 4 | CSC 151 | JAVA Programming (or WEB 250 Database Driven Websites or Co-op Work Experience) |

***Artistic Track:**

| | | |
|---|---|---|
| Elective 1 | ART 264 | Digital Photography I |
| Elective 2 | Art course approved by advisor (or GIS 111 Introduction to GIS) | |
| Elective 3 | DME 115 | Graphic Design Tools |
| Elective 4 | Co-op Work Experience (or Art course approved by advisor) | |

***Video Track:**

| | | |
|---|---|---|
| Elective 1 | ART 264 | Digital Photography I |
| Elective 2 | ART 266 | Videography |
| Elective 3 | FVP 250 | Production Specialties I |
| Elective 4 | DME 240 | Media Compression (or Co-op Work Experience) |

## Digital Media Technology
## Associate in Applied Science Degree – Evening Schedule (A25210)

***(Begins in even years only)***

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| DME 110 | Introduction to Digital Media | 2 | 2 | 3 |
| MAT 115 | Mathematical Models (or MAT 171 Precalculus Algebra) | 2 | 2 | 3 |
| | | **6** | **8** | **10** |
| **Second Semester (Spring)** | | | | |
| ART 171 | Computer Art I | 0 | 6 | 3 |
| DME 130 | Digital Animation I | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| | | **4** | **10** | **9** |
| **Third Semester (Summer)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **5** | **3** | **6** |
| **Fourth Semester (Fall)** | | | | |
| ART 271 | Computer Art II | 0 | 6 | 3 |
| DME 140 | Introduction to Audio/Video Media | 2 | 2 | 3 |
| WEB 210 | Web Design | 2 | 2 | 3 |
| | | **4** | **10** | **9** |
| **Fifth Semester (Spring)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| DME 120 | Introduction to Multimedia Applications | 2 | 2 | 3 |
| | Major Elective 1* | 2 | 2 | 3 |
| | | **6** | **7** | **9** |
| **Sixth Semester (Summer)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| | (or ENG 114 Prof. Research and Reporting) | | | |
| DME 210 | User Interface Design | 2 | 2 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **8** | **2** | **9** |
| **Seventh Semester (Fall)** | | | | |
| DME 230 | Digital Animation II | 2 | 2 | 3 |
| DME 260 | Emerging Technologies in Digital Media | 2 | 2 | 3 |
| | Major Elective 2* | 2 | 2 | 3 |
| | | **6** | **6** | **9** |
| **Eight Semester (Spring)** | | | | |
| DME 270 | Professional Practices in Digital Media | 2 | 2 | 3 |
| | Major Elective 3* | 2 | 2 | 3 |
| | Major Elective 4* | 2 | 2 | 3 |
| | | **6** | **6** | **9** |
| **Ninth Semester (Summer)** | | | | |
| DME 285 | System Project | 2 | 2 | 3 |
| | Social Sciences Elective | 3 | 0 | 3 |
| | | **5** | **2** | **6** |
| **Program Totals** | | **50** | **54** | **76** |

****S tudents have the ability to select an area of interest through the selection of their Major Electives. The following are the three interest areas and the associated classes. Students should meet with their advisor to help determine the courses that best meet their needs.***

***Web/Multimedia Programming Track:**

| | | |
|---|---|---|
| Elective 1 | WEB 115 | Web Markup and Scripting |
| Elective 2 | WEB 182 | PHP Programming (or GIS 111 Introduction to GIS) |
| Elective 3 | DME 220 | Interactive Multimedia Programming |
| Elective 4 | CSC 151 | JAVA Programming (or WEB 250 Database Driven Websites or Co-op Work Experience) |

***Artistic Track:**

| | | |
|---|---|---|
| Elective 1 | ART 264 | Digital Photography I |
| Elective 2 | Art course approved by advisor (or GIS 111 Introduction to GIS) | |
| Elective 3 | DME 115 | Graphic Design Tools |
| Elective 4 | Co-op Work Experience (or Art course approved by advisor) | |

***Video Track:**

| | | |
|---|---|---|
| Elective 1 | ART 264 | Digital Photography I |
| Elective 2 | ART 266 | Videography |
| Elective 3 | FVP 250 | Production Specialties I |
| Elective 4 | DME 240 | Media Compression (or Co-op Work Experience) |

## Digital Media Technology
## Digital Video Certificate (C25210L1)

The Digital Video certificate provides training in multiple aspects of digital video and audio technologies including: creating graphics for video, camera and lighting techniques, capturing video, non-linear editing, and compression of audio/video media.

This certificate is designed for students who have experience with computers and want to improve digital audio and video skills.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| ART 171 | Computer Art | 0 | 6 | 3 |
| ART 266 | Videography I | 0 | 6 | 3 |
| DME 140 | Introduction to Audio/Video Media | 2 | 2 | 3 |
| DME 240 | Media Compression | 2 | 2 | 3 |
| FVP 250 | Production Specialties I | 1 | 6 | 3 |
| **Certificate Totals** | | **5** | **22** | **15** |

## Digital Media Technology
## Interactive Multimedia Certificate (C25210L2)

The Interactive Multimedia Certificate provides training in multiple aspects of interactive multimedia using the industry standard software Adobe Flash. Topics will include: drawing with Flash, using symbols, animation and motion graphics, using audio and video, designing for interactivity and Actionscript programming.

This certificate is designed for students who have experience with computers and want to improve Flash design and programming skills. Previous experience with Adobe Photoshop, Adobe Illustrator, and web design suggested.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| DME 110 | Introduction to Digital Media | 2 | 2 | 3 |
| DME 120 | Intro to Multimedia Applications | 2 | 2 | 3 |
| DME 130 | Digital Animation I | 2 | 2 | 3 |
| DME 220 | Interactive Multimedia Programming | 2 | 2 | 3 |
| **Certificate Totals** | | **8** | **8** | **12** |

# Entrepreneurship

The Entrepreneurship curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth as self-employed business owners.

Course work includes developing a student's ability to make informed decisions as future business owners. Courses include entrepreneurial concepts learned in innovation and creativity, business funding, and marketing. Additional course work includes computers and economics.

Through these skills, students will have a sound education base in entrepreneurship for lifelong learning. Graduates are prepared to be self-employed and open their own businesses.

## Entrepreneurship
## Associate in Applied Science Degree (A25490)

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *9* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 29 |
| Other Courses | 28 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, ECO and ETR

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| ETR 210 | Introduction to Entrepreneurship | 3 | 0 | 3 |
| | | **14** | **6** | **17** |
| **Second Semester (Spring)** | | | | |
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| BUS 240 | Business Ethics | 3 | 0 | 3 |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ENG 114 | Professional Research & Reporting | 3 | 0 | 3 |
| ETR 220 | Innovation and Creativity | 3 | 0 | 3 |
| | | **17** | **4** | **19** |
| **Third Semester (Summer)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MAT 115 | Mathematical Models (or MAT 151/MAT 151A) | 2 | 2 | 3 |
| | | **8** | **2** | **9** |
| **Fourth Semester (Fall)** | | | | |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| ETR 215 | Law for Entrepreneurs | 3 | 0 | 3 |
| ETR 230 | Entrepreneur Marketing | 3 | 0 | 3 |
| ETR 240 | Funding for Entrepreneurs | 3 | 0 | 3 |
| HUM 115 | Critical Thinking | 3 | 0 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **18** | **0** | **18** |

| | | | | | |
|---|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | | |
| ACC | 150 | Accounting Software Applications | 1 | 2 | 2 |
| BUS | 175 | Contract Negotiations | 3 | 0 | 3 |
| BUS | 280 | REAL Small Business | 4 | 0 | 4 |
| ETR | 270 | Entrepreneurship Topics | 3 | 0 | 3 |
| | | | **11** | **2** | **12** |
| **Program Totals** | | | **68** | **14** | **75** |

## Entrepreneurship Certificate (C25490L1)

The Entrepreneurship Certificate is designed to provide students with basic knowledge and skills necessary in establishing a new business venture. Course work includes financial accounting and understanding of the operation of a business in the free enterprise system, as well as principles of entrepreneurship and development of a business plan. Students will develop a detailed business plan that may be used for the establishment of a business venture.

Successful applicants for this certificate must have earned a high school diploma or GED.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| ACC | 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS | 110 | Introduction to Business | 3 | 0 | 3 |
| BUS | 280 | REAL Small Business | 4 | 0 | 4 |
| ETR | 210 | Introduction to Entrepreneurship | 3 | 0 | 3 |
| **Certificate Totals** | | | **13** | **2** | **14** |

# Esthetics Technology

The Esthetics Technology curriculum provides competency-based knowledge, scientific/artistic principles and hands-on fundamentals associated with the art of skin care. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional Esthetics Technology, business/human relations, product knowledge, and other related topics.

Graduates should be prepared to take the North Carolina Cosmetology State Board Licensing Exam and upon passing may be licensed and qualify for employment in beauty and cosmetic/skin care salons, as a platform artist, and in related businesses.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Esthetics students under the direction of College faculty.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. Esthetics Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.

## Esthetics Technology - Certificate (C55230)

(Starts fall semester only)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| COS | 119 | Esthetics Concepts I | 2 | 0 | 2 |
| COS | 120 | Esthetics Salon I | 0 | 18 | 6 |
| | | | **2** | **18** | **8** |
| **Second Semester (Spring)** | | | | | |
| COS | 125 | Esthetics Concepts II | 2 | 0 | 2 |
| COS | 126 | Esthetics Salon II | 0 | 18 | 6 |
| | | | **2** | **18** | **8** |
| **Certificate Totals** | | | **4** | **36** | **16** |

# 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.

**Mountain Tech Lodge**

An on-campus lodging facility, the Mountain Tech Lodge is operated and maintained by the Hotel and Restaurant Management students, and provides practical experience under the direction of College faculty.

**Specific Program Requirements**

1. General college admission requirements.

2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis A vaccine. Second Hepatitis A vaccine to be completed within six to twelve months of the first vaccination.

## Hotel and Restaurant Management Associate in Applied Science Degree (A25240)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 16 |
| Other Courses | 44 |
| Program Total | 75 |

Courses requiring a grade of "C" or better: ACC, COE, CUL and HRM

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| CUL 110 | Sanitation and Safety | 2 | 0 | 0 | 2 |
| CUL 110A | Sanitation and Safety Lab | 0 | 2 | 0 | 1 |
| CUL 142 | Fundamentals of Food | 2 | 6 | 0 | 5 |
| HRM 110 | Introduction to Hospitality | 2 | 0 | 0 | 2 |
| HRM 124 | Introduction to Service Mgt. | 2 | 2 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| | | **10** | **14** | **0** | **17** |
| **Second Semester (Spring)** | | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 0 | 4 |
| CUL 135 | Food and Beverage Service | 2 | 0 | 0 | 2 |
| CUL 135A | Food and Beverage Service Lab | 0 | 2 | 0 | 1 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| HRM 120 | Front Office | 3 | 0 | 0 | 3 |
| HRM 120A | Front Office Lab | 0 | 2 | 0 | 1 |
| HRM 130 | Bed and Breakfast Management | 2 | 0 | 0 | 2 |
| HRM 220 | Food and Beverage Controls | 3 | 0 | 0 | 3 |
| | | **16** | **6** | **0** | **19** |
| **Third Semester (Summer)** | | | | | |
| COE 112 | Co-op Work Experience I | 0 | 0 | 20 | 2 |
| | | **0** | **0** | **20** | **2** |
| **Fourth Semester (Fall)** | | | | | |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| CUL 130 | Menu Design | 2 | 0 | 0 | 2 |
| HRM 135 | Facilities Management | 2 | 0 | 0 | 2 |
| HRM 215 | Restaurant Management | 3 | 0 | 0 | 3 |
| HRM 215A | Restaurant Management Lab | 0 | 2 | 0 | 1 |
| HRM 225 | Beverage Management | 2 | 0 | 0 | 2 |
| HRM 240 | Hospitality Marketing | 3 | 0 | 0 | 3 |
| HRM 245 | Hosp. Human Resources Mgt. | 3 | 0 | 0 | 3 |
| | | **17** | **4** | **0** | **19** |
| **Fifth Semester (Spring)** | | | | | |
| COM 231 | Public Speaking | 3 | 0 | 0 | 3 |
| HRM 140 | Hospitality Tourism Law | 3 | 0 | 0 | 3 |
| HRM 210 | Meetings and Conventions | 3 | 0 | 0 | 3 |
| HRM 280 | Hospitality Management Problems | 3 | 0 | 0 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 0 | 3 |
| | | **18** | **0** | **0** | **18** |
| **Program Totals** | | **61** | **24** | **20** | **75** |

## Hotel and Restaurant Management Bed and Breakfast/Inn Management – Certificate* (C25240L1)

The B&B/Inn Management certificate program addresses the essential skills and concepts required to manage small lodging facilities, prepares individuals to enter the profession, and provides additional education to meet professional development needs. Courses cover lodging operations, preparation of basic pastries and breakfast items, business and financial issues, sales and marketing, and federal, state and local regulations and standards.

**Specific Program Requirements**

1 General college admission requirements.

2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis A vaccine. Second Hepatitis A vaccine to be completed within six to twelve months of the first vaccination.

* Offered day with some evening opportunities.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| CUL 110 | Sanitation and Safety | 2 | 0 | 2 |
| CUL 160 | Baking I | 1 | 4 | 3 |
| | | **6** | **6** | **9** |

| | | | | |
|---|---|---|---|---|
| **Second Semester (Spring)** | | | | |
| HRM 120 | Front Office | 3 | 0 | 3 |
| HRM 120A | Front Office Lab | 0 | 2 | 1 |
| HRM 130 | Bed and Breakfast Management | 2 | 0 | 2 |
| HRM 140 | Hospitality Tourism Law (or HRM 210, or HRM 240) | 3 | 0 | 3 |
| | | **8** | **2** | **9** |
| **Certificate Totals** | | **14** | **8** | **18** |

## Hotel and Restaurant Management Hospitality Management Certificate (C25240L2)

The Hospitality Management Certificate provides line employees the concepts and skills to upgrade or cross-train in their careers in the hotel and restaurant management industry. In addition, successful completion of CUL 110 leads to a nationally recognized ServSafe Certification from the National Restaurant Association.

**Specific Program Requirements**

1 General college admission requirements.

2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis A vaccine. Second Hepatitis A vaccine to be completed within six to twelve months of the first vaccination.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| CUL 110 | Sanitation and Safety | 2 | 0 | 2 |
| HRM 140 | Hospitality Tourism Law | 3 | 0 | 3 |
| HRM 220 | Food and Beverage Controls | 3 | 0 | 3 |
| HRM 240 | Hospitality Marketing | 3 | 0 | 3 |
| HRM 245 | Hosp. Human Resource Mgt. | 3 | 0 | 3 |
| **Certificate Totals** | | **14** | **0** | **14** |

# 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 of this program will have a sound business educational base for life-long learning. Students will be prepared for employment opportunities in personnel, training, and other human resources development areas.

## Human Resources Management Associate in Applied Science Degree – Evening Schedule (A2512C)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 19 |
| Concentrations | 15 |
| Other Courses | 27 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, ECO and MKT

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS 151 | People Skills | 3 | 0 | 3 |
| | | **6** | **4** | **8** |
| **Second Semester (Spring)** | | | | |
| BUS 153 | Human Resource Management | 3 | 0 | 3 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **8** | **2** | **9** |
| **Third Semester (Summer)** | | | | |
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| OST 136 | Word Processing | 2 | 2 | 3 |
| | | **5** | **2** | **6** |
| **Fourth Semester (Fall)** | | | | |
| ACC 140 | Payroll Accounting | 1 | 2 | 2 |
| BUS 115 | Business Law I | 3 | 0 | 3 |
| BUS 256 | Recruitment, Selection, and Personnel Planning | 3 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | | **9** | **4** | **11** |
| **Fifth Semester (Spring)** | | | | |
| BUS 135 | Principles of Supervision | 3 | 0 | 3 |
| BUS 217 | Employment Laws and Regulations | 3 | 0 | 3 |
| BUS 240 | Business Ethics | 3 | 0 | 3 |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| | | **11** | **2** | **12** |

| | | | | |
|---|---|---|---|---|
| **Sixth Semester (Summer)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Seventh Semester (Fall)** | | | | |
| BUS 234 | Training and Development | 3 | 0 | 3 |
| BUS 258 | Compensation and Benefits | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| | | **12** | **0** | **12** |
| **Eighth Semester (Spring)** | | | | |
| BUS 147 | Business Insurance | 3 | 0 | 3 |
| BUS 259 | HRM Applications | 3 | 0 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **12** | **0** | **12** |
| **Program Totals** | | **69** | **14** | **76** |

* Related Electives: BUS 110, BUS 116, BUS 260, BUS 270.

## 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.

Coursework 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
### Associate in Applied Science Degree (A25270)

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 45 |
| Other Courses | 13 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BUS, CIS, CTS, DBA, NET, NOS and SEC

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| NET 125 | Networking Basics | 1 | 4 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| | | **8** | **11** | **13** |
| **Second Semester (Spring)** | | | | |
| MAT 171 | Precalculus Algebra | 3 | 0 | 3 |
| MAT 171A | Precalculus Algebra Lab | 0 | 2 | 1 |
| NET 126 | Routing Basics | 1 | 4 | 3 |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| NOS 130 | Windows Single User | 2 | 2 | 3 |
| | | **8** | **10** | **13** |
| **Third Semester (Summer)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| NOS 220 | Linux/UNIX Administration I | 2 | 2 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **10** | **5** | **12** |
| **Fourth Semester (Fall)** | | | | |
| NET 175 | Wireless Technology | 2 | 2 | 3 |
| NET 225 | Routing and Switching I | 1 | 4 | 3 |
| SEC 160 | Secure Administration I | 2 | 2 | 3 |
| SEC 150 | Secure Communication | 2 | 2 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | **10** | **10** | **15** |
| **Fifth Semester (Spring)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| NET 226 | Routing and Switching II | 1 | 4 | 3 |
| SEC 220 | Defense In-Depth | 2 | 2 | 3 |
| | | **8** | **9** | **12** |
| **Sixth Semester (Summer)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| SEC 210 | Intrusion Detection | 2 | 2 | 3 |
| SEC 289 | Security Capstone Project | 1 | 4 | 3 |
| | | **6** | **6** | **9** |
| **Program Totals** | | **50** | **51** | **74** |

## Information Systems Security Associate in Applied Science Degree - Evening Schedule (A25270)

(Begins in even years only)

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| NET 125 | Networking Basics | 1 | 4 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **6** | **8** | **10** |
| **Second Semester (Spring)** | | | | |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| NET 126 | Routing Basics | 1 | 4 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| | | **6** | **7** | **9** |
| **Third Semester (Summer)** | | | | |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| NOS 130 | Windows/Single User | 2 | 2 | 3 |
| | | **4** | **4** | **6** |
| **Fourth Semester (Fall)** | | | | |
| NET 225 | Routing and Switching I | 1 | 4 | 3 |
| NOS 220 | Linux/UNIX Admin I | 2 | 2 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | | **6** | **6** | **9** |
| **Fifth Semester (Spring)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| NET 175 | Wireless Technology | 2 | 2 | 3 |
| NET 226 | Routing and Switching II | 1 | 4 | 3 |
| | | **6** | **6** | **9** |
| **Sixth Semester (Summer)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | **5** | **3** | **6** |
| **Seventh Semester (Fall)** | | | | |
| MAT 171 | Precalculus Algebra | 3 | 0 | 3 |
| MAT 171A | Precalculus Algebra Lab | 0 | 2 | 1 |
| SEC 160 | Secure Administration I | 2 | 2 | 3 |
| SEC 150 | Secure Communication | 2 | 2 | 3 |
| | | **7** | **6** | **10** |
| **Eighth Semester (Spring)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| SEC 220 | Defense In-Depth | 2 | 2 | 3 |
| SEC 210 | Intrusion Detection | 2 | 2 | 3 |
| | | **6** | **7** | **9** |
| **Ninth Semester (Summer)** | | | | |
| COM 120 | Interpersonal Communications | 3 | 0 | 3 |
| SEC 289 | Security Capstone Project | 1 | 4 | 3 |
| | | **4** | **4** | **6** |
| **Program Totals** | | **50** | **51** | **74** |

## Manicuring/Nail Technology

The Manicuring/Nail Technology curriculum provides competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the nail technology industry. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional nail technology, business/computer principles, product knowledge, and other related topics.

Graduates should be prepared to take the North Carolina Cosmetology State Board Licensing Exam and upon passing be licensed and qualify for employment in beauty and nail salons, as a platform artist, and in related businesses.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Manicuring/Nail Technology students under the direction of College faculty.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.
3. Manicuring/Nail Technology students must clock out when leaving the laboratory. To earn hours, students must be physically present in the laboratory.

## Manicuring/Nail Technology - Certificate (C55400)

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| COS 121 | Manicure/Nail Technology I | 4 | 6 | 6 |
| COS 222 | Manicure/Nail Technology II | 4 | 6 | 6 |
| **Certificate Totals** | | **8** | **12** | **12** |

# Marketing and Retailing

Marketing and Retailing is a concentration under the curriculum title of Business Administration. This curriculum is designed to provide students with fundamental skills in marketing and retailing.

Course work includes marketing, retailing, merchandising, selling, advertising, computer technology, and management.

Graduates should qualify for marketing positions within manufacturing, retailing, and service organizations.

## Marketing and Retailing
## Associate in Applied Science Degree (A2512F)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 19 |
| Concentration | 15 |
| Other Courses | 27 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, CTS, ECO and MKT

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | | **13** | **6** | **16** |
| **Second Semester (Spring)** | | | | |
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| MKT 229 | Special Events Production | 2 | 0 | 2 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **14** | **2** | **15** |
| **Third Semester (Summer)** | | | | |
| BUS 115 | Business Law I | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MKT 122 | Visual Merchandising | 3 | 0 | 3 |
| MKT 221 | Consumer Behavior | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **15** | **0** | **15** |
| **Fourth Semester (Fall)** | | | | |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| MKT 121 | Retailing | 3 | 0 | 3 |
| MKT 123 | Fundamentals of Selling | 3 | 0 | 3 |
| MKT 224 | International Marketing | 3 | 0 | 3 |
| | | **14** | **2** | **15** |
| **Fifth Semester (Spring)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| MKT 220 | Advertising and Sales Promotion | 3 | 0 | 3 |
| MKT 225 | Marketing Research | 3 | 0 | 3 |
| MKT 227 | Marketing Applications | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **15** | **0** | **15** |
| **Program Totals** | | **71** | **10** | **76** |

***Related Electives: BUS 116, BUS 135, BUS 147, BUS 153, BUS 225, BUS 240, BUS 260, BUS 270, CTS 125.***

## Marketing and Retailing
## Associate in Applied Science Degree - Evening Schedule (A2512F)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | | **9** | **2** | **10** |
| **Second Semester (Spring)** | | | | |
| ACC 121 | Principles of Managerial Accounting | 3 | 2 | 4 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| | | **7** | **6** | **10** |
| **Third Semester (Summer)** | | | | |
| BUS 137 | Principles of Management | 3 | 0 | 3 |
| MKT 229 | Special Events Production | 2 | 0 | 2 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **8** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | |
| BUS 115 | Business Law I | 3 | 0 | 3 |
| ECO 251 | Principles of Microeconomics | 3 | 0 | 3 |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **12** | **0** | **12** |

| | | | | |
|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| ECO 252 | Principles of Macroeconomics | 3 | 0 | 3 |
| MKT 123 | Fundamentals of Selling | 3 | 0 | 3 |
| MKT 220 | Advertising and Sales Promotion | 3 | 0 | 3 |
| | | **11** | **2** | **12** |
| **Sixth Semester (Summer)** | | | | |
| MKT 122 | Visual Merchandising | 3 | 0 | 3 |
| MKT 221 | Consumer Behavior | 3 | 0 | 3 |
| | | **6** | **0** | **6** |
| **Seventh Semester (Fall)** | | | | |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| MKT 121 | Retailing | 3 | 0 | 3 |
| | Related Elective* | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Eighth Semester (Spring)** | | | | |
| MKT 224 | International Marketing | 3 | 0 | 3 |
| MKT 225 | Marketing Research | 3 | 0 | 3 |
| MKT 227 | Marketing Applications | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Program Totals** | | **71** | **10** | **76** |

**** Related Electives: BUS 116, BUS 135, BUS 147, BUS 153, BUS 225, BUS 240, BUS 260, BUS 270, CTS 125.***

## Marketing and Retailing
## Retail Marketing Certificate (C2512FL1)

The Retail Marketing Certificate is designed to prepare students to be successful in a retail marketing environment. Students will learn the fundamentals of marketing goods and services. This certificate will provide students with the essential knowledge of retailing, including effective operations, retail structure, non-store retailing, and upcoming trends. Students will learn how to design stimulating visual displays and the importance of visual merchandising. The uniqueness of consumer behavior will be explored with emphasis on the decision-making process.

Successful applicants for this certificate must have earned a high school diploma or GED.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| MKT 120 | Principles of Marketing | 3 | 0 | 3 |
| MKT 121 | Retailing | 3 | 0 | 3 |
| MKT 122 | Visual Merchandising | 3 | 0 | 3 |
| MKT 221 | Consumer Behavior | 3 | 0 | 3 |
| **Certificate Totals** | | **12** | **0** | **12** |

# Medical Office Administration

This curriculum prepares individuals for employment in medical and other health-care related offices.

Course work will include medical terminology; information systems; office management; medical coding, billing, and insurance; legal and ethical issues; and formatting and word processing. Students will learn administrative and support functions and develop skills applicable in medical environments.

Employment opportunities are available in medical and dental offices, hospitals, insurance companies, laboratories, medical supply companies, and other health-care related organizations.

## Medical Office Administration - Diploma (D25310)

| Program Summary | Hours |
|---|---|
| General Education | 8 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| Core Courses | 29 |
| Other Courses | 9 |
| Program Total | 46 |

Courses requiring a grade of "C" or better: BUS, CIS, MED and OST

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| OST 136 | Word Processing | 2 | 2 | 3 |
| OST 141 | Medical Terminology I - Medical Ofiice | 3 | 0 | 3 |
| OST 164 | Text Editing Applications | 3 | 0 | 3 |
| | | **13** | **4** | **15** |
| **Second Semester (Spring)** | | | | |
| BIO 163 | Basic Anatomy and Physiology | 4 | 2 | 5 |
| OST 134 | Text Entry and Formatting | 2 | 2 | 3 |
| OST 142 | Medical Terminology II -Medical Office | 3 | 0 | 3 |
| OST 148 | Medical Coding, Billing, and Insurance | 3 | 0 | 3 |
| OST 184 | Records Management | 2 | 2 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **16** | **8** | **20** |

| | | | | | |
|---|---|---|---|---|---|
| **Third Semester (Summer)** | | | | | |
| OST | 132 | Keyboard Skill Building | 1 | 2 | 2 |
| OST | 149 | Medical Legal Issues | 3 | 0 | 3 |
| OST | 243 | Med Office Simulation | 2 | 2 | 3 |
| OST | 289 | Administrative Office Mgt | 2 | 2 | 3 |
| | | | **8** | **6** | **11** |
| **Program Totals** | | | **37** | **18** | **46** |

**** Major Electives: CTS 130, DBA 110, OST 201, OST 233, SPA 120, or OST 247 and OST 248 (requiring departmental approval). The semester in which the major elective is taken may vary.***

## Medical Office Administration - Diploma - Evening Schedule (D25310)

(Begins in even years only)

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| OST | 136 | Word Processing | 2 | 2 | 3 |
| OST | 164 | Text Editing Applications | 3 | 0 | 3 |
| | | | **7** | **4** | **9** |
| **Second Semester (Spring)** | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 5 |
| OST | 134 | Text Entry and Formatting | 2 | 2 | 3 |
| OST | 141 | Medical Terminology I - Medical Office | 3 | 0 | 3 |
| | | | **9** | **4** | **11** |
| **Third Semester (Summer)** | | | | | |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| OST | 132 | Keyboard Skill Building | 1 | 2 | 2 |
| OST | 142 | Medical Terminology II - Medical Office | 3 | 0 | 3 |
| | | | **7** | **2** | **8** |
| **Fourth Semester (Fall)** | | | | | |
| OST | 148 | Medical Coding, Billing, and Insurance | 3 | 0 | 3 |
| OST | 184 | Records Management | 2 | 2 | 3 |
| | | Major Elective* | 2 | 2 | 3 |
| | | | **7** | **4** | **9** |
| **Fifth Semester (Spring)** | | | | | |
| OST | 149 | Medical Legal Issues | 3 | 0 | 3 |
| OST | 243 | Med Office Simulation | 2 | 2 | 3 |
| OST | 289 | Administrative Office Mgt | 2 | 2 | 3 |
| | | | **7** | **4** | **9** |
| **Program Totals** | | | **37** | **18** | **46** |

****Major Electives: CTS 130, DBA 110, OST 201, OST 233, SPA 120, or OST 247 and OST 248 (requiring departmental approval). The semester in which the major elective is taken may vary.***

## Medical Office Administration Medical Coding Certificate - Evening Schedule (C25310L1)

***(Evening only)***

The Medical Coding Certificate program will prepare individuals for entry-level employment opportunities in the allied health specialty of medical coding. Requirements for the certificate include successful completion of the listed courses and the following documented prerequisite office skills:

Pass a keyboarding and basic computer skills test requiring:

- Keyboarding skill level of 25 words per minute for five minutes (or OST 131)
- Theory and hands-on skill using Microsoft Office software (Word, Excel, PowerPoint) and Windows with 80 percent accuracy (or CIS 110 or CIS 111).

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 5 |
| OST | 141 | Medical Terminology I - Medical Office | 3 | 0 | 3 |
| | | | **7** | **2** | **8** |
| **Second Semester (Spring)** | | | | | |
| OST | 142 | Medical Terminology II - Medical Office | 3 | 0 | 3 |
| OST | 148 | Medical Coding, Billing, and Insurance | 3 | 0 | 3 |
| | | | **6** | **0** | **6** |
| **Third Semester (Summer)** | | | | | |
| OST | 247 | CPT Coding in the Medical Office | 1 | 2 | 2 |
| OST | 248 | Diagnostic Coding | 1 | 2 | 2 |
| | | | **2** | **4** | **4** |
| **Certificate Totals** | | | **15** | **6** | **18** |

## Medical Transcription

The Medical Transcription curriculum prepares individuals to become medical language specialists who interpret and transcribe dictation by physicians and other healthcare professionals in order to document patient care and facilitate delivery of healthcare services.

Students will gain extensive knowledge of medical terminology, pharmacology, human diseases, diagnostic studies, surgical procedures, and laboratory procedures. In addition to word processing skill and knowledge of voice processing equipment, students must master English grammar, spelling, and proofreading.

Graduates should qualify for employment in hospitals, medical clinics, doctors' offices, private transcription businesses, research facilities, insurance companies,

and publishing companies. After acquiring work experience, individuals can apply to the American Association for Medical Transcription to become Certified Medical Transcriptionists.

Note: The American Association for Medical Transcription is now known as the Association for Healthcare Documentation Integrity.

## Medical Transcription - Diploma (D25320)

| Program Summary | Hours |
|---|---|
| General Education | 8 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *5* |
| Core Courses | 20 |
| Other Courses | 18 |
| Program Total | 46 |

Courses requiring a grade of "C" or better: CIS, COE, MED and OST

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| OST | 134 | Text Entry and Formatting | 2 | 2 | 0 | 3 |
| OST | 136 | Word Processing | 2 | 2 | 0 | 3 |
| OST | 141 | Medical Terminology I - Medical Office | 3 | 0 | 0 | 3 |
| OST | 164 | Text Editing Applications | 3 | 0 | 0 | 3 |
| | | | **12** | **6** | **0** | **15** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| OST | 132 | Keyboard Skill Building | 1 | 2 | 0 | 2 |
| OST | 142 | Medical Terminology II - Medical Office | 3 | 0 | 3 | 3 |
| OST | 201 | Medical Transcription I | 3 | 2 | 0 | 4 |
| | | | **14** | **6** | **0** | **17** |
| **Third Semester (Summer)** | | | | | | |
| OST | 149 | Medical Legal Issues | 3 | 0 | 0 | 3 |
| OST | 184 | Records Management | 2 | 2 | 0 | 3 |
| OST | 202 | Medical Transcription II | 3 | 2 | 0 | 4 |
| OST | 286 | Professional Development | 3 | 0 | 0 | 3 |
| | | | **11** | **4** | **0** | **13** |
| **Fourth Semester (Fall)** | | | | | | |
| COE | 111 | Co-op Work Experience I* | 0 | 0 | 10 | 1 |
| | | | **0** | **0** | **10** | **1** |
| **Program Totals** | | | **37** | **16** | **10** | **46** |

**** A co-op work experience is an additional requirement of the MT curriculum. Students will be expected to complete the co-op during daytime hours Monday - Friday.***

## Medical Transcription Diploma - Evening Schedule (D25320)

(Begins in even years only)

Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | | |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| OST | 164 | Text Editing Applications | 3 | 0 | 0 | 3 |
| | | | **9** | **4** | **0** | **11** |
| **Second Semester (Spring)** | | | | | | |
| OST | 134 | Text Entry and Formatting | 2 | 2 | 0 | 3 |
| OST | 136 | Word Processing | 2 | 2 | 0 | 3 |
| OST | 141 | Medical Terminology I - Medical Office | 3 | 0 | 0 | 3 |
| | | | **7** | **4** | **0** | **9** |
| **Third Semester (Summer)** | | | | | | |
| OST | 132 | Keyboard Skill Building | 1 | 2 | 0 | 2 |
| OST | 142 | Medical Terminology II - Medical Office | 3 | 0 | 0 | 3 |
| OST | 286 | Professional Development | 3 | 0 | 0 | 3 |
| | | | **7** | **2** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | | | |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| OST | 184 | Records Management | 2 | 2 | 0 | 3 |
| OST | 201 | Medical Transcription I | 3 | 2 | 0 | 4 |
| | | | **8** | **4** | **0** | **10** |
| **Fifth Semester (Spring)** | | | | | | |
| OST | 149 | Medical Legal Issues | 3 | 0 | 0 | 3 |
| OST | 202 | Medical Transcription II | 3 | 2 | 0 | 4 |
| | | | **6** | **2** | **0** | **7** |
| **Sixth Semester (Summer)** | | | | | | |
| COE | 111 | Co-op Work Experience I* | 0 | 0 | 10 | 1 |
| | | | **0** | **0** | **10** | **1** |
| **Program Totals** | | | **37** | **16** | **10** | **46** |

****A co-op work experience is an additional requirement of the MT curriculum. Students will be expected to complete the co-op during daytime hours Monday - Friday.***

# Networking Technology

The Networking Technology curriculum prepares individuals for employment supporting network infrastructure environments. Students will learn how to use technologies to provide reliable transmission and delivery of data, voice, image, and video communications in business, industry, and education.

Coursework includes design, installation, configuration, and management of network infrastructure technologies and network operating systems. Emphasis is placed on the implementation and management of network software and the implementation and management of hardware such as switches 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 industry certifications, depending on their local program.

## Networking Technology
## Associate in Applied Science Degree (A25340)

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 45 |
| Other Courses | 13 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BUS, CIS, CTS, DBA, NET, NOS, SEC, and WEB

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| NET 125 | Networking Basics | 1 | 4 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | | **11** | **11** | **16** |
| **Second Semester (Spring)** | | | | |
| MAT 171 | Precalculus Algebra | 3 | 0 | 3 |
| MAT 171A | Precalculus Algebra Lab | 0 | 2 | 1 |
| NET 126 | Routing Basics | 1 | 4 | 3 |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| NOS 130 | Windows Single User | 2 | 2 | 3 |
| | | **8** | **10** | **13** |
| **Third Semester (Summer)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| NOS 220 | Linux/UNIX Admin I | 2 | 2 | 3 |
| NOS 230 | Windows Admin I | 2 | 2 | 3 |
| | | **7** | **4** | **9** |
| **Fourth Semester (Fall)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| NET 225 | Routing and Switching I | 1 | 4 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **11** | **9** | **15** |
| **Fifth Semester (Spring)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| CTS 120 | Hardware/Software Support | 2 | 3 | 3 |
| NET 226 | Routing and Switching II | 1 | 4 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **7** | **12** | **12** |
| **Sixth Semester (Summer)** | | | | |
| NET 289 | Networking Project | 1 | 4 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **6** | **6** | **9** |
| **Program Totals** | | **50** | **52** | **74** |

* Major Electives: NET 175, NET 270, NOS 221, NOS 222, NOS 231, NOS 232, WEB 230

## Networking Technology
## Associate in Applied Science Degree – Evening Schedule (A25340)

(Begins in even years only)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| NET 125 | Networking Basics | 1 | 4 | 3 |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| | | **6** | **8** | **10** |
| **Second Semester (Spring)** | | | | |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| NET 126 | Routing Basics | 1 | 4 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| | | **6** | **7** | **9** |
| **Third Semester (Summer)** | | | | |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| NOS 130 | Windows Single User | 2 | 2 | 3 |
| | | **4** | **4** | **6** |

| | | | | |
|---|---|---|---|---|
| **Fourth Semester (Fall)** | | | | |
| NET 225 | Routing and Switching I | 1 | 4 | 3 |
| NOS 220 | Linux/UNIX Admin I | 2 | 2 | 3 |
| NOS 230 | Windows Admin I | 2 | 2 | 3 |
| | | **5** | **8** | **9** |
| **Fifth Semester (Spring)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| NET 226 | Routing and Switching II | 1 | 4 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **6** | **6** | **9** |
| **Sixth Semester (Summer)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | **5** | **3** | **6** |
| **Seventh Semester (Fall)** | | | | |
| CTS 120 | Hardware/Software Support | 2 | 3 | 3 |
| MAT 171 | Precalculus Algebra | 3 | 0 | 3 |
| MAT 171A | Precalculus Algebra Lab | 0 | 2 | 1 |
| | Major Elective* | 2 | 2 | 3 |
| | | **7** | **7** | **10** |
| **Eighth Semester (Spring)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **7** | **5** | **9** |
| **Ninth Semester (Summer)** | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 3 |
| NET 289 | Networking Project | 1 | 4 | 3 |
| | | **4** | **4** | **6** |
| **Program Totals** | | **50** | **52** | **74** |

* Major Electives: NET 175, NET 270, NOS 221, NOS 222, NOS 231, NOS 232, WEB 230

## Networking Technology
## Basic Network Administration Certificate (C25340L3)

This certificate is designed for the office professional with responsibilities for an organization's local area network administration. Students will learn the basics of network administration including file management, network infrastructure, user management, security concepts, and troubleshooting using operating systems such as Microsoft Windows™ and Linux. Upon successful completion of this certificate program students will have the knowledge they need to perform basic administrative tasks on servers in a small office-home office (SOHO) environment.

Applicants must have earned a high school diploma or GED to apply for this certificate. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| NET 125 | Networking Basics | 1 | 4 | 3 |
| NOS 110 | Operating System Concepts | 2 | 3 | 3 |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| NOS 130 | Windows Single User | 2 | 4 | 3 |
| NOS 220 | Linux/UNIX Admin 1 | 2 | 2 | 3 |
| NOS 230 | Windows Admin 1 | 2 | 2 | 3 |
| **Certificate Totals** | | **11** | **17** | **18** |

## Networking Technology
## CCNA Preparation Certificate (C25340L1)

This certificate is designed to help prepare students for the Cisco Certified Network Association (CCNA) examination. Topics include network topologies and design, router configuration and protocols, switching theory, virtual LANS and threaded case studies. Upon successful completion of the four course sequence, students will have acquired the knowledge necessary to perform entry level design, construction, and maintenance of network infrastructures. This certificate will help prepare students for the Cisco Certified Network Associate certification exam.

Applicants must have earned a high school diploma or GED. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| NET 125 | Networking Basics | 1 | 4 | 3 |
| NET 126 | Routing Basics | 1 | 4 | 3 |
| NET 225 | Routing and Switching I | 1 | 4 | 3 |
| NET 226 | Routing and Switching II | 1 | 4 | 3 |
| **Certificate Totals** | | **4** | **16** | **12** |

# Office Administration

The Office Administration 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 Administration
## Associate in Applied Science Degree (A25370)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 15 |
| Other Courses | 46 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: ACC, BUS, CIS, CTS, DBA, OST and WEB

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| OST 131 | Keyboarding | 1 | 2 | 2 |
| OST 286 | Professional Development | 3 | 0 | 3 |
| | | **12** | **8** | **16** |
| **Second Semester (Spring)** | | | | |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 3 |
| OST 134 | Text Entry and Formatting | 2 | 2 | 3 |
| OST 136 | Word Processing | 2 | 2 | 3 |
| OST 164 | Text Editing Applications | 3 | 0 | 3 |
| OST 184 | Records Management | 2 | 2 | 3 |
| | | **13** | **10** | **18** |
| **Third Semester (Summer)** | | | | |
| ACC 140 | Payroll Accounting | 1 | 2 | 2 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| OST 132 | Keyboard Skill Building | 1 | 2 | 2 |
| OST 289 | Administrative Office Mgt | 2 | 2 | 3 |
| PSY 150 | General Psychology | 3 | 0 | 3 |
| | | **10** | **6** | **13** |
| **Fourth Semester (Fall)** | | | | |
| BUS 260 | Business Communications | 3 | 0 | 3 |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| OST 137 | Office Systems Applications | 2 | 2 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| | Major Elective* | 3 | 0 | 3 |
| | | **12** | **7** | **15** |
| **Fifth Semester (Spring)** | | | | |
| CTS 217 | Computer Training/Support | 2 | 2 | 3 |
| OST 233 | Office Publications Design | 2 | 2 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | Major Elective* | 5 | 0 | 5 |
| | | **12** | **4** | **14** |
| **Program Totals** | | **59** | **35** | **76*** |

*The hour totals include a minimum of eight credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, BUS 240, CTS 125, NET 110, SPA 120.

## Office Administration Diploma (D25370)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *6* |
| Core Courses | 15 |
| Other Courses | 22 |
| Program Total | 43 |

Courses requiring a grade of "C" or better: BUS, CIS, CTS and OST

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACC 120 | Principles of Financial Accounting | 3 | 2 | 4 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| OST 131 | Keyboarding | 1 | 2 | 2 |
| OST 286 | Professional Development | 3 | 0 | 3 |
| | | **12** | **6** | **15** |
| **Second Semester (Spring)** | | | | |
| CTS 130 | Spreadsheet | 2 | 2 | 3 |
| OST 134 | Text Entry and Formatting | 2 | 2 | 3 |
| OST 136 | Word Processing | 2 | 2 | 3 |
| OST 164 | Text Editing Applications | 3 | 0 | 3 |
| OST 184 | Records Management | 2 | 2 | 3 |
| | | **11** | **8** | **15** |
| **Third Semester (Summer)** | | | | |
| ACC 140 | Payroll Accounting | 1 | 2 | 2 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| OST 132 | Keyboard Skill Building | 1 | 2 | 2 |
| OST 289 | Administrative Office Mgt | 2 | 2 | 3 |
| | Major Elective* | 3 | 0 | 3 |
| | | **10** | **6** | **13** |
| **Program Totals** | | **33** | **20** | **43*** |

* The hour totals include a minimum of three credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, CTS 125, DBA 110, NET 110, SPA 120.

## Office Administration
## Word Processing/Desktop Publishing
## Certificate (C25370L1)

This certificate program gives essential training in word processing and desktop publishing. You will learn state-of-the-art computer software that is used in offices and businesses today. Applicants must have earned a high school diploma or GED to apply for this certificate program.

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| CTS | 125 | Presentation Graphics | 2 | 2 | 3 |
| OST | 131 | Keyboarding (or tested keyboarding proficiency) | 1 | 2 | 2 |
| OST | 134 | Text Entry and Formatting | 2 | 2 | 3 |
| OST | 136 | Word Processing | 2 | 2 | 3 |
| **Certificate Totals** | | | **9** | **10** | **14** |

# Real Estate Appraisal

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, the 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.

**Notice**

*For Certified Residential:* 200 hours of qualifying education are needed. College level courses required are as follows: Twenty-one semester credit hours covering the following subject matter courses: English Composition, Principles of Economics (Micro or Macro), Finance, Algebra, Geometry or higher mathematics, Statistics, Introduction to Computers - Word Processing/Spreadsheets, and Business or Real Estate Law. In lieu of the required courses, an Associate degree will qualify.

*For Certified General: 3*00 hours of qualifying education are needed. College level courses required are as follows: thirty semester credit hours covering the following subject matter courses: English Composition, Micro Economics, Macro Economics, Finance, Algebra, Geometry or higher mathematics, Statistics, Introduction to Computers - Word Processing/Spreadsheets, Business or Real Estate Law, and two elective courses in accounting, geography, ag-economics, business management, or real estate. In lieu of the required courses, a Bachelors degree will qualify.

## Real Estate Appraisal Certificate (C25420L1)

(Evening only)

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| REA | 214 | Basic Appraisal Principle | 2 | 0 | 2 |
| REA | 215 | Basic Appraisal Procedure | 2 | 0 | 2 |
| | | | **4** | **0** | **4** |
| **Second Semester (Spring)** | | | | | |
| REA | 210 | Site Value Cost Approach | 1 | 0 | 1 |
| REA | 217 | National USPAP | 1 | 0 | 1 |
| REA | 219 | Residential Market Analysis | 1 | 0 | 1 |
| | | | **3** | **0** | **3** |
| **Third Semester (Fall)** | | | | | |
| REA | 212 | Sales Comparison & Income | 2 | 0 | 2 |
| REA | 213 | Appraisal Report Writing | 1 | 0 | 1 |
| REA | 220 | Statistics and Finance | 1 | 0 | 1 |
| | | | **4** | **0** | **4** |
| **Fourth Semester (Spring)** | | | | | |
| REA | 240 | Advanced Residential Apps | 1 | 0 | 1 |
| REA | 280 | Appraisal Emerging Issues | 2 | 0 | 2 |
| | | | **3** | **0** | **3** |
| **Certificate Totals** | | | **14** | **0** | **14** |

# Real Estate Licensing

The Real Estate Licensing curriculum provides licensing education required by the North Carolina Real Estate Commission for students preparing to take the real estate license examination and for provisional brokers that are seeking removal of the provisional status.

Course work includes the practices and principles of real estate, broker relationships as they apply to customers, sellers and buyers, contract procedures, fair housing and real estate methodology. Course work also includes professional development opportunities.

Graduates who have passed the real estate license examination and obtained a real estate provisional broker license should then qualify for removal of the provisional status and be able to provide basic, residential real estate services as a broker affiliated with a real estate brokerage firm.

A student must secure his/her provisional broker license before proceeding into the post-licensure courses and must complete the three mandatory post-

licensing courses within three years of licensure in order to avoid cancellation of his/her license.

### Real Estate Licensing Certificate - Evening Schedule (C25480)

(Day classes may be available)

| | | | Weekly Class Hrs. | Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| RLS | 112 | Broker Prelicensing | 5 | 0 | 5 |
| RLS | 113 | Real Estate Mathematics (or RLS 120 Real Estate Practice) | 2 | 0 | 2 |
| RLS | 121 | Broker Relationships | 2 | 0 | 2 |
| RLS | 122 | Contracts and Closing | 2 | 0 | 2 |
| RLS | 123 | Select Real Estate Issues | 2 | 0 | 2 |
| **Certificate Totals** | | | **13** | **0** | **13** |

## Resort and Spa Management

The Resort and Spa Management curriculum prepares individuals with the skills and knowledge required for employment in the resort and spa industry including day spas, beach resorts, mountain resorts, golf resorts, extended stay spas and cruise lines.

Course work includes physical fitness management, nutrition, spa cuisine, hospitality law, spa equipment and management, club and resort management, accounting and marketing. Courses emphasizing a practical application, a strong theoretical base, and professionalism provide the critical competencies to meet industry demands.

Upon completion, graduates should qualify for entry or mid-level management positions in the resort and spa industry including member/guest services directors, spa assistant directors, spa managers, spa attendant supervisors, spa sales managers, and assistant club house managers.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Resort and Spa Management students under the direction of College faculty.

### Resort and Spa Management Certificate (C55410L1)

| | | | Weekly Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
|---|---|---|---|---|---|---|
| HRM | 245 | Hosp. Human Resource Mgt. | 3 | 0 | 0 | 3 |
| RSM | 110 | Intro to Resort & Spa Ind | 3 | 0 | 0 | 3 |
| RSM | 240 | Resort and Spa Marketing | 3 | 0 | 0 | 3 |
| RSM | 245 | Resort and Spa Law | 3 | 0 | 0 | 3 |
| **Certificate Totals** | | | **12** | **0** | **0** | **12** |

## 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.

The Mountain Tech Spa, an on-campus spa facility located in the Birch Building, provides practical experience for Therapeutic Massage students under the direction of College faculty.

**Specific Program Requirements**

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including annual TB test and first dose of Hepatitis B vaccine. Second Hepatitis B vaccine to be completed at least one month after the first dose. Third injection to be completed six months after the first dose.

### Therapeutic Massage Associate in Applied Science (A45750)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 47 |
| Other Courses | 12 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: BIO, BUS, COE, MED, MTH and PSY

| | | | Weekly Class Hrs. | Lab Hrs. | Clinic Hrs. | Credit Hrs. |
|---|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO | 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| MED | 120 | Survey of Medical Terminology | 2 | 0 | 0 | 2 |
| MTH | 110 | Fundamentals of Massage | 6 | 9 | 3 | 10 |
| | | | **12** | **13** | **3** | **18** |

| | | | | | |
|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | |
| BIO 271 | Pathophysiology | 3 | 0 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MTH 120 | Therapeutic Massage Applications | 6 | 9 | 3 | 10 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | **15** | **9** | **3** | **19** |
| **Third Semester (Summer)** | | | | | |
| MAT 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| MTH 125 | Ethics of Massage | 2 | 0 | 0 | 2 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **7** | **2** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | | |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 0 | 3 |
| MTH 210 | Advanced Skills of Massage Therapy | 4 | 9 | 3 | 8 |
| | Humanities Elective | 3 | 0 | 0 | 3 |
| | | **10** | **9** | **3** | **14** |
| **Fifth Semester (Spring)** | | | | | |
| BUS 280 | REAL Small Business | 4 | 0 | 0 | 4 |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COE 111 | Co-Op Work Experience I | 0 | 0 | 10 | 1 |
| MTH 220 | Outcome Based Massage | 4 | 6 | 3 | 7 |
| | | **10** | **8** | **13** | **15** |
| **Program Totals** | | **54** | **41** | **22** | **74** |

## Therapeutic Massage
## Associate in Applied Science - Evening Schedule (A45750)

(Begins in odd years only)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| MED 120 | Survey of Medical Terminology | 2 | 0 | 0 | 2 |
| MTH 110AB | Fundamentals of Massage | 3 | 6 | 0 | 5 |
| | Humanities Elective | 3 | 0 | 0 | 3 |
| | | **8** | **8** | **0** | **11** |
| **Second Semester (Spring)** | | | | | |
| BIO 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| MTH 110BB | Fundamentals of Massage | 3 | 3 | 3 | 5 |
| | | **7** | **5** | **3** | **10** |
| **Third Semester (Summer)** | | | | | |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MTH 120AB | Therapeutic Massage Applications | 3 | 6 | 0 | 5 |
| | | **6** | **6** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | | |
| BIO 271 | Pathophysiology | 3 | 0 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| MTH 120BB | Therapeutic Massage Applications | 3 | 3 | 3 | 5 |
| | | **8** | **5** | **3** | **11** |
| **Fifth Semester (Spring)** | | | | | |
| BUS 280 | REAL Small Business | 4 | 0 | 0 | 4 |
| MTH 125 | Ethics of Massage | 2 | 0 | 0 | 2 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **12** | **0** | **0** | **12** |
| **Sixth Semester (Summer)** | | | | | |
| MTH 210 | Advanced Skills of Massage Therapy | 4 | 9 | 3 | 8 |
| | | **4** | **9** | **3** | **8** |
| **Seventh Semester (Fall)** | | | | | |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COM 120 | Intro to Interpersonal Communication | 3 | 0 | 0 | 3 |
| MTH 220AB | Outcome Based Massage | 2 | 6 | 0 | 4 |
| | | **7** | **8** | **0** | **10** |
| **Eighth Semester (Spring)** | | | | | |
| COE 111 | Co-op Work Experience I | 0 | 0 | 10 | 1 |
| MTH 220BB | Outcome Based Massage | 2 | 0 | 3 | 3 |
| | | **2** | **0** | **13** | **4** |
| **Program Totals** | | **54** | **41** | **22** | **74** |

## Therapeutic Massage - Diploma (D45750)

| Program Summary | Hours |
|---|---|
| General Education | 9 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 28 |
| Other Courses | 8 |
| Program Total | 45 |

Courses requiring a grade of "C" or better: BIO, BUS, MED, MTH and PSY

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| MED 120 | Survey of Medical Terminology | 2 | 0 | 0 | 2 |
| MTH 110 | Fundamentals of Massage | 6 | 9 | 3 | 10 |
| | | **12** | **13** | **3** | **18** |

| | | | | | |
|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | |
| BIO 271 | Pathophysiology | 3 | 0 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MTH 120 | Therapeutic Massage Applications | 6 | 9 | 3 | 10 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | | **15** | **9** | **3** | **19** |
| **Third Semester (Summer)** | | | | | |
| MAT 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| MTH 125 | Ethics of Massage | 2 | 0 | 0 | 2 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **7** | **2** | **0** | **8** |
| **Program Totals** | | **34** | **24** | **6** | **45** |

## Therapeutic Massage - Diploma - Evening Schedule (D45750)

(Begins in odd years only)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| MED 120 | Survey of Medical Terminology | 2 | 0 | 0 | 2 |
| MTH 110AB | Fundamentals of Massage | 3 | 6 | 0 | 5 |
| | | **5** | **8** | **0** | **8** |
| **Second Semester (Spring)** | | | | | |
| BIO 163 | Basic Anatomy and Physiology | 4 | 2 | 0 | 5 |
| MTH 110BB | Fundamentals of Massage | 3 | 3 | 3 | 5 |
| | | **7** | **5** | **3** | **10** |
| **Third Semester (Summer)** | | | | | |
| ENG 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MTH 120AB | Therapeutic Massage Applications | 3 | 6 | 0 | 5 |
| | | **6** | **6** | **0** | **8** |
| **Fourth Semester (Fall)** | | | | | |
| BIO 271 | Pathophysiology | 3 | 0 | 0 | 3 |
| MAT 115 | Mathematical Models | 2 | 2 | 0 | 3 |
| MTH 120BB | Therapeutic Massage Applications | 3 | 3 | 3 | 5 |
| | | **8** | **5** | **3** | **11** |
| **Fifth Semester (Spring)** | | | | | |
| MTH 125 | Ethics of Massage | 2 | 0 | 0 | 2 |
| PSY 150 | General Psychology | 3 | 0 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **8** | **0** | **0** | **8** |
| **Program Totals** | | **34** | **24** | **6** | **45** |

# 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.

Coursework 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 Associate in Applied Science (A25290)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 42 |
| Other Courses | 19 |
| Program Total | 76 |

Courses requiring a grade of "C" or better: BUS, CIS, CSC, DBA, GIS, NET, NOS, SEC, WEB

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| MAT 115 | Mathematical Models (or MAT 171 Precalculus Algebra) | 2 | 2 | 3 |
| WEB 110 | Internet/Web Fundamentals | 2 | 2 | 3 |
| | | **11** | **11** | **16** |
| **Second Semester (Spring)** | | | | |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| NOS 110 | Operating Systems Concepts | 2 | 3 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| WEB 182 | PHP Programming | 2 | 2 | 3 |
| | | **10** | **12** | **15** |

| | | | | |
|---|---|---|---|---|
| **Third Semester (Summer)** | | | | |
| NET 110 | Networking Concepts | 2 | 2 | 3 |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| WEB 120 | Introduction to Internet Multimedia | 2 | 2 | 3 |
| | | **6** | **6** | **9** |
| **Fourth Semester (Fall)** | | | | |
| COM 231 | Public Speaking (or ENG 114 Prof. Research and Reporting) | 3 | 0 | 3 |
| DBA 120 | Database Programming I | 2 | 2 | 3 |
| WEB 230 | Implementing Web Serv | 2 | 2 | 3 |
| WEB 250 | Database Driven Websites | 2 | 2 | 3 |
| | | **9** | **6** | **12** |
| **Fifth Semester (Spring)** | | | | |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| WEB 210 | Web Design | 2 | 2 | 3 |
| WEB 289 | Internet Technologies Project | 1 | 4 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **10** | **10** | **15** |
| **Sixth Semester (Summer)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Program Totals** | | **55** | **45** | **76** |

**Choose two of the following major electives:*

CSC 134 C++ Programming
CSC 139 Visual Basic Programming
CSC 151 Java Programming
DBA 210 Database Administration
GIS 111 Introduction to GIS
GIS 121 Georeferencing and Mapping
NOS 220 Linux/UNIX Admin I
NOS 221 Linux/UNIX Admin II
WEB 186 XML Technology
WEB 215 Adv. Markup and Scripting

## Web Technologies
## Associate in Applied Science - Evening Schedule (A25290)

(Begins in even years only)

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 3 |
| MAT 115 | Mathematical Models (or MAT 171 Precalculus Algebra) | 2 | 2 | 3 |
| WEB 110 | Internet/Web Fundamentals | 2 | 2 | 3 |
| | | **6** | **8** | **10** |
| **Second Semester (Spring)** | | | | |
| NOS 110 | Operating Systems Concepts | 2 | 3 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| | | **6** | **7** | **9** |
| **Third Semester (Summer)** | | | | |
| BUS 110 | Introduction to Business | 3 | 0 | 3 |
| ENG 111 | Expository Writing | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **9** | **0** | **9** |
| **Fourth Semester (Fall)** | | | | |
| CIS 115 | Intro to Programming and Logic | 2 | 3 | 3 |
| DBA 110 | Database Concepts | 2 | 3 | 3 |
| | | **4** | **6** | **6** |
| **Fifth Semester (Spring)** | | | | |
| NET 110 | Networking Concepts | 2 | 2 | 3 |
| WEB 120 | Introduction to Internet Multimedia | 2 | 2 | 3 |
| WEB 182 | PHP Programming | 2 | 2 | 3 |
| WEB 210 | Web Design | 2 | 2 | 3 |
| | | **8** | **8** | **12** |
| **Sixth Semester (Summer)** | | | | |
| COM 231 | Public Speaking (or ENG 114 Prof. Research and Reporting) | 3 | 0 | 3 |
| NOS 120 | Linux/UNIX Single User | 2 | 2 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **8** | **2** | **9** |
| **Seventh Semester (Fall)** | | | | |
| DBA 120 | Database Programming I | 2 | 2 | 3 |
| WEB 230 | Implementing Web Serv | 2 | 2 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **6** | **6** | **9** |

| | | | | |
|---|---|---|---|---|
| **Eighth Semester (Spring)** | | | | |
| WEB 250 | Database Driven Websites | 2 | 2 | 3 |
| | Major Elective* | 2 | 2 | 3 |
| | | **4** | **4** | **6** |
| **Ninth Semester (Summer)** | | | | |
| SEC 110 | Security Concepts | 3 | 0 | 3 |
| WEB 289 | Internet Technologies Project | 1 | 4 | 3 |
| | | **4** | **4** | **6** |
| **Program Totals** | | **55** | **45** | **76** |

**Choose two of the following major electives:*
CSC 134 C++ Programming
CSC 139 Visual Basic Programming
CSC 151 Java Programming
DBA 210 Database Administration
GIS 111 Introduction to GIS
GIS 121 Georeferencing and Mapping
NOS 220 Linux/UNIX Admin I
NOS 221 Linux/UNIX Admin II
WEB 186 XML Technology
WEB 215 Adv. Markup and Scripting

## Web Technologies
## Web Designer Certificate (C25290L1)

The Web Designer certificate provides students with an essential set of courses that prepares them to create effective Web sites. Students will learn essential skills of Web design and gain proficiency in the software tools necessary to create Web sites. Courses cover multiple aspects of Internet-related technologies, including: Internet protocols and tools, web site design, markup languages, client-side scripting, and multimedia development.

This certificate is designed for students who have experience with computers and wish to acquire a credential that provides evidence of their proficiency in web design.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| WEB 110 | Internet/Web Fundamentals | 2 | 2 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| WEB 120 | Introduction to Internet Multimedia | 2 | 2 | 3 |
| WEB 140 | Web Development Tools | 2 | 2 | 3 |
| WEB 210 | Web Design | 2 | 2 | 3 |
| **Certificate Totals** | | **10** | **10** | **15** |

## Web Technologies
## Web Programmer Certificate (C25290L2)

The Web Programming certificate provides courses in the programming/database aspects of Internet-related technologies. Coursework includes client- and server-side scripting, Web/database programming, and an advanced programming elective (XML, Java, or Advanced Markup and Scripting).

This certificate is designed for students who have experience with computers and wish to acquire a credential that provides evidence of their proficiency in web programming.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| DBA 120 | Database Programming I | 2 | 2 | 3 |
| WEB 115 | Web Markup and Scripting | 2 | 2 | 3 |
| WEB 182 | PHP Programming | 2 | 2 | 3 |
| WEB 250 | Database Driven Websites | 2 | 2 | 3 |
| **Select ONE of the following courses:** | | | | |
| CSC 151 | Java Programming | 2 | 3 | 3 |
| WEB 186 | XML Technology | 2 | 2 | 3 |
| WEB 215 | Adv. Markup and Scripting | 2 | 2 | 3 |
| **Certificate Totals** | | **10** | **10-11** | **15** |

# Engineering and Applied Technology

The Engineering and Applied Technology division offers a variety of Associate in Applied Science degree programs in engineering technologies and applied technologies. Most programs are available on a day and evening basis.

Students enrolled in this division are provided an appropriate mix of theory and hands-on applications. Students in the diploma programs spend much of their time working under industrial shop conditions. Modern facilities include well-equipped laboratories and shops to support goals of the programs. Emphasis is placed on student proficiency in the use of procedures, equipment, and instruments related to the specific program area. Appropriate related and general education courses support these applied programs.

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator. Please refer to pages 10 and 55 for more information.

**A.A.S. Degrees Conferred**

Automotive Systems Technology
Civil Engineering Technology
Computer-Aided Drafting Technology
Computer Engineering Technology
Construction Management Technology
Electrical/Electronics Technology
Electronics Engineering Technology
Heavy Equipment and Transport Technology
Industrial Systems Technology
Machining Technology
Mechanical Engineering Technology
Surveying Technology
Welding Technology

**Diplomas Awarded**

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Carpentry
Electrical/Electronics Technology
Heavy Equipment and Transport Technology
Industrial Systems Technology
Machining Technology
Welding Technology

**Certificates**

Air Conditioning, Heating and Refrigeration Technology - Basic
Air Conditioning, Heating and Refrigeration Technology - Intermediate
Air Conditioning, Heating and Refrigeration Technology - Advanced
Automotive Systems Technology - Basic Automotive Repair
Automotive Systems Technology - Drive Trains
Automotive Systems Technology - Electrical/Electronics
Automotive Systems Technology - Under-Car
Carpentry - Basic Carpentry
Carpentry - Basic Cabinetry
Computer Engineering Technology - Personal Computer and Network Maintenance
Computer-Aided Drafting Technology - Computer-Aided Drafting
Computer-Aided Drafting Technology - Architectural Drafting
Computer-Aided Drafting Technology - Landscape Architecture Drafting
Construction Management Technology
Electrical/Electronics Technology - Electrical Wiring
Electrical/Electronics Technology - Instrumentation and Control
Electrical/Electronics Technology - Building Automation & Controls
Heavy Equipment and Transport Technology
Industrial Systems Technology - Basic Maintenance
Industrial Systems Technology - Metal Fabrication
Machining Technology - Basic
Machining Technology - CNC Programming
Machining Technology - Advanced CNC Programming
Machining Technology - Fundamentals of Metals
Mechanical Engineering Technology - Plastic Injection Molding
Mechanical Engineering Technology - Mechanical Drafting
Mechanical Engineering Technology - Quality & cGMP
Surveying Technology - Civil/Surveying CAD
Surveying Technology - Surveying Fundamentals
Welding Technology - Basic Welding I
Welding Technology - Ornamental Ironwork

# 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. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems.

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.

Please note: The Intermediate and Advanced Certificates include mechanical & fuel gas codes, residential system sizing, and advanced comfort systems. The AAS Degree is not offered, however Students who complete the Air Conditioning, Heating, and Refrigeration Diploma may be interested in completing and Associates Degree in either Construction Management or Industrial Systems. Some of the courses taken in the diploma may apply to those degrees.

## Air Conditioning, Heating and Refrigeration Technology
## Diploma - Day Schedule (D35100)

| Program Summary | Hours |
|---|---|
| General Education | 7 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| Core Courses | 20 |
| Other Courses | 16 |
| Program Total | 43 |

Courses requiring a grade of "C" or better: AHR, and ELC 132

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| AHR 112 | Heating | 2 | 4 | 4 |
| AHR 170 | Heating Lab (or AHR 120) | 0 | 3 | 1 |
| AHR 111 | Introduction to Electricity | 2 | 2 | 3 |
| ELC 132 | Electrical Drawings | 1 | 3 | 2 |
| COM 120 | Interpersonal Communication (or COM 231) | 3 | 0 | 3 |
| PHY 121 | Applied Physics I | 3 | 2 | 4 |
| | | **11** | **14** | **17** |
| **Second Semester (Spring)** | | | | |
| AHR 110 | Introduction to Refrigeration | 2 | 6 | 5 |
| AHR 113 | Comfort Cooling | 2 | 4 | 4 |
| AHR 125 | HVAC Electronics | 1 | 3 | 2 |
| AHR 130 | HVAC Controls | 2 | 2 | 3 |
| WLD 113 | Soldering and Brazing (or WLD 111) | 1 | 2 | 2 |
| AHR 210 | Residential Building Code (or AHR 211 or AHR 212) | 1 | 2 | 2 |
| | | **9** | **19** | **18** |
| **Third Semester (Summer)** | | | | |
| AHR 114 | Heat Pump Technology | 2 | 4 | 4 |
| AHR 172 | Heat Pump Lab (or AHR 115) | 0 | 3 | 1 |
| AHR 160 | Refrigerant Certification | 1 | 0 | 1 |
| BPR 135 | Schematics and Diagrams | 2 | 0 | 2 |
| | | **5** | **7** | **8** |
| **Program Totals** | | **25** | **40** | **43** |

## Air Conditioning, Heating and Refrigeration Technology Diploma - Evening Schedule (D35100)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| AHR 112 | Heating Technology | 2 | 4 | 4 |
| AHR 111 | Introduction to Electricity | 2 | 2 | 3 |
| | | **4** | **6** | **7** |
| **Second Semester (Spring)** | | | | |
| AHR 170 | Heating Lab (pending approval) (or AHR 120) | 0 | 3 | 1 |
| AHR 130 | HVAC Controls | 2 | 2 | 3 |
| ELC 132 | Electrical Drawings | 1 | 3 | 2 |
| WLD 113 | Soldering and Brazing (or WLD 111) | 1 | 2 | 2 |
| | | **4** | **10** | **8** |
| **Third Semester (Summer)** | | | | |
| BPR 135 | Schematics and Diagrams | 2 | 0 | 2 |
| COM 120 | Interpersonal Communication (or COM 231) | 3 | 0 | 3 |
| | | **5** | **0** | **5** |
| **Fourth Semester (Fall)** | | | | |
| AHR 110 | Introduction to Refrigeration | 2 | 6 | 5 |
| PHY 121 | Applied Physics I | 3 | 2 | 4 |
| | | **5** | **8** | **9** |
| **Fifth Semester (Spring)** | | | | |
| AHR 113 | Comfort Cooling | 2 | 4 | 4 |
| AHR 125 | HVAC Electronics | 1 | 3 | 2 |
| | | **3** | **7** | **6** |

| | | | | |
|---|---|---|---|---|
| **Sixth Semester (Summer)** | | | | |
| AHR 160 | Refrigerant Certification | 1 | 0 | 1 |
| | | **1** | **0** | **1** |
| **Seventh Semester (Fall)** | | | | |
| AHR 114 | Heat Pump Technology | 2 | 4 | 4 |
| AHR 172 | Heat Pump Lab | 0 | 3 | 1 |
| AHR 210 | Residential Building Code (or AHR 211 or AHR 212) | 1 | 2 | 2 |
| | | **3** | **9** | **7** |
| **Program Totals** | | **25** | **40** | **43** |

## Air Conditioning, Heating and Refrigeration Technology
## Basic Certificate (C35100L1)

The Basic Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair various types of domestic furnaces and air conditioners.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| AHR 110 | Introduction to Refrigeration | 2 | 6 | 5 |
| AHR 111 | Introduction to Electricity | 2 | 2 | 3 |
| AHR 112 | Heating | 2 | 4 | 4 |
| AHR 120 | HVACR Maintenance | 1 | 3 | 2 |
| ELC 132 | Electrical Drawings | 1 | 3 | 2 |
| **Certificate Totals** | | **8** | **18** | **16** |

## Air Conditioning, Heating and Refrigeration Technology
## Intermediate Certificate (C35100L2)

The Intermediate Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair domestic heat pumps, light commercial air conditioning, and light commercial heating units. The material for the EPA's CFC license will be covered, and the exam for this will be given during the program.

The Basic Air Conditioning and Heating certificate program must be completed before beginning this program.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| AHR 113 | Introduction to Cooling | 2 | 4 | 4 |
| AHR 125 | HVAC Electronics | 1 | 3 | 2 |
| AHR 130 | HVAC Controls | 2 | 2 | 3 |
| WLD 113 | Soldering and Brazing (or WLD 111) | 1 | 2 | 2 |
| AHR 115 | Refrigeration Systems | 1 | 3 | 2 |
| BPR 135 | Schematics and Diagrams | 2 | 0 | 2 |
| **Certificate Totals** | | **9** | **14** | **15** |

## Air Conditioning, Heating and Refrigeration Technology
## Advanced Certificate (C35100L3)

(Evening Program only)

Students taking the Advanced Air Conditioning and Heating Certificate program will be able to perform accurate heat load and heat loss calculations for the correct sizing of furnaces and cooling units for homes. They will also be able to design and install air duct systems as to the manufacturer's and building code's specifications. Studies of hot water and steam heating systems, commercial cooling equipment, and ground source heat pumps will further help the students acquire technical knowledge and skills.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| AHR 114 | Heat Pump Technology | 2 | 4 | 4 |
| AHR 210 | Residential Building Code | 1 | 2 | 2 |
| AHR 211 | Residential Systems Design | 2 | 2 | 3 |
| AHR 212A | Advanced Comfort Systems I | 1 | 3 | 2 |
| AHR 212B | Advanced Comfort Systems II | 1 | 3 | 2 |
| **Certificate Totals** | | **7** | **14** | **13** |

# 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.

## Automotive Systems Technology
## Associate in Applied Science Degree (A60160)

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 17 |
| Other Courses | 34 |
| Program Total | 67 |

Courses requiring a grade of "C" or better: AUT and COE

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| AUT 110 | Intro to Automotive Technology | 2 | 2 | 0 | 3 |
| AUT 116 | Engine Repair | 2 | 3 | 0 | 3 |
| AUT 116A | Engine Repair Lab | 0 | 3 | 0 | 1 |
| AUT 161 | Basic Automotive Electricity | 4 | 3 | 0 | 5 |
| PHY 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A) | 3 | 2 | 0 | 4 |
| | | **11** | **15** | **0** | **17** |
| **Second Semester (Spring)** | | | | | |
| AUT 114 | Safety and Emissions | 1 | 2 | 0 | 2 |
| AUT 151 | Brake Systems | 2 | 3 | 0 | 3 |
| AUT 151A | Brake Systems Lab | 0 | 3 | 0 | 1 |
| AUT 163 | Advanced Automotive Electricity | 2 | 3 | 0 | 3 |
| AUT 181 | Engine Performance I | 2 | 3 | 0 | 3 |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 0 | 3 |
| | | **10** | **14** | **0** | **15** |
| **Third Semester (Summer)** | | | | | |
| AUT 141 | Suspension and Steering Systems | 2 | 3 | 0 | 3 |
| AUT 141A | Suspension and Steering Sys. Lab | 0 | 3 | 0 | 1 |
| AUT 171 | Auto Climate Control | 2 | 4 | 0 | 4 |
| AUT 281 | Advanced Engine Performance | 2 | 2 | 0 | 3 |
| | | **6** | **12** | **0** | **11** |
| **Fourth Semester (Fall)** | | | | | |
| AUT 231 | Manual Trans/Axles/D. Trains | 2 | 3 | 0 | 3 |
| AUT 231A | Manual Trans/Axles/D. Trains Lab | 0 | 3 | 0 | 1 |
| CIS 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COE 112 | Co-operative Work Experience | 0 | 0 | 20 | 2 |
| | Communications Elective* | 3 | 0 | 0 | 3 |
| | | **7** | **8** | **20** | **12** |
| **Fifth Semester (Spring)** | | | | | |
| AUT 221 | Automotive Transmissions | 2 | 3 | 0 | 3 |
| AUT 221A | Automotive Transmissions Lab | 0 | 3 | 0 | 1 |
| COE 122 | Co-operative Work Experience | 0 | 0 | 20 | 2 |
| | Humanities/Fine Arts Elective | 3 | 0 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | **8** | **6** | **20** | **12** |
| **Program Totals** | | **42** | **55** | **40** | **67** |

***Communications Elective:**

**Select one course from:**

ENG 114 Professional Research and Reporting
COM 120 Intro to Interpersonal Communication
COM 231 Public Speaking

## Automotive Systems Technology Associate in Applied Science Degree - Evening Schedule (A60160)

| | | Weekly | | | |
|---|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| AUT 110 | Intro to Automotive Technology | 2 | 2 | 0 | 3 |
| AUT 161 | Basic Automotive Electricity | 4 | 3 | 0 | 5 |
| | | **6** | **7** | **0** | **9** |
| **Second Semester (Spring)** | | | | | |
| AUT 114 | Safety and Emissions | 1 | 2 | 0 | 2 |
| AUT 116 | Engine Repair | 2 | 3 | 0 | 3 |
| AUT 116A | Engine Repair Lab | 0 | 3 | 0 | 1 |
| AUT 163 | Advanced Automotive Electricity | 2 | 3 | 0 | 3 |
| | | **5** | **11** | **0** | **9** |
| **Third Semester (Summer)** | | | | | |
| AUT 171 | Auto Climate Control | 2 | 4 | 0 | 4 |
| AUT 181 | Engine Performance I | 2 | 3 | 0 | 3 |
| | | **4** | **7** | **0** | **7** |
| **Fourth Semester (Fall)** | | | | | |
| AUT 141 | Suspension and Steering Systems | 2 | 3 | 0 | 3 |
| AUT 141A | Suspension and Steering Sys. Lab | 0 | 3 | 0 | 1 |
| AUT 151 | Brake Systems | 2 | 3 | 0 | 3 |
| AUT 151A | Brake Systems Lab | 0 | 3 | 0 | 1 |
| | | **4** | **12** | **0** | **8** |

| | | | | | |
|---|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | | |
| AUT | 281 | Advanced Engine Performance | 2 | 2 | 0 | 3 |
| ENG | 110 | Freshman Composition (or ENG 111) | 3 | 0 | 0 | 3 |
| PHY | 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A) | 3 | 2 | 0 | 4 |
| | | | **8** | **4** | **0** | **10** |
| **Sixth Semester (Fall)** | | | | | | |
| AUT | 231 | Manual Trans/Axles/D. Trains | 2 | 3 | 0 | 3 |
| AUT | 231A | Manual Trans/Axles/D. Trains Lab | 0 | 3 | 0 | 1 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 0 | 3 |
| COE | 112 | Co-operative Work Experience | 0 | 0 | 20 | 2 |
| | | Communications Elective* | 3 | 0 | 0 | 3 |
| | | | **7** | **8** | **20** | **12** |
| **Seventh Semester (Spring)** | | | | | | |
| AUT | 221 | Automotive Transmissions | 2 | 3 | 0 | 3 |
| AUT | 221A | Automotive Transmissions Lab | 0 | 3 | 0 | 1 |
| COE | 122 | Co-operative Work Experience | 0 | 0 | 20 | 2 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 0 | 3 |
| | | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | | **8** | **6** | **20** | **12** |
| **Program Totals** | | | **42** | **55** | **40** | **67** |

***Communications Elective:**

**Select one course from:**

ENG 114 Professional Research and Reporting
COM 120 Intro to Interpersonal Communication
COM 231 Public Speaking

## Automotive Systems Technology Diploma (D60160)

| Program Summary | Hours |
|---|---|
| General Education | 7 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| Core Courses | 17 |
| Other Courses | 19 |
| Program Total | 43 |

Courses requiring a grade of "C" or better: AUT and COE

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| AUT | 110 | Intro to Automotive Technology | 2 | 2 | 0 | 3 |
| AUT | 116 | Engine Repair | 2 | 3 | 0 | 3 |
| AUT | 116A | Engine Repair Lab | 0 | 3 | 0 | 1 |
| AUT | 161 | Basic Automotive Electricity | 4 | 3 | 0 | 5 |
| PHY | 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A) | 3 | 2 | 0 | 4 |
| | | | **11** | **15** | **0** | **17** |
| **Second Semester (Spring)** | | | | | | |
| AUT | 114 | Safety and Emissions | 1 | 2 | 0 | 2 |
| AUT | 151 | Brake Systems | 2 | 3 | 0 | 3 |
| AUT | 151A | Brake Systems Lab | 0 | 3 | 0 | 1 |
| AUT | 163 | Advanced Automotive Electricity | 2 | 3 | 0 | 3 |
| AUT | 181 | Engine Performance I | 2 | 3 | 0 | 3 |
| ENG | 110 | Freshman Composition (or ENG 111 Expository Writing) | 3 | 0 | 0 | 3 |
| | | | **10** | **14** | **0** | **15** |
| **Third Semester (Summer)** | | | | | | |
| AUT | 141 | Suspension and Steering Systems | 2 | 3 | 0 | 3 |
| AUT | 141A | Suspension and Steering Sys. Lab | 0 | 3 | 0 | 1 |
| AUT | 171 | Auto Climate Control | 2 | 4 | 0 | 4 |
| AUT | 281 | Advanced Engine Performance | 2 | 2 | 0 | 3 |
| | | | **6** | **12** | **0** | **11** |
| **Program Totals** | | | **27** | **41** | **0** | **43** |

## Automotive Systems Technology Diploma - Evening Schedule (D60160)

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| AUT | 110 | Intro to Automotive Technology | 2 | 2 | 0 | 3 |
| AUT | 161 | Basic Automotive Electricity | 4 | 3 | 0 | 5 |
| | | | **6** | **7** | **0** | **9** |

| | | | | | |
|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | |
| AUT | 114 | Safety and Emissions | 1 | 2 | 0 | 2 |
| AUT | 116 | Engine Repair | 2 | 3 | 0 | 3 |
| AUT | 116A | Engine Repair Lab | 0 | 3 | 0 | 1 |
| AUT | 163 | Advanced Automotive Electricity | 2 | 3 | 0 | 3 |
| | | | **5** | **11** | **0** | **9** |
| **Third Semester (Summer)** | | | | | | |
| AUT | 171 | Auto Climate Control | 2 | 4 | 0 | 4 |
| AUT | 181 | Engine Performance I | 2 | 3 | 0 | 3 |
| | | | **4** | **7** | **0** | **7** |
| **Fourth Semester (Fall)** | | | | | | |
| AUT | 141 | Suspension and Steering Systems | 2 | 3 | 0 | 3 |
| AUT | 141A | Suspension and Steering Sys. Lab | 0 | 3 | 0 | 1 |
| AUT | 151 | Brake Systems | 2 | 3 | 0 | 3 |
| AUT | 151A | Brake Systems Lab | 0 | 3 | 0 | 1 |
| | | | **4** | **12** | **0** | **8** |
| **Fifth Semester (Spring)** | | | | | | |
| AUT | 281 | Advanced Engine Performance | 2 | 2 | 0 | 3 |
| ENG | 110 | Freshman Composition (or ENG 111) | 3 | 0 | 0 | 3 |
| PHY | 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A) | 3 | 2 | 0 | 4 |
| | | | **8** | **4** | **0** | **10** |
| **Program Totals** | | | **27** | **41** | **0** | **43** |

## Automotive Systems Technology Basic Automotive Repair Certificate (C60160L5)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| AUT | 110 | Intro to Automotive Technology | 2 | 2 | 3 |
| AUT | 151 | Brake Systems | 2 | 3 | 3 |
| AUT | 151A | Brake Systems Lab | 0 | 3 | 1 |
| AUT | 161 | Basic Automotive Electricity | 4 | 3 | 5 |
| AUT | 163 | Advanced Automotive Electricity | 2 | 3 | 3 |
| **Certificate Totals** | | | **10** | **14** | **15** |

## Automotive Systems Technology Drive-Trains Certificate (C60160L2)

| | | | | | |
|---|---|---|---|---|---|
| AUT | 110 | Intro to Automotive Technology | 2 | 2 | 3 |
| AUT | 116 | Engine Repair | 2 | 3 | 3 |
| AUT | 116A | Engine Repair Lab | 0 | 3 | 1 |
| AUT | 221 | Automotive Transmissions | 2 | 3 | 3 |
| AUT | 221A | Automotive Transmissions Lab | 0 | 3 | 1 |
| AUT | 231 | Manual Trans/Axles/D. Trains | 2 | 3 | 3 |
| AUT | 231A | Manual Trans/Axles/D. Trains Lab | 0 | 3 | 1 |
| **Certificate Totals** | | | **8** | **20** | **15** |

## Automotive Systems Technology Electrical/Electronics Certificate (C60160L3)

| | | | | | |
|---|---|---|---|---|---|
| AUT | 110 | Intro to Automotive Technology | 2 | 2 | 3 |
| AUT | 161 | Basic Automotive Electricity | 4 | 3 | 5 |
| AUT | 163 | Advanced Automotive Electricity | 2 | 3 | 3 |
| AUT | 281 | Advanced Engine Performance | 2 | 2 | 3 |
| **Certificate Totals** | | | **10** | **10** | **14** |

## Automotive Systems Technology Under-Car Certificate (C60160L4)

| | | | | | |
|---|---|---|---|---|---|
| AUT | 110 | Introduction to Automotive | 2 | 2 | 3 |
| AUT | 114 | Safety and Emissions | 1 | 2 | 2 |
| AUT | 141 | Suspension and Steering Systems | 2 | 3 | 3 |
| AUT | 141A | Suspension and Steering Sys. Lab | 0 | 3 | 1 |
| AUT | 151 | Brake Systems | 2 | 3 | 3 |
| AUT | 152 | Brake Systems Lab | 0 | 3 | 1 |
| **Certificate Totals** | | | **7** | **16** | **13** |

# Carpentry

The Carpentry curriculum is designed to train students to construct residential structures using standard building materials and hand and power tools. Carpentry skills and a general knowledge of residential construction methods will also be taught.

Course work includes footings and foundations, framing, interior and exterior trim, cabinetry, blueprint reading, residential planning and estimating, and other related topics. Students will develop skills through hands-on participation.

Graduates should qualify for employment in the residential building construction field as rough carpenters, framing carpenters, roofers, maintenance carpenters, and other related job titles.

## Carpentry - Diploma (D35180)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| Core Courses | 29 |
| Other Courses | 11 |
| Program Total | 46 |

Courses requiring a grade of "C" or better: BPR, CAB, CAR and DFT

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| CAR | 110 | Introduction to Carpentry | 2 | 0 | 2 |
| CAR | 111 | Carpentry I | 3 | 15 | 8 |
| BPR | 130 | Blueprint Reading/Construction | 1 | 2 | 2 |
| ISC | 115 | Construction Safety | 2 | 0 | 2 |
| | | | **8** | **17** | **14** |
| **Second Semester (Spring)** | | | | | |
| CAR | 112 | Carpentry II | 3 | 15 | 8 |
| CAB | 111AB | Cabinetmaking I (or CAB 119AB) | 4 | 3 | 5 |
| DFT | 119 | Basic CAD | 1 | 2 | 2 |
| | | (or CAR 114) | 3 | 0 | 3 |
| | | | **8** | **20** | **15** |
| **Third Semester (Summer)** | | | | | |
| CAB | 111BB | Cabinetmaking I (or CAB 119BB) | 0 | 6 | 2 |
| ENG | 110 | Freshman Composition (or ENG 111, ENG 102, or COM 120) | 3 | 0 | 3 |
| MAT | 101 | Applied Mathematics I (or PHY 121, or MAT 121, or PHY 110/110B) | 2 | 2 | 3 |
| | | | **5** | **8** | **8** |
| **Fourth Semester (Fall)** | | | | | |
| CAR | 115 | Residential Planning/Estimating | 3 | 0 | 3 |
| CAR | 113 | Carpentry III | 3 | 9 | 6 |
| | | | **6** | **9** | **9** |
| **Program Totals** | | | **27** | **54** | **46** |

## Basic Carpentry Certificate (Evenings) (C35180L1)

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| ISC | 115 | Construction Safety | 2 | 0 | 2 |
| CAR | 111 | Carpentry I (or CAR 111AB & CAR 111BB) | 3 | 15 | 8 |
| BPR | 130 | Blueprint Reading/Construction | 1 | 2 | 2 |
| CAR | 114 | Residential Building Codes | 3 | 0 | 3 |
| CAR | 115 | Residential Planning and Estimating | 3 | 0 | 3 |
| **Certificate Totals** | | | **12** | **17** | **18** |

## Basic Cabinetry Certificate (Evenings) (C35180L2)

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| ISC | 115 | Construction Safety | 2 | 0 | 2 |
| CAB | 111 | Cabinetmaking I (or CAB 111AB & CAB 111BB) | 4 | 9 | 7 |
| CAB | 119 | Cabinetry/Millworking (or CAB 119AB & CAB 119BB) | 4 | 9 | 7 |
| DFT | 119 | Basic CAD | 1 | 2 | 2 |
| **Certificate Totals** | | | **11** | **20** | **18** |

# 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.

Coursework 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 coursework 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 Associate in Applied Science Degree (A40140)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 29 |
| Other Courses | 21 |
| Program Total | 65 |

Courses requiring a grade of "C" or better: CIV, EGR and SRV

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First Year Seminar (or EGR 110) | 0 | 2 | 1 |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech (or DFT 151) | 1 | 2 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT171/171A) | 2 | 2 | 3 |
| | | | **8** | **9** | **12** |

| | | | | | |
|---|---|---|---|---|---|
| **Second Semester (Spring)** | | | | | |
| CIV | 110 | Statics/Strength of Materials (or MEC 250) | 2 | 6 | 4 |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| ENG | 114 | Prof. Research and Reporting (or COM 120, or COM 231) | 3 | 0 | 3 |
| SRV | 110 | Surveying I | 2 | 6 | 4 |
| | | | **8** | **18** | **14** |
| **Third Semester (Summer)** | | | | | |
| CIV | 211 | Hydraulics and Hydrology | 2 | 3 | 3 |
| SRV | 111 | Surveying II | 2 | 6 | 4 |
| | | Social/Behavioral Sciences Elective | 3 | 0 | 3 |
| | | | **7** | **9** | **10** |
| **Fourth Semester (Fall)** | | | | | |
| CIV | 111 | Soils and Foundations | 2 | 3 | 3 |
| CIV | 210 | Engineering Materials | 1 | 3 | 2 |
| CIV | 215 | Highway Technology | 1 | 3 | 2 |
| CIV | 220 | Basic Structural Concepts | 1 | 3 | 2 |
| CIV | 230 | Construction Estimating | 2 | 3 | 3 |
| CIV | 240 | Project Management | 2 | 3 | 3 |
| | | | **9** | **18** | **15** |
| **Fifth Semester (Spring)** | | | | | |
| CIV | 212 | Environmental Planning | 2 | 3 | 3 |
| CIV | 221 | Steel and Timber Design | 2 | 3 | 3 |
| CIV | 222 | Reinforced Concrete | 2 | 3 | 3 |
| CIV | 250 | Civil Eng Tech Project | 1 | 3 | 2 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **10** | **12** | **14** |
| **Program Totals** | | | **42** | **66** | **65** |

## Civil Engineering Technology Associate in Applied Science Degree – Evening Schedule (A40140)

(Begins in odd years only)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech (or DFT 151) | 1 | 2 | 2 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A) | 2 | 2 | 3 |
| | | | **5** | **7** | **8** |
| **Second Semester (Spring)** | | | | | |
| ACA | 115 | First Year Seminar (or EGR 110) | 0 | 2 | 1 |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| SRV | 110 | Surveying I | 2 | 6 | 4 |
| | | | **3** | **14** | **8** |
| **Third Semester (Summer)** | | | | | |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| | | | **3** | **0** | **3** |
| **Fourth Semester (Fall)** | | | | | |
| CIV | 110 | Statics/Strength of Materials (or MEC 250) | 2 | 6 | 4 |
| SRV | 111 | Surveying II | 2 | 6 | 4 |
| | | | **4** | **12** | **8** |
| **Fifth Semester (Spring)** | | | | | |
| CIV | 111 | Soils and Foundations | 2 | 3 | 3 |
| CIV | 210 | Engineering Materials | 1 | 3 | 2 |
| ENG | 114 | Prof. Research and Reporting (or COM 120, or COM 231) | 3 | 0 | 3 |
| | | | **6** | **6** | **8** |
| **Sixth Semester (Summer)** | | | | | |
| CIV | 211 | Hydraulics and Hydrology | 2 | 3 | 3 |
| | | | **2** | **3** | **3** |
| **Seventh Semester (Fall)** | | | | | |
| CIV | 215 | Highway Technology | 1 | 3 | 2 |
| CIV | 220 | Basic Structural Concepts | 1 | 3 | 2 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **5** | **6** | **7** |
| **Eighth Semester (Spring)** | | | | | |
| CIV | 212 | Environmental Planning | 2 | 3 | 3 |
| CIV | 221 | Steel and Timber Design | 2 | 3 | 3 |
| CIV | 230 | Construction Estimating | 2 | 3 | 3 |
| | | | **6** | **9** | **9** |
| **Ninth Semester (Summer)** | | | | | |
| CIV | 240 | Project Management | 2 | 3 | 3 |
| | | | **2** | **3** | **3** |
| **Tenth Semester (Fall)** | | | | | |
| CIV | 222 | Reinforced Concrete | 2 | 3 | 3 |
| CIV | 250 | Civil Engineering Technology Project | 1 | 3 | 2 |
| | | Social/Behavioral Sciences Elective | 3 | 0 | 3 |
| | | | **6** | **6** | **8** |
| **Program Totals** | | | **42** | **66** | **65** |

## Computer-Aided Drafting Technology

This curriculum prepares individuals for employment as computer-aided drafting technicians. Graduates should be prepared for a wide variety of jobs that involve managing the hardware and software of a CAD system. Emphasis is placed on developing the student's ability to interface with computer hardware and software in a CAD office.

Students will use CAD workstations to create and manage two and three-dimensional models for a wide variety of fields. Students will link CAD documents to other applications such as a database, GIS maps,

spreadsheets, word processing, or CNC machining systems. Course work includes the study of drafting, computer hardware and operating systems, two- and three- dimensional computer models, solid modeling, rendering, and engineering systems.

Graduates should qualify for CAD jobs in a wide variety of fields that use computer-aided drafting technology. Job titles include CAD technician, CAD manager, CAD drafter and detail drafter.

Please note: The CAD program also includes course work in creating architectural and landscape designs, with an emphasis on sustainable practices in these areas.

## Computer-Aided Drafting Technology Associate in Applied Science Degree (A50150)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 18 |
| Other Courses | 41-43 |
| Program Total | 74-76 |

Courses requiring a grade of "C" or better: ACA, ARC, ART, CET, CIS, CST, DFT, EGR, GIS, LAR, SRV, and MEC

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar (or EGR 110) | 0 | 2 | 1 |
| ARC | 111 | Intro to Architecture Technology | 1 | 6 | 3 |
| EGR | 125 | Application Software for Technicians (or CIS 110, or CIS 111) | 1 | 2 | 2 |
| DFT | 151 | CAD I | 2 | 3 | 3 |
| LAR | 242 | Planning and Environment | 2 | 2 | 3 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **9** | **15** | **15** |
| **Second Semester (Spring)** | | | | | |
| ARC | 112 | Construction Materials and Methods | 3 | 2 | 4 |
| ARC | 113 | Residential Architecture Technology | 1 | 6 | 3 |
| CET | 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| DFT | 152 | CAD II | 2 | 3 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A) | 2 | 2 | 3 |
| | | | **10** | **16** | **16** |
| **Third Semester (Summer)** | | | | | |
| CST | 211 | Construction Surveying (or SRV 110) | 2 | 3 | 3 |
| DFT | 153 | CAD III | 2 | 3 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| LAR | 210 | Prin of Landscape Arch | 1 | 3 | 2 |
| | | | **8** | **9** | **11** |
| **Fourth Semester (Fall)** | | | | | |
| ARC | 230 | Environmental Systems | 3 | 3 | 4 |
| DFT | 154 | Intro to Solid Modeling | 2 | 3 | 3 |
| DFT | 251 | Customizing CAD Software | 2 | 2 | 3 |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | Technical Elective* | 0-3 | 0-6 | 1-3 |
| | | | **11-14** | **14-20** | **17-19** |
| **Fifth Semester (Spring)** | | | | | |
| COM | 231 | Public Speaking (or ENG 114) | 3 | 0 | 3 |
| DFT | 253 | CAD Data Management | 2 | 2 | 3 |
| DFT | 259 | CAD Project | 1 | 4 | 3 |
| MEC | 110 | Introduction to CAD/CAM | 1 | 2 | 2 |
| LAR | 230 | Prin of Exterior Planting | 3 | 3 | 4 |
| | | | **10** | **11** | **15** |
| **Program Totals** | | | **48-51** | **65-71** | **74-76*** |

*Includes a minimum of one-three credit hours to be selected from: ARC 131, ARC 240, ARC 261, ART 121 or ART 171, CET 211, COE 111CA, DFT 170, DFT 189, EGR 115, GIS 111.

## Computer-Aided Drafting Technology Certificate (C50150L1)

The purpose of this certificate program is to provide basic computer-aided drafting (CAD) skills. Students learn CAD techniques for producing 2D and 3D technical drawings using different CAD software programs. Accurate and efficient use of the computer and software are emphasized.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | Class Hrs. | Lab Hrs. | Credit Hrs. |
| DFT | 151 | CAD I | 2 | 3 | 3 |
| DFT | 152 | CAD II | 2 | 3 | 3 |
| DFT | 153 | CAD III (or DFT 154) | 2 | 3 | 3 |
| DFT | 251 | Customizing CAD Software (or GIS 125 or DFT 189) | 2 | 2 | 3 |
| **Certificate Totals** | | | **8** | **11** | **12** |

## Architectural Drafting Certificate (C50150L2)

The purpose of this certificate program is to provide basic architectural drafting skills. Students will produce residential construction drawings including floor plans, foundation plans, typical wall sections, elevations, and details following standard practices. Topics include drafting practices, 2D CAD software, traditional and sustainable building methods, and building materials.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ARC | 111 | Intro to Architecture Technology | 1 | 6 | 3 |
| DFT | 151 | CAD I | 2 | 3 | 3 |
| | | | **3** | **9** | **6** |
| **Second Semester (Spring)** | | | | | |
| ARC | 112 | Construction Materials and Methods | 3 | 2 | 4 |
| ARC | 113 | Residential Architecture Technology | 1 | 6 | 3 |
| | | | **4** | **8** | **7** |
| **Certificate Totals** | | | **7** | **17** | **13** |

## Landscape Architecture Drafting Certificate (C50150L3)

The purpose of this certificate program is to provide basic drafting and planning skills for sustainable landscape design. Students will study regenerative strategies for landscape planning. They will also construct landscape architecture drawings using 2D and 3D CAD programs. Topics include drafting practices, 2D and 3D CAD software, sustainable practices for landscape design, and plant selection.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| DFT | 151 | CAD I | 2 | 3 | 3 |
| LAR | 210 | Principles of Landscape Architecture | 1 | 3 | 2 |
| LAR | 230 | Principles of Exterior Planting | 3 | 3 | 4 |
| LAR | 242 | Planning and Environment | 2 | 2 | 3 |
| **Certificate Totals** | | | **9** | **17** | **15** |

# 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 of knowledge in electronics and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

## Computer Engineering Technology Associate in Applied Science Degree (A40160)

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *6* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 21 |
| Other Courses | 36 |
| Program Total | 75* |

Courses requiring a grade of "C" or better: CET, CSC, EGR, ELC, ELN, MAT and PHY

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| CET | 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| EGR | 110 | Introduction to Engineering | 1 | 2 | 2 |
| ELC | 138 | DC Circuit Analysis | 2 | 3 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A)** | 2 | 2 | 3 |
| | | | **10** | **10** | **14** |
| **Second Semester (Spring)** | | | | | |
| CET | 211 | Computer Upgrade/Repair II | 2 | 3 | 3 |
| EGR | 125 | Application Software for Technology | 1 | 2 | 2 |
| ELC | 139 | AC Circuit Analysis | 2 | 3 | 3 |
| MAT | 122 | Algebra/Trigonometry II (or MAT 172/172A)** | 2 | 2 | 3 |
| HUM | | Humanities Elective | 3 | 0 | 3 |
| | | Technical Elective* | 3 | 2 | 3 |
| | | | **13** | **12** | **17** |

| | | | | | |
|---|---|---|---|---|---|
| **Third Semester (Summer)** | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| ELN | 237 | Local Area Networks (1st minimester) | 2 | 3 | 3 |
| ELN | 238 | Advanced LANs (2nd minimester) | 2 | 3 | 3 |
| PHY | 131 | Physics-Mechanics (or PHY 151)** | 3 | 2 | 4 |
| | | | **9** | **14** | **14** |
| **Fourth Semester (Fall)** | | | | | |
| CSC | 143 | Object-Oriented Programming (or CET 161) | 2 | 3 | 3 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ELN | 133 | Digital Electronics | 3 | 3 | 4 |
| ELN | 137 | Electrical Devices & Circuits | 4 | 3 | 5 |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | | **14** | **12** | **18** |
| **Fifth Semester (Spring)** | | | | | |
| CET | 212 | Integrated Manufacturing Systems | 1 | 3 | 2 |
| ELN | 232 | Introduction to Microprocessors | 3 | 3 | 4 |
| ENG | 114 | Professional Research and Reporting | 3 | 0 | 3 |
| ELN | 154 | Introduction to Data Communications (or ELN 234) | 2 | 3 | 3 |
| | | | **9** | **9** | **12** |
| **Program Totals** | | | **55** | **57** | **75*** |

*Technical Elective: a minimum of three credit hours to be selected from: CET 125, CHM 135, ELC 133, ELC 213, ELC 228, ELN 133A, ELN 150, EGR 285, MAT 151/MAT 151A, MAT 271, COE 112/COE 115.

** Recommended courses for students seeking transfer for bachelor's degree in engineering technology.

## Computer Engineering Technology Associate in Applied Science Degree - Evening Schedule (A40160)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| CET | 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| EGR | 110 | Introduction to Engineering | 1 | 2 | 2 |
| ELC | 138 | DC Circuit Analysis | 2 | 3 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A)** | 2 | 2 | 3 |
| | | | **7** | **10** | **11** |
| **Second Semester (Spring)** | | | | | |
| CET | 211 | Computer Upgrade/Repair II | 2 | 3 | 3 |
| ELC | 139 | AC Circuit Analysis | 2 | 3 | 3 |
| MAT | 122 | Algebra/Trigonometry II (or MAT 172/172A)** | 2 | 2 | 3 |
| | | | **6** | **8** | **9** |
| **Third Semester (Summer)** | | | | | |
| EGR | 125 | Application Software for Technology | 1 | 2 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| PHY | 131 | Physics-Mechanics (or PHY 151)** | 3 | 2 | 4 |
| | | | **7** | **4** | **9** |
| **Fourth Semester (Fall)** | | | | | |
| ELN | 137 | Electrical Devices & Circuits | 4 | 3 | 5 |
| ELN | 237 | Local Area Networks | 2 | 3 | 3 |
| | | | **6** | **6** | **8** |
| **Fifth Semester (Spring)** | | | | | |
| ELN | 133 | Digital Electronics | 3 | 3 | 4 |
| ELN | 238 | Advanced LANs | 2 | 3 | 3 |
| | | | **5** | **6** | **7** |
| **Sixth Semester (Summer)** | | | | | |
| CSC | 143 | Object Oriented Programming (or CET 161) | 2 | 3 | 3 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | | **8** | **3** | **9** |
| **Seventh Semester (Fall)** | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| ELN | 154 | Introduction to Data Communications | 2 | 3 | 3 |
| | | | **4** | **9** | **7** |
| **Eighth Semester (Spring)** | | | | | |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ELN | 232 | Introduction to Microprocessors | 3 | 3 | 4 |
| | | | **5** | **6** | **7** |
| **Ninth Semester (Summer)** | | | | | |
| CET | 212 | Integrated Manufacturing Systems | 1 | 3 | 2 |
| ENG | 114 | Prof. Research and Report Writing | 3 | 0 | 3 |
| | | Technical Elective* | 3 | 2 | 3 |
| | | | **7** | **5** | **8** |
| **Program Totals** | | | **55** | **57** | **75*** |

*Includes a minimum of three credit hours to be selected from: CET 125, CHM 135, ELC 133, ELC 213, ELC 228, ELN 133A, ELN 150, EGR 285, MAT 151/MAT 151A, MAT 271, COE 112/COE 115.

** Recommended courses for students seeking transfer for bachelor's degree in engineering technology.

## Computer Engineering Technology Personal Computer and Network Maintenance Certificate (C40160L1)

This Training program provides the individual the theory and hands-on experience to become a PC specialist capable of performing maintenance and upgrades on all types of personal computer systems.

This program combines the theory of computer and network operation with the practical skills necessary for efficient diagnosis and repair work in the field. The program provides the foundation for further study of networks and new computer-based products.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| CET 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| CET 125 | Voice and Data Cabling | 2 | 3 | 3 |
| CET 211 | Computer Upgrade/Repair II | 2 | 3 | 3 |
| ELN 237 | Local Area Networks | 2 | 3 | 3 |
| ELN 238 | Advanced LAN | 2 | 3 | 3 |
| **Certificate Totals** | | **10** | **15** | **15** |

## Construction Management Technology

This curriculum is designed to prepare individuals for careers in the construction management field. Such positions may include project manager, superintendent, estimator, or foreman.

Course work includes safety, planning, scheduling, cost control, productivity, human relations, estimating, and building codes. Students will also gain proficiency in specific construction-related skills.

Graduates should qualify for entry-level positions in the field of construction management.

### Construction Management Technology Associate in Applied Science - Evening Schedule (A35190)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 32-33 |
| Other Courses | 24-26 |
| Program Total | 72-74 |

Courses requiring a grade of "C" or better: ARC, BPR, CIS, CIV, CMT, COE, and SPA

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Weekly Clinic Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| ACA 115 | First-Year Seminar (or EGR 110) | 0 | 2 | 0 | 1 |
| | Humanities/Fine Arts Elective | 3 | 0 | 0 | 3 |
| | Technical Elective(s) | 2 | 3 | 0 | 3 |
| | | **5** | **5** | **0** | **7** |
| **Second Semester (Spring)** | | | | | |
| | Social Science Elective | 3 | 0 | 0 | 3 |
| | Technical Elective(s) | 2 | 3 | 0 | 3 |
| | | **5** | **3** | **0** | **6** |
| **Third Semester (Summer)** | | | | | |
| | Technical Elective(s) | 1 | 9 | 0 | 4 |
| | | **1** | **9** | **0** | **4** |
| **Fourth Semester (Fall)** | | | | | |
| ENG 111 | Expository Writing (or ENG 110) | 3 | 0 | 0 | 3 |
| | Technical Elective(s) | 2 | 2 | 0 | 3 |
| | | **5** | **2** | **0** | **6** |
| **Fifth Semester (Spring)** | | | | | |
| BPR 130 | Blueprint Reading/ Construction | 1 | 2 | 0 | 2 |
| ENG 114 | Professional Research and Reporting (or COM 120, or COM 231) | 3 | 0 | 0 | 3 |
| | Technical Elective(s) | 2 | 6 | 0 | 4 |
| | | **6** | **8** | **0** | **9** |
| **Sixth Semester (Summer)** | | | | | |
| | Estimation/Code Elective (May be taken in a previous semester) | 1-3 | 0-2 | 0 | 2-3 |
| | | **1-3** | **0-2** | **0** | **2-3** |
| **Seventh Semester (Fall)** | | | | | |
| ARC 112 | Construction Materials and Methods | 3 | 2 | 0 | 4 |
| CIS 110 | Introduction to Computers (or CIS 111, or EGR 125) | 1-2 | 2 | 0 | 2-3 |
| CMT 210 | Professional Construction Supervision | 3 | 0 | 0 | 3 |
| CMT 212 | Total Safety Performance | 3 | 0 | 0 | 3 |
| | | **10-11** | **4** | **0** | **12-13** |
| **Eighth Semester (Spring)** | | | | | |
| CIV 230 | Construction Estimating | 2 | 3 | 0 | 3 |
| SPA 120 | Spanish for the Workplace* | 3 | 0 | 0 | 3 |
| | | **5** | **3** | **0** | **6** |
| **Ninth Semester (Summer)** | | | | | |
| COE 111 | Co-op Work Experience | 0 | 0 | 10 | 1 |
| | | **0** | **0** | **10** | **1** |
| **Tenth Semester (Fall)** | | | | | |
| ACC 120 | Principles of Accounting I | 3 | 2 | 0 | 4 |
| CMT 214 | Planning and Scheduling | 3 | 0 | 0 | 3 |
| | Estimation/Code Elective (May be taken in a previous semester) | 3 | 0 | 0 | 3 |
| | | **9** | **2** | **0** | **10** |

**Eleventh Semester (Spring)**

| | | | | | |
|---|---|---|---|---|---|
| CMT 216 | Costs and Productivity | 3 | 0 | 0 | 3 |
| CMT 218 | Human Relations Issues | 3 | 0 | 0 | 3 |
| MAT 115 | Mathematical Models** | 2 | 2 | 0 | 3 |
| | (or MAT 121, or PHY 121) | | | | |
| | | **8** | **2** | **0** | **9** |
| **Program Totals** | | **55-58** | **38-40** | **10** | **72-74** |

* Students who meet the requirements may substitute SPA 111 for SPA 120 with department chair approval.
** Students who meet the requirements may substitute MAT 171/171A or MAT 151/151A for the math requirement.

**Estimation/Code Electives:**

**Select one course from:**

| | | | | |
|---|---|---|---|---|
| AHR 210 | Residential Building Code | 1 | 2 | 2 |
| CAR 114 | Residential Building Codes | 3 | 0 | 3 |
| ARC 131 | Building Codes | 2 | 2 | 3 |
| ELC 118 | National Electrical Code | 1 | 2 | 2 |

**AND one course from:**

| | | | | |
|---|---|---|---|---|
| CAR 115 | Residential Planning/Estimating | 3 | 0 | 3 |

**Technical Electives:**

At least 17 Semester Hours Credit selected from one of the following areas of specialization (Unless approved by the department chairperson, students can select courses from only one specialty area):

- AHR 110, AHR 112, AHR 113, AHR 114, AHR 115, AHR 120, AHR 125, AHR 130

- CAR 111, CAR 112, CAR 113

- EGR 115, CIV 110, CIV 125, CIV 211, SRV 110

- ELC 112 or ELC 113, ELC 115, ELC 117, ELC 128, ELC 132, ELC 213, ELC 111

- WLD 111, WLD 112, WLD 115, WLD 116, WLD 141

Except for Electrical/Electronics, Technical and Estimation/Code Electives may be completed in either the day or evening. Currently, courses with the CMT prefix are scheduled as evening classes.

Additional electives may be accepted from Industrial Construction Technology, Industrial Systems Technology, Masonry, and Plumbing programs taken at other institutions in the North Carolina Community College System.

## Construction Management Technology Certificate - Evening Schedule (C35190L1)

The Construction Management Technology certificate is designed for the skilled tradesman who is experienced in the construction industry and has the desire to advance to construction management. Recent high school graduates will also be accepted.

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| BPR 130 | Blueprint Reading/Construction | 1 | 2 | 2 |
| CMT 210 | Professional Construction Supervision | 3 | 0 | 3 |
| CMT 212 | Total Safety Performance | 3 | 0 | 3 |
| CMT 214 | Planning and Scheduling | 3 | 0 | 3 |
| CMT 216 | Costs and Productivity | 3 | 0 | 3 |
| CMT 218 | Human Relations Issues | 3 | 0 | 3 |
| **Certificate Totals** | | **16** | **2** | **17** |

## 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, includes such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electric 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.

## Electrical/Electronics Technology Associate in Applied Science Degree (A35220)

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *6* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 21 |
| Other Courses | 33 |
| Program Total | 72 |

Courses requiring a grade of "C" or better: COE, EGR, ELC, and ELN

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| EGR 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ELC 112AB | DC/AC Electricity | 2 | 3 | 3 |
| | (or ELC 138 DC) | | | |
| ELC 113 | Basic Wiring I | 2 | 6 | 4 |
| ENG 111 | Expository Writing (or ENG 110) | 3 | 0 | 3 |
| MAT 121 | Algebra/Trigonometry | 2 | 2 | 3 |
| | | **10** | **13** | **15** |

| | | | | |
|---|---|---|---|---|
| **Second Semester (Spring)** | | | | |
| EGR 125 | Application Software for Tech | 1 | 2 | 2 |
| ELC 112BB | DC/AC Electricity (or ELC 139 AC) | 1 | 3 | 2 |
| ELC 115 | Industrial Wiring | 2 | 6 | 4 |
| ELN 152 | Fabrication Techniques | 1 | 3 | 2 |
| MAT 122 | Algebra/Trigonometry II (or Nat Science/Mathematics Elective) | 2 | 2 | 3 |
| | | **7** | **16** | **13** |
| **Third Semester (Summer)** | | | | |
| ELC 117 | Motors and Controls | 2 | 6 | 4 |
| PHY 131 | Physics-Mechanics | 3 | 2 | 4 |
| | Humanities Elective | 3 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **11** | **8** | **14** |
| **Fourth Semester (Fall)** | | | | |
| ELC 128 | Introduction to PLC | 2 | 3 | 3 |
| ELN 133 | Digital Electronics | 3 | 3 | 4 |
| ELN 137 | Electronic Devices & Circuits | 4 | 3 | 5 |
| ENG 114 | Prof Research and Report Writing (or COM 120, or COM 231) | 3 | 0 | 3 |
| | | **12** | **9** | **15** |
| **Fifth Semester (Spring)** | | | | |
| ELC 118 | National Electrical Code | 1 | 2 | 2 |
| ELC 213 | Instrumentation | 3 | 2 | 4 |
| ELC 228 | PLC Applications | 2 | 6 | 4 |
| ELC 229 | Application Project (or COE 112) | 1 | 3 | 2 |
| HYD 110 | Hydraulics/Pneumatics (or ELC 233) | 2 | 3 | 3 |
| | | **9** | **16** | **15** |
| **Program Totals** | | **49** | **62** | **72** |

## Electrical/Electronics Technology Associate in Applied Science Degree - Evening Schedule (A35220)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| EGR 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ELC 112AB | DC/AC Electricity (or ELC 138 DC) | 2 | 3 | 3 |
| MAT 121 | Algebra/Trigonometry I | 2 | 2 | 3 |
| | | **5** | **7** | **8** |
| **Second Semester (Spring)** | | | | |
| ELC 112BB | DC/AC Electricity (or ELC 139 AC) | 1 | 3 | 2 |
| ELN 152 | Fabrication Techniques | 1 | 3 | 2 |
| MAT 122 | Algebra/Trigonometry II (or Nat Science/Mathematics Elective) | 2 | 2 | 3 |
| | | **4** | **8** | **7** |
| **Third Semester (Summer)** | | | | |
| EGR 125 | Application Software for Tech | 1 | 2 | 2 |
| ENG 111 | Expository Writing (or ENG 110) | 3 | 0 | 3 |
| PHY 131 | Physics-Mechanics | 3 | 2 | 4 |
| | | **7** | **4** | **9** |
| **Fourth Semester (Fall)** | | | | |
| ELC 113 | Basic Wiring I | 2 | 6 | 4 |
| ELN 137 | Electronic Devices & Circuits | 4 | 3 | 5 |
| | | **6** | **9** | **9** |
| **Fifth Semester (Spring)** | | | | |
| ELC 115 | Industrial Wiring | 2 | 6 | 4 |
| ELN 133 | Digital Electronics | 3 | 3 | 4 |
| | | **5** | **9** | **8** |
| **Sixth Semester (Summer)** | | | | |
| ELC 118 | National Electrical Code | 1 | 2 | 2 |
| ELC 213 | Instrumentation | 3 | 2 | 4 |
| | Social Science Elective | 3 | 0 | 3 |
| | | **7** | **4** | **9** |
| **Seventh Semester (Fall)** | | | | |
| ELC 117 | Motors and Controls | 2 | 6 | 4 |
| ELC 128 | Introduction to PLC | 2 | 3 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **7** | **9** | **10** |
| **Eight Semester (Spring)** | | | | |
| ELC 228 | PLC Applications | 2 | 6 | 4 |
| HYD 110 | Hydraulics/Pneumatics (or ELC 233) | 2 | 3 | 3 |
| | | **4** | **9** | **7** |
| **Ninth Semester (Summer)** | | | | |
| ELC 229 | Application Project (or COE 112) | 1 | 3 | 2 |
| ENG 114 | Prof. Research and Report Writing (or COM 120, or COM 231) | 3 | 0 | 3 |
| | | **4** | **3** | **5** |
| **Program Totals** | | **49** | **62** | **72** |

## Electrical/Electronics Technology Diploma - Evening Schedule (D35220)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| Core Courses | 13 |
| Other Courses | 17 |
| Program Total | 36 |

Courses requiring a grade of "C" or better: EGR, ELC and ELN

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| ELC | 112AB | DC/AC Electricity (or ELC 138 DC) | 2 | 3 | 3 |
| MAT | 101 | Applied Mathematics I (or MAT 121*) | 2 | 2 | 3 |
| | | | **4** | **5** | **6** |
| **Second Semester (Spring)** | | | | | |
| ELC | 112BB | DC/AC Electricity (or ELC 139 AC) | 1 | 3 | 2 |
| ELN | 152 | Fabrication Techniques | 1 | 3 | 2 |
| COM | 120 | Intro to Interpersonal Communications (or ENG 110 or ENG 111) | 3 | 0 | 3 |
| | | | **5** | **6** | **7** |
| **Third Semester (Summer)** | | | | | |
| EGR | 125 | Application Software for Tech | 1 | 2 | 2 |
| | | | **1** | **2** | **2** |
| **Fourth Semester (Fall)** | | | | | |
| ELC | 113 | Basic Wiring I | 2 | 6 | 4 |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| | | | **4** | **12** | **8** |
| **Fifth Semester (Spring)** | | | | | |
| ELC | 115 | Industrial Wiring | 2 | 6 | 4 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| | | | **4** | **9** | **7** |
| **Sixth Semester (Summer)** | | | | | |
| ELC | 118 | National Electrical Code | 1 | 2 | 2 |
| ELC | 213 | Instrumentation | 3 | 2 | 4 |
| | | | **4** | **4** | **6** |
| **Program Totals** | | | **22** | **38** | **36** |

** Students wishing to continue into the A.A.S. degree program should take these courses.*

## Electrical/Electronics Technology Electrical Wiring Certificate (C35220L1)

The Electrical Wiring Certificate program teaches the student the concepts and skills needed to install and repair residential, commercial, and industrial wiring systems. Preparation for State and local licenses are achieved through laboratory and classroom studies that focus on the National Electrical Code.

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| ELC | 112 | DC/AC Electricity | 3 | 6 | 5 |
| ELC | 113 | Basic Wiring I | 2 | 6 | 4 |
| ELC | 115 | Industrial Wiring | 2 | 6 | 4 |
| **Certificate Totals** | | | **7** | **18** | **13** |

## Electrical/Electronics Technology Instrumentation and Control Certificate (C35220L2)

The Instrumentation and Control Certificate program teaches the student the concepts and skills needed to program, install, calibrate and service systems that acquire and record industrial and environmental data.

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ELC | 112 | DC/AC Electricity | 3 | 6 | 5 |
| ELC | 213 | Instrumentation | 3 | 2 | 4 |
| **Certificate Totals** | | | **8** | **11** | **12** |

## Electrical/Electronics Technology Building Automation & Controls (C35220L3)

This advanced certificate is intended to help prepare students to install and maintain automated energy and environmental control systems.

| | | | | | |
|---|---|---|---|---|---|
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| ELC | 128 | Intro to PLCs | 2 | 3 | 3 |
| ELC | 213 | Instrumentation | 3 | 2 | 4 |
| ELC | 233 | Energy Management | 2 | 2 | 3 |
| **Certificate Totals** | | | **9** | **13** | **14** |

# 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 Associate in Applied Science Degree (A40200)

| Program Summary | Hours |
|---|---|
| General Education | 18 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *6* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 18 |
| Other Courses | 35 |
| Program Total | 71 |

Courses requiring a grade of "C" or better: COE, ELC, and ELN

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| CET | 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| ELC | 138 | DC Circuit Analysis | 2 | 3 | 3 |
| EGR | 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT171/171A**) | 2 | 2 | 3 |
| | | | **10** | **10** | **14** |
| **Second Semester (Spring)** | | | | | |
| DFT | 151 | CAD I (or ELN 150) | 2 | 3 | 3 |
| EGR | 125 | Application Software for Technicians | 1 | 2 | 2 |
| ELC | 139 | AC Circuit Analysis | 2 | 3 | 3 |
| ELN | 152 | Fabrication Techniques | 1 | 3 | 2 |
| MAT | 122 | Algebra/Trigonometry II (or MAT172/172A**) | 2 | 2 | 3 |
| | | | **8** | **13** | **13** |
| **Third Semester (Summer)** | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| PHY | 131 | Physics-Mechanics (or PHY 151**) | 3 | 2 | 4 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | | **11** | **8** | **14** |
| **Fourth Semester (Fall)** | | | | | |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ELN | 137 | Electronic Devices & Circuits | 4 | 3 | 5 |
| ELN | 133 | Digital Electronics | 3 | 3 | 4 |
| ENG | 114 | Prof. Research and Report Writing | 3 | 0 | 3 |
| | | | **12** | **9** | **15** |
| **Fifth Semester (Spring)** | | | | | |
| ELN | 232 | Introduction to Microprocessors | 3 | 3 | 4 |
| ELN | 234 | Communications Systems | 3 | 3 | 4 |
| ELN | 133A | Digital Electronics Lab | 0 | 3 | 1 |
| | | | **6** | **9** | **9** |
| **Program Totals** | | | **47** | **49** | **71*** |

*A minimum of six hours of major hours to be selected from: CET 125, CET 211, CET 212, CHM 135, EGR 285, ELC 133, ELC 213, ELC 228, ELC 229, ELN 237, MAT 151/MAT 151A, MAT 271, PHY 152, COE 112/COE 115.

** *Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

## Electronics Engineering Technology Associate in Applied Science Degree - Evening Schedule (A40200)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| EGR | 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ELC | 138 | DC Circuit Analysis | 2 | 3 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A**) | 2 | 2 | 3 |
| | | | **5** | **7** | **8** |
| **Second Semester (Spring)** | | | | | |
| ELC | 139 | AC Circuit Analysis | 2 | 3 | 3 |
| ELN | 152 | Fabrication Techniques | 1 | 3 | 2 |
| MAT | 122 | Algebra/Trigonometry II (or MAT 172/172A**) | 2 | 2 | 3 |
| | | | **5** | **8** | **8** |
| **Third Semester (Summer)** | | | | | |
| CET | 111 | Computer Upgrade/Repair I | 2 | 3 | 3 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| | | | **5** | **3** | **6** |
| **Fourth Semester (Fall)** | | | | | |
| ELN | 137 | Electronic Devices & Circuits | 4 | 3 | 5 |
| PHY | 131 | Physics - Mechanics (or PHY 151**) | 3 | 2 | 4 |
| | | | **7** | **5** | **9** |

| | | | | | |
|---|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | | |
| DFT | 151 | CAD I (or ELN 150) | 2 | 3 | 3 |
| EGR | 125 | Application Software for Technicians | 1 | 2 | 2 |
| ELN | 133 | Digital Electronics | 3 | 3 | 4 |
| | | | **6** | **8** | **9** |
| **Sixth Semester (Summer)** | | | | | |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| ELN | 133A | Digital Electronics Lab | 0 | 3 | 1 |
| | | | **3** | **3** | **4** |
| **Seventh Semester (Fall)** | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| ELN | 234 | Communication Systems | 3 | 3 | 4 |
| | | | **5** | **9** | **8** |
| **Eighth Semester (Spring)** | | | | | |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ELN | 232 | Introduction to Microprocessors | 3 | 3 | 4 |
| | | | **5** | **6** | **7** |
| **Ninth Semester (Summer)** | | | | | |
| ENG | 114 | Prof Research and Report Writing | 3 | 0 | 3 |
| | | Humanities Elective | 3 | 0 | 3 |
| | | | **6** | **0** | **6** |
| **Program Totals** | | | **47** | **49** | **71*** |

*A minimum of six hours of major hours to be selected from: CET 125, CET 211, CET 212, CHM 135, EGR 285, ELC 213, ELC 133, ELC 228, ELC 229, ELN 237, MAT 151/MAT 151A, MAT 271, PHY 152, COE 112/COE 115.

*** Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

## Heavy Equipment and Transport Technology (Diesel)

The Heavy Equipment and Transport Technology curriculum is designed to prepare individuals with the knowledge and skills needed to service, troubleshoot, and repair medium and heavy duty vehicles.

The course work includes the purpose, construction features, and principles of operation of medium and heavy duty vehicles.

Graduates of the curriculum should qualify for entry level employment opportunities in a dealership, fleet shop, or independent garage as a technician. Graduates that have met the work experience requirement should also be prepared to take the ASE certification exam.

## Heavy Equipment and Transport Technology Diploma (D60240)

| Program Summary | Hours |
|---|---|
| General Education | 7 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| Core Courses | 13 |
| Other Courses | 26 |
| Program Total | 46 |

Courses requiring a grade of "C" or better: HET

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 1 |
| HET | 110 | Engines | 3 | 9 | 6 |
| HET | 118 | Mechanical Orientation | 2 | 0 | 2 |
| HET | 125 | Preventative Maintenance | 1 | 3 | 2 |
| HYD | 112 | Hydraulics Medium/Heavy Duty | 1 | 2 | 2 |
| PHY | 121 | Applied Physics I (or MAT 121) | 3 | 2 | 4 |
| | | | **10** | **18** | **17** |
| **Second Semester (Spring)** | | | | | |
| ENG | 102 | Applied Communications II* (or ENG 110, or ENG 111) | 3 | 0 | 3 |
| CIS | 110 | Introduction to Computers | 2 | 2 | 3 |
| HET | 112 | Diesel Electrical System | 3 | 6 | 5 |
| HET | 115 | Electronic Engines | 2 | 3 | 3 |
| HET | 119 | Mechanical Transmissions | 2 | 2 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| | | | **13** | **16** | **19** |
| **Third Semester (Summer)** | | | | | |
| HET | 116 | A/C/Diesel Equipment | 1 | 2 | 2 |
| HET | 231 | Medium-Heavy Duty Brake Systems | 1 | 3 | 2 |
| HET | 233 | Suspension and Steering | 2 | 4 | 4 |
| MAC | 118 | Machine Shop Basics | 1 | 3 | 2 |
| | | | **5** | **12** | **10** |
| **Program Totals** | | | **28** | **46** | **46** |

The Associate in Applied Science Degree program may be taken in the evening upon completion of the day Diploma program.

* Students intending to complete an associate's degree should take either ENG 110 or ENG 111.

## Heavy Equipment and Transport Technology Associate in Applied Science - Evening Schedule (A60240)

(Evening Only Program)

To be taken ***after*** completion of Diploma (day) program

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 13 |
| Other Courses | 37 |
| Program Total | 66 |

Courses requiring a grade of "C" or better: COE and HET

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **Daytime HEATT Diploma** | | | | | | **46** |
| **Fourth Semester (Fall)** | | | | | | |
| COE | 112 | Co-op Work Experience I | 0 | 0 | 20 | 2 |
| HET | 114A | Powertrains | 2 | 3 | 0 | 3 |
| | | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | | **5** | **3** | **20** | **8** |
| **Fifth Semester (Spring)** | | | | | | |
| COE | 122 | Co-op Work Experience II | 0 | 0 | 20 | 2 |
| | | Communications Elective* | 3 | 0 | 0 | 3 |
| HET | 114B | Powertrains | 1 | 3 | 0 | 2 |
| HET | 128 | Medium/Heavy Duty Tune-Up | 1 | 2 | 0 | 2 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 0 | 3 |
| | | | **8** | **5** | **20** | **12** |
| **Program Totals** | | | **41** | **54** | **40** | **66** |

***Select one course from:**

| | | |
|---|---|---|
| ENG | 114 | Professional Research and Reporting |
| COM | 120 | Intro to Interpersonal Communication |
| COM | 231 | Public Speaking |

## Heavy Equipment and Transport Technology Certificate (C60240L1)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| HET | 110 | Engines | 3 | 9 | 6 |
| HET | 118 | Mechanical Orientation | 2 | 0 | 2 |
| HET | 125 | Preventative Maintenance | 1 | 3 | 2 |
| HET | 112 | Diesel Electrical Systems | 3 | 6 | 5 |
| HET | 231 | Med/Heavy Brake Systems (or HET 119) | 1 | 3 | 2 |
| **Certificate Totals** | | | **10** | **21** | **17** |

# 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 Associate in Applied Science Degree (A50240)

| Program Summary | Hours |
|---|---|
| General Education | 16 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 18 |
| Other Courses | 36 |
| Program Total | 70 |

Courses requiring a grade of "C" or better: AHR, ATR, BPR, COE, DFT, EGR, ELC, HYD, ISC, MAC, MEC, MNT and WLD

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| AHR | 112 | Heating Technology | 2 | 4 | 4 |
| AHR | 170 | Heating Lab | 0 | 3 | 1 |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| EGR | 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ELC | 111 | Introduction to Electricity | 2 | 2 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 2 |
| | | | **7** | **16** | **14** |
| **Second Semester (Spring)** | | | | | |
| BPR | 121 | Blueprint Reading: Mechanical | 1 | 2 | 2 |
| EGR | 125 | App. Software for Technicians (or CIS 110) | 1 | 2 | 2 |
| ENG | 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MEC | 111 | Machining Processing I (or MAC 111) | 1 | 4 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| | | | **7** | **11** | **12** |

| | | | | |
|---|---|---|---|---|
| **Third Semester (Summer)** | | | | |
| ELC 117 | Motors and Controls | 2 | 6 | 4 |
| MEC 161 | Manufacturing Processes 1 | 3 | 0 | 3 |
| MNT 111 | Maintenance Practices | 2 | 2 | 3 |
| | | **7** | **8** | **10** |
| **Fourth Semester (Fall)** | | | | |
| DFT 119 | Basic CAD (or DFT 151) | 1 | 2 | 2 |
| ELC 128 | Introduction to PLC | 2 | 3 | 3 |
| ISC 121 | Environmental Health and Safety | 3 | 0 | 3 |
| | Major Elective* | 0 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| PHY 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A or MAT 121) | 3 | 2 | 4 |
| | | **12** | **7** | **18** |
| **Fifth Semester (Spring)** | | | | |
| ATR 282 | Robotics and CIM (or ATR 112) | 3 | 2 | 4 |
| COM 231 | Public Speaking (or COM 120, or ENG 114) | 3 | 0 | 3 |
| HYD 110 | Hydraulics and Pneumatics | 2 | 3 | 3 |
| | Major Elective* | 0 | 0 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | **11** | **5** | **16** |
| **Program Totals** | | **44** | **47** | **70** |

***Major Electives:**

**Select 6 credit hours from:**

| | | | | |
|---|---|---|---|---|
| AHR 110 | Introduction to Refrigeration | 2 | 6 | 5 |
| COE 113 | Co-Op Work Experience I | 0 | 30 | 3 |
| ELC 113 | Basic Wiring I | 2 | 6 | 4 |
| HET 118 | Mechanical Orientation | 2 | 0 | 2 |
| HET 125 | Preventative Maintenance | 1 | 3 | 2 |
| MAC 114 | Introduction to Metrology | 2 | 0 | 2 |
| MEC 180 | Engineering Materials | 2 | 3 | 3 |
| WLD 212 | Inert Gas Welding | 1 | 3 | 2 |

## Industrial Systems Technology Associate in Applied Science Degree - Evening Schedule (A50240)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| EGR 110 | Introduction to Engineering Tech. | 1 | 2 | 2 |
| ELC 111 | Introduction to Electricity | 2 | 2 | 3 |
| MNT 110 | Intro to Maintenance Procedures | 1 | 3 | 2 |
| | | **4** | **7** | **7** |
| **Second Semester (Spring)** | | | | |
| ATR 282 | Robotics and CIM (or ATR 112) | 3 | 2 | 4 |
| BPR 111 | Blueprint Reading | 1 | 2 | 2 |
| WLD 112 | Basic Welding Processes | 1 | 3 | 2 |
| | | **5** | **7** | **8** |
| **Third Semester (Summer)** | | | | |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MEC 161 | Manufacturing Processes 1 | 3 | 0 | 3 |
| MNT 111 | Maintenance Practices | 2 | 2 | 3 |
| | | **8** | **2** | **9** |
| **Fourth Semester (Fall)** | | | | |
| ELC 117 | Motors and Controls | 2 | 6 | 4 |
| ELC 128 | Introduction to PLC | 2 | 3 | 3 |
| | | **4** | **9** | **7** |
| **Fifth Semester (Spring)** | | | | |
| BPR 121 | Blueprint Reading: Mechanical | 1 | 2 | 2 |
| EGR 125 | Application Software for Technicians (or CIS 110) | 1 | 2 | 2 |
| COM 231 | Public Speaking (or COM 120, or ENG 114) | 3 | 0 | 3 |
| | | **5** | **4** | **7** |
| **Sixth Semester (Summer)** | | | | |
| DFT 119 | Basic CAD (or DFT 151) | 1 | 2 | 2 |
| PHY 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A or MAT 121) | 3 | 2 | 4 |
| | | **4** | **4** | **6** |
| **Seventh Semester (Fall)** | | | | |
| AHR 112 | Heating Technology | 2 | 4 | 4 |
| ISC 121 | Environmental Health & Safety | 3 | 0 | 3 |
| | Major Elective* | 0 | 0 | 3 |
| | | **5** | **4** | **10** |
| **Eighth Semester(Spring)** | | | | |
| AHR 170 | Heating Lab | 0 | 3 | 1 |
| MEC 111 | Machining Processing I (or MAC 111) | 1 | 4 | 3 |
| | Major Elective* | 0 | 0 | 3 |
| | | **1** | **7** | **7** |
| **Ninth Semester(Summer)** | | | | |
| HYD 110 | Hydraulics and Pneumatics | 2 | 3 | 3 |
| | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | **8** | **3** | **9** |
| **Program Totals** | | **44** | **47** | **70** |

***Major Electives:**

**Select two courses from:**

| | | | | |
|---|---|---|---|---|
| AHR 110 | Introduction to Refrigeration | 2 | 6 | 5 |
| COE 113 | Co-Op Work Experience I | 0 | 30 | 3 |

| | | | | |
|---|---|---|---|---|
| ELC | 113 | Basic Wiring I | 2 | 6 | 4 |
| HET | 118 | Mechanical Orientation | 2 | 0 | 2 |
| HET | 125 | Preventative Maintenance | 1 | 3 | 2 |
| MAC | 114 | Introduction to Metrology | 2 | 0 | 2 |
| MEC | 180 | Engineering Materials | 2 | 3 | 3 |
| WLD | 212 | Inert Gas Welding | 1 | 3 | 2 |

## Industrial Systems Technology Diploma (D50240)

This diploma is designed for students in maintenance mechanic apprenticeships.

| Program Summary | Hours |
|---|---|
| General Education | 7 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| Core Courses | 18 |
| Other Courses | 18 |
| Program Total | 43 |

Courses requiring a grade of "C" or better: ATR, BPR, EGR, ELC, HYD, ISC, MAC, MEC, MNT and WLD

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First semester (Fall)** | | | | | |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| EGR | 125 | App. Software for Technicians (or CIS 110) | 1 | 2 | 2 |
| ELC | 111 | Introduction to Electricity | 2 | 2 | 3 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| ISC | 121 | Environmental Health & Safety | 3 | 0 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 2 |
| **Second Semester (Spring)** | | | | | |
| ATR | 282 | Robotics and CIM (or ATR 112) | 3 | 2 | 4 |
| BPR | 121 | Blueprint Reading: Mechanical | 1 | 2 | 2 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| HYD | 110 | Hydraulics and Pneumatics | 2 | 3 | 3 |
| MEC | 111 | Machining Processing I (or MAC 111) | 1 | 4 | 3 |
| | | | **8** | **14** | **14** |
| **Third semester (Summer)** | | | | | |
| ELC | 117 | Motors and Controls | 2 | 6 | 4 |
| ENG | 110 | Freshman Composition (or ENG 111 or COM 120) | 3 | 0 | 3 |
| MEC | 161 | Manufacturing Processes 1 | 3 | 0 | 3 |
| PHY | 121 | Applied Physics I (or PHY 110/110A, or CHM 121/121A or MAT 121) | 3 | 2 | 4 |
| | | | **11** | **8** | **14** |
| **Program Totals** | | | **29** | **34** | **43** |

## Industrial Systems Technology Basic Maintenance Certificate (C50240L1)

The Industrial Systems Basic Maintenance program teaches the student the concepts and skills needed to service and repair various types of mechanical equipment.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| HYD | 110 | Hydraulics and Pneumatics | 2 | 3 | 3 |
| ISC | 121 | Environmental Health & Safety | 3 | 0 | 3 |
| ELC | 111 | Intro to Electricity | 2 | 2 | 3 |
| MNT | 110 | Intro to Maintenance Procedures | 1 | 3 | 2 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| **Certificate Totals** | | | **10** | **13** | **15** |

## Industrial Systems Technology Metal Fabrication Certificate (C50240L2)

The Industrial Systems Metal Fabrication program teaches the student the concepts and skills needed to fabricate simple fixtures and equipment.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| ISC | 121 | Environmental Health & Safety | 3 | 0 | 3 |
| MEC | 111 | Machine Processes I (or MAC 111) | 1 | 4 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| WLD | 212 | Inert Gas Welding | 1 | 3 | 2 |
| **Certificate Totals** | | | **7** | **12** | **12** |

# Machining Technology

The Machining Technology curriculum is designed to develop skills in the theory and safe use of hand tools, power machinery, computerized equipment and 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 machining technicians exist in manufacturing industries, public institutions, governmental agencies and in a wide range of specialty machining job shops.

## Machining Technology
## Associate in Applied Science Degree (A50300)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 26 |
| Other Courses | 31-35 |
| Program Total | 72-76 |

Courses requiring a grade of "C" or better: BPR, MAC, MEC, and WLD

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| BPR 111 | Blueprint Reading I | 1 | 2 | 2 |
| MAC 111 | Machining Technology I | 2 | 12 | 6 |
| MAC 121 | Introduction to CNC | 2 | 0 | 2 |
| MAC 151 | Machining Calculations | 1 | 2 | 2 |
| SOC 215 | Group Processes | 3 | 0 | 3 |
| | | **9** | **18** | **16** |
| **Second Semester (Spring)** | | | | |
| BPR 121 | Blueprint Reading II | 1 | 2 | 2 |
| COM 231 | Public Speaking (or COM 120) | 3 | 0 | 3 |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MAC 112 | Machining Technology II | 2 | 12 | 6 |
| MAC 122 | CNC Turning | 1 | 3 | 2 |
| MAC 124 | CNC Milling | 1 | 3 | 2 |
| | | **11** | **20** | **18** |
| **Third Semester (Summer)** | | | | |
| MAC 113 | Machining Technology III | 2 | 12 | 6 |
| MAC 152 | Advanced Machining Calculations | 1 | 2 | 2 |
| | | **3** | **14** | **8** |
| **Fourth Semester (Fall)** | | | | |
| MAC 226 | CNC EDM Machining | 1 | 3 | 2 |
| MEC 231 | CAM I | 1 | 4 | 3 |
| MAT 121 | Algebra/Trigonometry (or PHY 121) | 2 | 2 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **7** | **9** | **11** |
| **Fifth Semester (Spring)** | | | | |
| MAC 224 | Advanced CNC Milling | 1 | 3 | 2 |
| MAC 222 | Advanced CNC Turning | 1 | 3 | 2 |
| MAC 245 | Mold Construction I | 2 | 6 | 4 |
| MEC 232 | CAM II | 1 | 4 | 3 |
| | Technical Elective* | 1-3 | 3-9 | 2-6 |
| | | **6-8** | **19-25** | **13-17** |
| **Sixth Semester (Summer)** | | | | |
| MAC 241 | Jigs and Fixtures I | 2 | 6 | 4 |
| MAC 247 | Production Tooling | 2 | 0 | 2 |
| | | **4** | **6** | **6** |
| **Program Totals** | | **40-42** | **86-92** | **72-76** |

***Technical Elective:**

**Select one course from:**

| | | | | |
|---|---|---|---|---|
| WLD 112 | Basic Welding Processes | 1 | 3 | 2 |
| MAC 234 | Adv Four/Five-Axis Machin | 3 | 9 | 6 |
| MAC 228 | Advanced CNC Processes | 2 | 3 | 3 |
| MAC 231 | CNC Graphics Prog: Turning | 1 | 4 | 3 |

## Machining Technology
## Associate in Applied Science Degree – Evening Schedule (A50300)

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| BPR 111 | Blueprint Reading I | 1 | 2 | 2 |
| MAC 111AB | Machining Technology I | 1 | 6 | 3 |
| MAC 151 | Machining Calculations | 1 | 2 | 2 |
| | | **3** | **10** | **7** |
| **Second Semester (Spring)** | | | | |
| BPR 121 | Blueprint Reading II | 1 | 2 | 2 |
| COM 231 | Public Speaking (or COM 120) | 3 | 0 | 3 |
| MAC 111BB | Machining Technology I | 1 | 6 | 3 |
| | | **5** | **8** | **8** |
| **Third Semester (Summer)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| MAC 112AB | Machining Technology II | 1 | 4 | 2 |
| MAC 121 | Introduction to CNC | 2 | 0 | 2 |
| | | **3** | **6** | **5** |
| **Fourth Semester (Fall)** | | | | |
| MAC 112BB | Machining Technology II | 1 | 8 | 4 |
| MAC 124 | CNC Milling | 1 | 3 | 2 |
| MAC 152 | Advanced Machining Calculations | 1 | 2 | 2 |
| | | **3** | **13** | **8** |
| **Fifth Semester (Spring)** | | | | |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MAC 113AB | Machining Technology III | 1 | 8 | 4 |
| MAC 122 | CNC Turning | 1 | 3 | 2 |
| | | **5** | **11** | **9** |
| **Sixth Semester (Summer)** | | | | |
| MAC 113BB | Machining Technology III | 1 | 4 | 2 |
| SOC 215 | Group Processes | 3 | 0 | 3 |
| | | **4** | **4** | **5** |

| | | | | |
|---|---|---|---|---|
| **Seventh Semester (Fall)** | | | | |
| MAC 245 | Mold Construction I | 2 | 6 | 4 |
| MAC 247 | Production Tooling | 2 | 0 | 2 |
| | | **4** | **6** | **6** |
| **Eighth Semester (Spring)** | | | | |
| MAC 226 | CNC EDM | 1 | 3 | 2 |
| | Technical Elective* | 1-3 | 3-9 | 2-6 |
| | | **2-4** | **6-12** | **4-8** |
| **Ninth Semester (Summer)** | | | | |
| MAC 224 | Advanced CNC Milling | 1 | 3 | 2 |
| | | **1** | **3** | **2** |
| **Tenth Semester (Fall)** | | | | |
| MAT 121 | Algebra/Trigonometry (or PHY 121 Applied Physics I) | 2 | 2 | 3 |
| MEC 231 | CAM I | 1 | 4 | 3 |
| | | **3** | **6** | **6** |
| **Eleventh Semester (Spring)** | | | | |
| MEC 232 | CAM II | 1 | 4 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **4** | **4** | **6** |
| **Twelfth Semester (Summer)** | | | | |
| MAC 222 | Advanced CNC Turning | 1 | 3 | 2 |
| MAC 241 | Jigs and Fixtures I | 2 | 6 | 4 |
| | | **3** | **9** | **6** |
| **Program Totals** | | **40-42** | **86-92** | **72-76** |
| ***Technical Elective:** | | | | |
| **Select one course from:** | | | | |
| WLD 112 | Basic Welding Processes | 1 | 3 | 2 |
| MAC 234 | Adv Four/Five-Axis Machin | 3 | 9 | 6 |
| MAC 228 | Advanced CNC Processes | 2 | 3 | 3 |
| MAC 231 | CNC Graphics Prog: Turning | 1 | 4 | 3 |

## Machining Technology - Diploma (D50300)

| Program Summary | Hours |
|---|---|
| General Education | 9 |
| *English/Communication* | *6* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 26 |
| Other Courses | 7 |
| Program Total | 42 |

Courses requiring a grade of "C" or better: BPR and MAC

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| BPR 111 | Blueprint Reading I | 1 | 2 | 2 |
| MAC 111 | Machining Technology | 2 | 12 | 6 |
| MAC 121 | Introduction to CNC | 2 | 0 | 2 |
| MAC 151 | Machining Calculations | 1 | 2 | 2 |
| SOC 215 | Group Processes | 3 | 0 | 3 |
| | | **9** | **18** | **16** |
| **Second Semester (Spring)** | | | | |
| BPR 121 | Blueprint Reading II | 1 | 2 | 2 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MAC 112 | Machining Technology II | 2 | 12 | 6 |
| MAC 122 | CNC Turning | 1 | 3 | 2 |
| MAC 124 | CNC Milling | 1 | 3 | 2 |
| | | **11** | **20** | **18** |
| **Third Semester (Summer)** | | | | |
| MAC 113 | Machining Technology III | 2 | 12 | 6 |
| MAC 152 | Advanced Machining Calculations | 1 | 2 | 2 |
| | | **3** | **14** | **8** |
| **Program Totals** | | **23** | **52** | **42** |

## Machining Technology - Diploma - Evening Schedule (D50300)

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| BPR 111 | Blueprint Reading I | 1 | 2 | 2 |
| MAC 111AB | Machining Technology I | 1 | 6 | 3 |
| MAC 151 | Machining Calculations | 1 | 2 | 2 |
| | | **3** | **10** | **7** |
| **Second Semester (Spring)** | | | | |
| BPR 121 | Blueprint Reading II | 1 | 2 | 2 |
| COM 231 | Public Speaking | 3 | 0 | 3 |
| MAC 111BB | Machining Technology I | 1 | 6 | 3 |
| | | **5** | **8** | **8** |
| **Third Semester (Summer)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| MAC 112AB | Machining Technology II | 1 | 4 | 2 |
| MAC 121 | Introduction to CNC | 2 | 0 | 2 |
| | | **3** | **6** | **5** |
| **Fourth Semester (Fall)** | | | | |
| MAC 112BB | Machining Technology II | 1 | 8 | 4 |
| MAC 124 | CNC Milling | 1 | 3 | 2 |
| MAC 152 | Advanced Machining Calculations | 1 | 2 | 2 |
| | | **3** | **13** | **8** |
| **Fifth Semester (Spring)** | | | | |
| ENG 110 | Freshman Composition (or ENG 111) | 3 | 0 | 3 |
| MAC 113AB | Machining Technology III | 1 | 8 | 4 |
| MAC 122 | CNC Turning | 1 | 3 | 2 |
| | | **5** | **11** | **9** |

| | | | |
|---|---|---|---|
| **Sixth Semester (Summer)** | | | |
| MAC 113BB Machining Technology III | 1 | 4 | 2 |
| SOC 215 Group Processes | 3 | 0 | 3 |
| | **4** | **4** | **5** |
| **Program Total** | **23** | **52** | **42** |

## Machining Technology Basic Certificate (C50300L1)

This certificate program is designed to develop fundamental skills in the operation of machine tools including drilling, turning, milling and grinding. Training in basic measuring, layout, and blueprint reading is also provided.

Completers will be prepared for employment as entry-level machine operators/machinist apprentices in area manufacturing firms. Courses in this program can be transferred directly into the Machining Technology Associate Degree curriculum.

| | Weekly | | |
|---|---|---|---|
| | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| BPR 111 Blueprint Reading I | 1 | 2 | 2 |
| MAC 121 Introduction to CNC | 2 | 0 | 2 |
| MAC 124 CNC Milling | 1 | 3 | 2 |
| MAC 111 Machining Technology | 2 | 12 | 6 |
| **Certificate Totals** | **6** | **17** | **12** |

## Machining Technology CNC Programming Certificate (C50300L2)

The purpose of this certificate program is to introduce basic CAD/CAM programming skills to individuals who want to learn computer numerical control (CNC) machining. Students will learn 2D and 3D programming as well as 2 axis and 3 axis machining. The student will make the parts they design.

| | Weekly | | |
|---|---|---|---|
| | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| BPR 111 Blueprint Reading I | 1 | 2 | 2 |
| MAC 121 Introduction to CNC | 2 | 0 | 2 |
| MAC 151 Machining Calculations | 3 | 0 | 2 |
| MAC 122 CNC Turning | 1 | 3 | 2 |
| MAC 124 CNC Milling | 1 | 3 | 2 |
| MEC 231 CAM I | 1 | 4 | 3 |
| **Certificate Totals** | **9** | **12** | **13** |

## Machining Technology Advanced CNC Programming Certificate (C50300L3)

The purpose of this certificate program is to introduce advanced CAD/CAM programming skills to individuals who have completed the courses in the CNC Programming Certificate or equivalent. Students will learn 4 axis and 5 axis programming and machining. The students will make the parts they design.

| | Weekly | | |
|---|---|---|---|
| | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| MAC 228 Advanced CNC Processes | 2 | 3 | 3 |
| MAC 231 CNC Graphics Prog: Turning | 1 | 4 | 3 |
| MAC 234 Adv Four/Five-Axis Machin | 3 | 9 | 6 |
| **Certificate Totals** | **6** | **16** | **12** |

## Machining Technology Fundamentals of Metals Certificate (C50300L4)

The purpose of this certificate program is to introduce dual enrolled High School students to metals manufacturing.

| | Weekly | | |
|---|---|---|---|
| | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| MAC 111 Machining Technology I | 2 | 12 | 6 |
| MAC 112 Machining Technology II | 2 | 12 | 6 |
| BPR 111 Blueprint Reading I | 1 | 2 | 2 |
| BPR 121 Blueprint Reading II | 1 | 2 | 2 |
| **Certificate Totals** | **6** | **28** | **16** |

# Mechanical Engineering Technology

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. This program also maximizes transfer credit to certain four-year university engineering and/or industrial programs. 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.

Coursework 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.

## Mechanical Engineering Technology Associate in Applied Science Degree (A40320)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 19 |
| Other Courses | 36-38 |
| Program Total | 70-72 |

Courses requiring a grade of "C" or better: ATR, CIV, COE, DFT, EGR, ELC, HYD, ISC, MAT, MEC, PLA and WLD

**First Semester (Fall)**

| | | | | | |
|---|---|---|---|---|---|
| DFT | 151 | CAD I (or DFT 170) | 2 | 3 | 3 |
| EGR | 110 | Intro to Engineering Technology (or EGR 150) | 1 | 2 | 2 |
| ENG | 110 | Freshman Composition* (or ENG 111) | 3 | 0 | 3 |
| ISC | 121 | Environmental Health & Safety | 3 | 0 | 3 |
| MAT | 121 | Algebra/Trigonometry I* (or MAT 161/161A, MAT 171/171A, MAT 175) | 2 | 2 | 3 |
| MEC | 180 | Engineering Materials | 2 | 3 | 3 |
| | | | **13** | **10** | **17** |

**Second Semester (Spring)**

| | | | | | |
|---|---|---|---|---|---|
| COM | 231 | Public Speaking | 3 | 0 | 3 |
| DFT | 154 | Introduction to Solid Modeling | 2 | 3 | 3 |
| EGR | 125 | Applied Software for Technicians | 1 | 2 | 2 |
| MEC | 111 | Machine Processes I (or MAC 111) | 1 | 4 | 3 |
| WLD | 112 | Basic Welding Processes | 1 | 3 | 2 |
| | | | **8** | **12** | **13** |

**Third Semester (Summer)**

| | | | | | |
|---|---|---|---|---|---|
| | | MEC Elective Group 1* | | | 2-3 |
| MEC | 161 | Manufacturing Process I | 3 | 0 | 3 |
| MNT | 111 | Maintenance Practices | 2 | 2 | 3 |
| | | | **5** | **2** | **8-9** |

**Fourth Semester (Fall)**

| | | | | | |
|---|---|---|---|---|---|
| CIV | 110 | Statics and Strength of Materials | 2 | 6 | 4 |
| ELC | 111 | Introduction to Electricity | 2 | 2 | 3 |
| | | MEC Elective Group 2** | | | 2-3 |
| PLA | 120 | Injection Molding | 2 | 3 | 3 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **9** | **11** | **15-16** |

**Fifth Semester (Spring)**

| | | | | | |
|---|---|---|---|---|---|
| ATR | 282 | Robotics and CIM (or ATR 112) | 3 | 2 | 4 |
| ELC | 213 | Instrumentation | 3 | 2 | 4 |
| HYD | 110 | Hydraulics/Pneumatics | 2 | 3 | 3 |
| MEC | 260 | Fundamentals of Machine Design | 2 | 3 | 3 |
| | | Social/Behavioral Elective | 3 | 0 | 3 |
| | | | **13** | **10** | **17** |
| **Program Totals** | | | **48** | **45** | **70-72** |

***MEC Elective Group 1 - Select one course from:**

| | | | | | |
|---|---|---|---|---|---|
| ISC | 132 | Mfg Quality Control | 2 | 3 | 3 |
| ISC | 278 | cGMP Quality Systems | | | 2 |
| ISC | 279 | Auditing for cGMP | | | 3 |
| ISC | 280 | Validation Fundamentals | | | 2 |

****MEC Elective Group 2 - Select one course from:**

| | | | | | |
|---|---|---|---|---|---|
| COE | 112 | Co-Op Work Experience I | 0 | 20 | 2 |
| EGR | 130 | Engineering Cost Control | 2 | 2 | 3 |
| EGR | 285 | Design Project | 0 | 4 | 2 |
| ELC | 128 | Introduction to PLC | 2 | 3 | 3 |
| PLA | 110 | Introduction to Plastics | 2 | 0 | 2 |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| DFT | 111 | Technical Drafting I | 1 | 3 | 2 |

Students transferring to a 4-year institution are strongly encouraged to take the following four courses in addition to those listed above: ENG 114, CHM 135 or CHM 151, PHY 131 or PHY 151, MAT 151/151A.

## Mechanical Engineering Technology Plastic Injection Molding Certificate (C40320L2)

The Mechanical Engineering Technology Plastic Injection Molding Certificate program is designed to develop the fundamental knowledge of plastics and plastic injection molding. This certificate prepares students for employment opportunities in the plastics industry.

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| ATR | 282 | Robotics and CIM (or ATR 112) | 3 | 2 | 4 |
| BPR | 111 | Blueprint Reading | 1 | 2 | 2 |
| ISC | 121 | Environmental Health and Safety | 3 | 0 | 3 |
| PLA | 110 | Introduction to Plastics | 2 | 0 | 2 |
| PLA | 120 | Injection Molding | 2 | 3 | 3 |
| **Certificate Total** | | | **11** | **7** | **14** |

## Mechanical Engineering Technology Mechanical Drafting Certificate (C40320L3)

The Mechanical Engineering Technology Mechanical Drafting Certificate program is designed to develop fundamental skills in CAD, engineering drafting, three-dimensional solid modeling and design software, engineering materials, and the different machining and manufacturing processes.

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| DFT | 151 | CAD I (or DFT 170) | 2 | 3 | 3 |
| DFT | 154 | Introduction to Solid Modeling | 2 | 3 | 3 |
| DFT | 111 | Technical Drafting I | 1 | 3 | 2 |
| MEC | 111 | Machine Processes I (or MAC 111) | 1 | 4 | 3 |
| MEC | 161 | Manufacturing Processes I | 3 | 0 | 3 |
| MEC | 180 | Engineering Materials | 2 | 3 | 3 |
| **Certificate Total** | | | **11** | **16** | **17** |

## Mechanical Engineering Technology Quality and cGMP Certificate (C40320L4)

The Mechanical Engineering Technology Quality and cGMP Certificate program is designed to develop fundamental skills in Quality Systems, cGMP and FDA compliant Validation. This certificate prepares students for employment opportunities in regulated manufacturing industries.

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| ISC | 121 | Environmental Health and Safety | 3 | 0 | 3 |
| ISC | 132 | Manufacturing Quality Control | 2 | 3 | 3 |
| ISC | 278 | cGMP Quality Systems | 2 | 0 | 2 |
| ISC | 279 | Auditing for cGMP | 2 | 2 | 3 |
| ISC | 280 | Validation Fundamentals | 1 | 2 | 2 |
| **Certificate Total** | | | **10** | **7** | **13** |

# 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 Professional Land Surveyor in North Carolina.

## Surveying Technology Associate in Applied Science Degree (A40380)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 29 |
| Other Courses | 23 |
| Program Total | 67 |

Courses requiring a grade of "C" or better: CIV, EGR, GIS and SRV

| | | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|---|
| **First Semester (Fall)** | | | | | |
| ACA | 115 | First-Year Seminar (or EGR 110) | 0 | 2 | 1 |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech (or DFT 151) | 1 | 2 | 2 |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A) | 2 | 2 | 3 |
| | | | **8** | **9** | **12** |
| **Second Semester (Spring)** | | | | | |
| CIV | 110 | Statics/Strength of Materials (or MEC 250) | 2 | 6 | 4 |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| ENG | 114 | Prof. Research and Reporting (or COM 120, or COM 231) | 3 | 0 | 3 |
| SRV | 110 | Surveying I | 2 | 6 | 4 |
| | | | **8** | **18** | **14** |
| **Third Semester (Summer)** | | | | | |
| CIV | 211 | Hydraulics and Hydrology | 2 | 3 | 3 |
| SRV | 111 | Surveying II | 2 | 6 | 4 |
| | | Social/Behavioral Sciences Elective | 3 | 0 | 3 |
| | | | **7** | **9** | **10** |
| **Fourth Semester (Fall)** | | | | | |
| CIV | 111 | Soils and Foundations | 2 | 3 | 3 |
| CIV | 215 | Highway Technology | 1 | 3 | 2 |
| SRV | 210 | Surveying III | 2 | 6 | 4 |
| SRV | 220 | Surveying Law | 2 | 2 | 3 |
| SRV | 240 | Topo/Site Surveying | 2 | 6 | 4 |
| | | | **9** | **20** | **16** |

| | | | | |
|---|---|---|---|---|
| **Fifth Semester (Spring)** | | | | |
| GIS | 112 | Introduction to GPS | 2 | 2 | 3 |
| SRV | 230 | Subdivision Planning | 1 | 6 | 3 |
| SRV | 250 | Advanced Surveying | 2 | 6 | 4 |
| SRV | 260 | Field & Office Practices | 1 | 3 | 2 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **9** | **17** | **15** |
| **Program Totals** | | | **41** | **73** | **67** |

## Surveying Technology
## Associate in Applied Science Degree – Evening Schedule (A40380)

(Begins in odd years only)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech | 1 | 2 | 2 |
| MAT | 121 | Algebra/Trigonometry I (or MAT 171/171A) | 2 | 2 | 3 |
| | | | **5** | **7** | **8** |
| **Second Semester (Spring)** | | | | | |
| ACA | 115 | First-Year Seminar (or EGR 110) | 0 | 2 | 1 |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| SRV | 110 | Surveying I | 2 | 6 | 4 |
| | | | **3** | **14** | **8** |
| **Third Semester (Summer)** | | | | | |
| ENG | 111 | Expository Writing | 3 | 0 | 3 |
| | | | **3** | **0** | **3** |
| **Fourth Semester (Fall)** | | | | | |
| CIV | 110 | Statics/Strength of Materials (or MEC 250) | 2 | 6 | 4 |
| SRV | 111 | Surveying II | 2 | 6 | 4 |
| | | | **4** | **12** | **8** |
| **Fifth Semester (Spring)** | | | | | |
| CIV | 111 | Soils and Foundations | 2 | 3 | 3 |
| ENG | 114 | Prof. Research and Reporting (or COM 120, or COM 231) | 3 | 0 | 3 |
| SRV | 210 | Surveying III | 2 | 6 | 4 |
| | | | **7** | **9** | **10** |
| **Sixth Semester (Summer)** | | | | | |
| CIV | 211 | Hydraulics and Hydrology | 2 | 3 | 3 |
| | | | **2** | **3** | **3** |
| **Seventh Semester (Fall)** | | | | | |
| CIV | 215 | Highway Technology | 1 | 3 | 2 |
| GIS | 112 | Introduction to GPS | 2 | 2 | 3 |
| SRV | 220 | Surveying Law | 2 | 2 | 3 |
| | | | **5** | **7** | **8** |
| **Eighth Semester (Spring)** | | | | | |
| SRV | 240 | Topo/Site Surveying | 2 | 6 | 4 |
| SRV | 260 | Field & Office Practices | 1 | 3 | 2 |
| | | Social/Behavioral Science Elective | 3 | 0 | 3 |
| | | | **6** | **9** | **9** |
| **Ninth Semester (Summer)** | | | | | |
| | | Humanities/Fine Arts Elective | 3 | 0 | 3 |
| | | | **3** | **0** | **3** |
| **Tenth Semester (Fall)** | | | | | |
| SRV | 250 | Advanced Surveying | 2 | 6 | 4 |
| SRV | 230 | Subdivision Planning | 1 | 6 | 3 |
| | | | **3** | **12** | **7** |
| **Program Totals** | | | **41** | **73** | **67** |

## Surveying Technology
## Surveying Fundamentals Certificate (C40380L1)

(Evening schedule begins in odd years only)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech (or DFT 151) | 1 | 2 | 2 |
| MAT | 121 | Algebra/Trigonometry I | 2 | 2 | 3 |
| | | | 5 | 7 | 8 |
| **Second Semester (Spring)** | | | | | |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| SRV | 110 | Surveying I | 2 | 6 | 4 |
| | | | **3** | **12** | 7 |
| **Certificate Totals** | | | **8** | **19** | **15** |

## Surveying Technology
## Civil/Surveying CAD Certificate (C40380L2)

(Evening schedule begins in odd years only)

| | | | Weekly | | |
|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | |
| COM | 120 | Intro to Interpersonal Communication (or COM 231) | 3 | 0 | 3 |
| EGR | 115 | Intro to Technology | 2 | 3 | 3 |
| EGR | 125 | Appl Software for Tech (or DFT 151) | 1 | 2 | 2 |
| | | | **6** | **5** | **8** |
| **Second Semester (Spring)** | | | | | |
| CIV | 125 | Civil/Surveying CAD | 1 | 6 | 3 |
| SRV | 260 | Field & Office Practices | 1 | 3 | 2 |
| | | | **2** | **9** | **5** |
| **Certificate Totals** | | | **8** | **14** | **13** |

# 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 nonconsumable electrode welding and cutting processes.

Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and nondestructive testing provides 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 welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

## Welding Technology
## Associate in Applied Science Degree (A50420)

| Program Summary | Hours |
|---|---|
| General Education | 15 |
| *English/Communication* | *6* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 18 |
| Other Courses | 41 |
| Program Total | 74 |

Courses requiring a grade of "C" or better: WLD

| | | Weekly Class Hrs. | Weekly Lab Hrs. | Credit Hrs. |
|---|---|---|---|---|
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| MAT 121 | Algebra/Trigonometry I (or PHY 121) | 2 | 2 | 3 |
| WLD 110 | Cutting Processes | 1 | 3 | 2 |
| WLD 115 | SMAW (Stick) Plate | 2 | 9 | 5 |
| WLD 121 | GMAW (MIG) Plate | 2 | 6 | 4 |
| | | **7** | **22** | **15** |
| **Second Semester (Spring)** | | | | |
| WLD 116 | SMAW (Stick) Plate/Pipe | 1 | 9 | 4 |
| WLD 122 | GMAW (MIG) Plate/Pipe | 1 | 6 | 3 |
| WLD 141 | Symbols & Specifications | 2 | 2 | 3 |
| ENG 110 | Freshman Composition | 3 | 0 | 3 |
| | | **7** | **17** | **13** |
| **Third Semester (Summer)** | | | | |
| WLD 131 | GTAW (TIG) Plate | 2 | 6 | 4 |
| WLD 143 | Welding Metallurgy | 1 | 2 | 2 |
| WLD 262 | Inspection & Testing | 2 | 2 | 3 |
| | | **5** | **10** | **9** |
| **Fourth Semester (Fall)** | | | | |
| MAC 118 | Machine Shop Basic | 1 | 3 | 2 |
| WLD 132 | GTAW (TIG) Plate/Pipe | 1 | 6 | 3 |
| WLD 151 | Fabrication I | 2 | 6 | 4 |
| | Social/ Behavioral Science Elective | 3 | 0 | 3 |
| | Humanities Elective | 3 | 0 | 3 |
| | | **10** | **15** | **15** |
| **Fifth Semester (Spring)** | | | | |
| SPA 120 | Spanish for the Workplace (or PCS 112) | 3 | 0 | 3 |
| WLD 231 | GTAW (TIG) Pipe | 1 | 6 | 3 |
| WLD 251 | Fabrication II | 1 | 6 | 3 |
| WLD 261 | Certification Practices | 1 | 3 | 2 |
| | Communications Elective* | 3 | 0 | 3 |
| | | **9** | **15** | **14** |
| **Sixth Semester (Summer)** | | | | |
| DFT 161 | Pattern Design and Layout (or PCS 110 or PCJ 262) | 1 | 2 | 2 |
| MEC 110 | Introduction to CAD/CAM | 1 | 2 | 2 |
| WLD 215 | SMAW (Stick) Pipe | 1 | 9 | 4 |
| | | **3** | **13** | **8** |
| **Program Totals** | | **41** | **92** | **74** |

***Communications Elective:**

**Select one course from:**

| | |
|---|---|
| ENG 114 | Professional Research and Reporting |
| COM 120 | Intro to Interpersonal Communication |
| COM 231 | Public Speaking |

## Welding Technology - Diploma (D50420)

| Program Summary | Hours |
|---|---|
| General Education | 6 |
| *English/Communication* | *3* |
| *Natural Sciences/Mathematics* | *3* |
| Core Courses | 18 |
| Other Courses | 15 |
| Program Total | 39 |

Courses requiring a grade of "C" or better: WLD

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | |
| ACA 115 | First-Year Seminar | 0 | 2 | 1 |
| MAC 118 | Machine Shop Basic | 1 | 3 | 2 |
| MAT 121 | Algebra/Trigonometry I (or PHY 122) | 2 | 2 | 3 |
| WLD 110 | Cutting Processes | 1 | 3 | 2 |
| WLD 115 | SMAW (Stick) Plate | 2 | 9 | 5 |
| WLD 121 | GMAW (MIG) FCAW (Flux) Plate | 2 | 6 | 4 |
| | | **8** | **25** | **17** |
| **Second Semester (Spring)** | | | | |
| ENG 110 | Freshman Composition (or ENG 102) | 3 | 0 | 3 |
| WLD 116 | SMAW (Stick) Plate/Pipe | 1 | 9 | 4 |
| WLD 122 | GMAW (MIG) Plate/Pipe | 1 | 6 | 3 |
| WLD 141 | Symbols and Specifications | 2 | 2 | 3 |
| | | **7** | **17** | **13** |
| **Third Semester (Summer)** | | | | |
| WLD 131 | GTAW (TIG) Pipe | 2 | 6 | 4 |
| WLD 143 | Welding Metallurgy | 1 | 2 | 2 |
| WLD 262 | Inspection and Testing | 2 | 2 | 3 |
| | | **5** | **10** | **9** |
| **Program Totals** | | **20** | **52** | **39** |

## Welding Technology Basic Welding Certificate I (C50420L2)

The following courses give students a basic understanding of the principles, and skills of modern day welding. Upon completion, students should be able to apply basic welding techniques in both SMAW and GMAW welding.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| WLD 115 | SMAW (Stick) Plate | 2 | 9 | 5 |
| WLD 121 | GMAW/FCAW/Plate | 2 | 6 | 4 |
| WLD 122 | GMAW (MIG) Plate/Pipe (or WLD 131) | 1 | 6 | 3 |
| WLD 110 | Cutting Processes | 1 | 3 | 2 |
| **Certificate Totals** | | **6** | **24** | **14** |

## Welding Technology Ornamental Ironwork Certificate (C50420L4) - Day Schedule

The following courses give students an understanding of the principles, methods, techniques, and skill for working in the ornamental Ironworking industry. This certificate is designed for metal workers and artists.

| | | Weekly | | |
|---|---|---|---|---|
| | | **Class Hrs.** | **Lab Hrs.** | **Credit Hrs.** |
| WLD 110 | Cutting Processes | 1 | 3 | 2 |
| PCS 110 | Intro to Metal Sculpture | 2 | 9 | 5 |
| PCS 112 | Beg, Welding for Artists | 1 | 4 | 3 |
| PCJ 262 | Hand Wrought Metal | 1 | 3 | 2 |
| **Certificate Totals** | | **5** | **19** | **12** |

# Arts and Sciences

## General Education

Consistent with Asheville-Buncombe Technical Community College's commitment to student success, the general education program provides students with a knowledge base of historical, societal, and environmental contexts for succeeding in the changing global community. The general education program represents a full spectrum of English composition, communication, and literature; humanities and fine arts; social and behavioral sciences; natural sciences; chemistry and physics; mathematics; and related elective components.

The purposes of the general education program are to facilitate student acquisition and sharing of knowledge, to encourage social interaction, and to promote an educated citizenry. General education courses develop broad, cross-curriculum knowledge and skill sets that prepare the student to successfully master the challenges of post-graduation endeavors.

For students interested in starting or managing their own business, the Student Business Incubator is one of many programs and services offered by the A-B Tech Small Business Center/Business Incubator. Please refer to pages 10 and 55 for more information.

Upon successful completion of the general education requirements, the student will have mastered the following cross-curriculum competencies:

1. Demonstrate effective speaking, writing, reading and listening skills.
2. Demonstrate proficiency in analyzing problems and making logical decisions through locating, evaluating, and using information.
3. Demonstrate proficiency with math skills and/or natural science knowledge by organizing and analyzing information to come to logical conclusions.
4. Demonstrate basic competency in computer technology.
5. Demonstrate knowledge of cultural diversity.

## Learning Communities: Interdisciplinary Studies

Emphasizing interdependency between varied disciplines encourages students to view their education as a comprehensive experience. The interdisciplinary unifying structure is an invitational approach connecting individual courses and demonstrating the necessity of such links for a more conscious experience. A-B Tech's Interdisciplinary Studies Program includes linked courses from the general education program. These learning communities allow students to understand the relationships connecting natural and social sciences, humanities, and history.

The IDS Program includes 27 of the 44 general education credit hours for the A.A. Degree or Diploma. It is an ideal avenue for those planning to pursue a Bachelor's Degree. The program is designed to be completed in 4 semesters: IDS1 and 3 during fall semester and IDS 2 and 4 during spring semester. IDS1=HIS111 and ENG 111; IDS2=ENG 113 and SOC 225; IDS 3 = BIO 110 and HUM 115; and IDS 4= HUM 212 and CHM 135.

**Degrees Conferred**
Associate in Arts
Associate in Science
Associate in Fine Arts
A.A.S., Biotechnology
A.A.S., General Occupational Technology

**Diplomas Awarded**
Associate in Arts
Associate in Science
General Occupational Technology

# Curriculum requirements for the Associate in Arts (A.A.) Degree (A10100)

| Program Summary | Hours |
|---|---|
| General Education | 44 |
| *English/Composition* | *6* |
| *Humanities/Communication/Fine Arts* | *12* |
| *Social/Behavioral Sciences* | *12* |
| *Natural Sciences* | *8* |
| *Mathematics* | *6* |
| Other Courses | 21 |
| Program Total | 65 |

## General Education Core Requirements 44 Semester Hours

### English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

### Humanities/Fine Arts (12 semester hours)

1. A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM 120 is also acceptable.
2. Select three additional courses from at least two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy, and religion. **At least one course must be a literature (*) course.**

| | | | | |
|---|---|---|---|---|
| ART 111 | ENG 131* | FRE 212 | HUM 150 | PHI 230 |
| ART 114 | ENG 231* | GER 111 | HUM 160 | PHI 240 |
| ART 115 | ENG 232* | GER 112 | HUM 211 | REL 110 |
| ART 117 | ENG 241* | GER 211 | HUM 212 | REL 111 |
| DRA 111 | ENG 242* | GER 212 | HUM 220 | REL 112 |
| DRA 112 | ENG 243* | HUM 110 | MUS 110 | REL 211 |
| DRA 122 | ENG 261* | HUM 115 | MUS 112 | REL 212 |
| DRA 126 | ENG 262* | HUM 120 | MUS 113 | SPA 111 |
| DRA 211 | FRE 111 | HUM 121 | MUS 114 | SPA 112 |
| DRA 212 | FRE 112 | HUM 122 | PHI 210 | SPA 211 |
| | FRE 211 | HUM 130 | PHI 215 | SPA 212 |

### Social/Behavioral Sciences (12 semester hours)

Select four courses from at least three of the following discipline areas: anthropology, economics, geography, history, political science, psychology, and sociology. **At least one course must be a history (*) course.**

| | | | | |
|---|---|---|---|---|
| ANT 210 | ECO 252 | HIS 115* | POL 210 | SOC 210 |
| ANT 220 | GEO 111 | HIS 131* | PSY 150 | SOC 213 |
| ANT 240 | GEO 112 | HIS 132* | PSY 237 | SOC 220 |
| ECO 151 | HIS 111* | POL 110 | PSY 239 | SOC 225 |
| ECO 251 | HIS 112* | POL 120 | PSY 241 | SOC 240 |
| | | | PSY 281 | |

### Natural Sciences (8 semester hours)

Select two courses, including accompanying laboratory* work, from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 count as the A.A. science requirement, not both.

| | | | | |
|---|---|---|---|---|
| AST 111 | BIO 120 | CHM 135 | GEL 113 | PHY 151 |
| AST 111A* | BIO 130 | CHM 136 | GEL 230 | PHY 152 |
| BIO 110 | BIO 140 | CHM 151 | PHY 110 | PHY 251 |
| BIO 111 | BIO 140A* | CHM 152 | PHY 110A* | PHY 252 |
| BIO 112 | CHM 132 | GEL 111 | | |

### Mathematics (6 semester hours)

1. MAT 161 or higher is required. Select one course from:

MAT 161* College Algebra
MAT 171* Precalculus Algebra
MAT 172 Precalculus Trigonometry
MAT 175* Precalculus
MAT 271 Calculus I
MAT 272 Calculus II
MAT 273 Calculus III

2. Select a second course from the following:

| | | | | |
|---|---|---|---|---|
| MAT 140 | MAT 171 | MAT 175* | MAT 272 | CIS 110 |
| MAT 151* | MAT 172* | MAT 271 | MAT 273 | CIS 115 |

*A math lab is required for this course. Labs count as elective hours.

## Other Required Hours
## 21 Semester Hours

1. ACA 115, First-Year Seminar is required
2. Additional Courses (20 Semester Hours):

   These include general education, pre-major and elective courses that have been approved for transfer (see following list).

   A second foreign language course is recommended (elective)*. Math lab hours, when required as a corequisite, count as an elective. Students should refer to Pre-Major Articulation Agreements before making selections for required hours: **www.ga.unc.edu/student_info/caa/**.

### Recommended Additional Courses:

Although these courses are not required, they are recommended for all students who have sufficient available credit hours.

1. Computing (3 semester hours): CIS 110 Introduction to Computers
2. Health and Physical Education (3 semester hours): HEA 110, HEA 112, or PED 110 plus any PED activity course

## Total Semester Hours 65

*Foreign language courses should be selected in a sequence that meets the requirements of the receiving college/university. Most colleges/universities require a two-semester sequence of foreign language.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the pre-major, senior institution, etc. Health and Physical Education courses may be selected any semester.

### Electives – Associate in Arts (20 semester hours)

Any approved transfer course (including core courses) may be taken as an elective. Listed below are electives taught at A-B Tech. ***No elective course may be substituted for an approved general education core course.*** All PED (physical education) courses count as electives.

| | | | | |
|---|---|---|---|---|
| ACC 120 (4) | BIO 168 (4) | DRA 120 (3) | ENG 273 (3) | MUS 121 (4) |
| ACC 121 (4) | BIO 169 (4) | DRA 124 (3) | ENG 274 (3) | MUS 122 (4) |
| ART 121 (3) | BIO 173 (4) | DRA 130 (3) | ENG 275 (3) | MUS 131 (1) |
| ART 122 (3) | BIO 175 (3) | DRA 131 (3) | FRE 181 (1) | MUS 132 (1) |
| ART 131 (3) | BIO 223 (3) | DRA 135 (3) | FRE 182 (1) | MUS 221 (4) |
| ART 132 (3) | BIO 224 (2) | DRA 140 (3) | GER 141 (3) | MUS 222 (4) |
| ART 135 (3) | BIO 225 (2) | DRA 141 (3) | GER 181 (1) | MUS 231 (1) |
| ART 171 (3) | BIO 226 (2) | DRA 145 (2) | GER 182 (1) | MUS 232 (1) |
| ART 231 (3) | BIO 243 (4) | DRA 170 (3) | GER 221 (3) | PHS 140 (3) |
| ART 240 (3) | BIO 271 (3) | DRA 171 (3) | HEA 110 (3) | PSY 215 (3) |
| ART 241 (3) | BIO 275 (4) | DRA 250 (2) | HEA 112 (2) | PSY 231 (3) |
| ART 244 (3) | BUS 110 (3) | EDU 216 (4) | HEA 120 (3) | PSY 259 (3) |
| ART 261 (3) | BUS 115 (3) | EGR 150 (2) | HIS 162 (3) | PSY 271 (3) |
| ART 262 (3) | CHM 251 (4) | EGR 220 (3) | HIS 212 (3) | PSY 275 (3) |
| ART 271 (3) | CHM 252 (4) | EGR 230 (3) | HIS 227 (3) | SOC 215 (3) |
| ART 274 (3) | CHM 265 (4) | ENG 125 (3) | HIS 236 (3) | SOC 232 (3) |
| ART 275 (3) | CHM 271 (3) | ENG 126 (3) | HUM 123 (3) | SOC 234 (3) |
| ART 281 (3) | CJC 111 (3) | ENG 133 (3) | MAT 151A (1) | SOC 244 (3) |
| ART 282 (3) | CJC 121 (3) | ENG 134 (3) | MAT 161A (1) | SOC 254 (3) |
| ART 283 (3) | CJC 141 (3) | ENG 135 (3) | MAT 171A (1) | SPA 141 (3) |
| ART 284 (3) | COM 140 (3) | ENG 234 (3) | MAT 172A (1) | SPA 181 (1) |
| BIO 143 (2) | COM 150 (3) | ENG 235 (3) | MAT 175A(1) | SPA 182 (1) |
| BIO 155 (3) | COM 160 (3) | ENG 271 (3) | MAT 280 (3) | SPA 221 (3) |
| BIO 163 (5) | COM 250 (3) | ENG 272 (3) | MAT 285 (3) | |

# Curriculum requirements for the Transfer Core Diploma in Arts (D10100)

| Program Summary | Hours |
|---|---|
| General Education | 44 |
| *English/Composition* | *6* |
| *Humanities/ Communication/Fine Arts* | *12* |
| *Social/Behavioral Sciences* | *12* |
| *Natural Sciences* | *8* |
| *Mathematics* | *6* |
| Other Courses | 1 |
| Program Total | 45 |

## General Education Core Requirements 44 Semester Hours

**English Composition (6 semester hours)**

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

**Humanities/Fine Arts (12 semester hours)**

1. A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM120 is also acceptable.
2. Select three additional courses from at least two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy, and religion. **At least one course must be a literature (*) course.**

| | | | | |
|---|---|---|---|---|
| ART 111 | DRA 212 | FRE 211 | HUM 130 | PHI 215 |
| ART 114 | ENG 131* | FRE 212 | HUM 150 | PHI 230 |
| ART 115 | ENG 231* | GER 111 | HUM 160 | PHI 240 |
| ART 117 | ENG 232* | GER 112 | HUM 211 | REL 110 |
| ASL 111 | ENG 241* | GER 211 | HUM 212 | REL 111 |
| ASL 112 | ENG 242* | GER 212 | HUM 220 | REL 112 |
| DRA 111 | ENG 243* | HUM 110 | MUS 110 | REL 211 |
| DRA 112 | ENG 261* | HUM 115 | MUS 112 | REL 212 |
| DRA 122 | ENG 262* | HUM 120 | MUS 113 | SPA 111 |
| DRA 126 | FRE 111 | HUM 121 | MUS 114 | SPA 112 |
| DRA 211 | FRE 112 | HUM 122 | PHI 210 | SPA 211 |
| | | | | SPA 212 |

**Social/Behavioral Sciences (12 semester hours)**

Select four courses from at least three of the following discipline areas: anthropology, economics, geography, history, political science, psychology, and sociology. **At least one course must be a history (*) course.**

| | | | | |
|---|---|---|---|---|
| ANT 210 | ECO 252 | HIS 115* | POL 210 | PSY 281 |
| ANT 220 | GEO 111 | HIS 131* | PSY 150 | SOC 210 |
| ANT 240 | GEO 112 | HIS 132* | PSY 237 | SOC 213 |
| ECO 151 | HIS 111* | POL 110 | PSY 239 | SOC 220 |
| ECO 251 | HIS112* | POL 120 | PSY 241 | SOC 225 |
| | | | | SOC 240 |

**Natural Sciences (8 semester hours)**

Select two courses, including accompanying laboratory* work, from the astronomy, biology, chemistry, geology, or physics disciplines. Either BIO 110 or BIO 111 may count as the A.A. science requirement, not both.

| | | | | |
|---|---|---|---|---|
| AST 111 | BIO 120 | CHM 135 | GEL 113 | PHY 152 |
| AST 111A* | BIO 130 | CHM 136 | GEL 230 | PHY 251 |
| BIO 110 | BIO 140 | CHM 151 | PHY 110 | PHY 252 |
| BIO 111 | BIO 140A* | CHM 152 | PHY 110A* | |
| BIO 112 | CHM 132 | GEL 111 | PHY 151 | |

**Mathematics (6 semester hours)**

1. MAT 161 or higher is required. Select one course from:

   MAT 161* College Algebra

   MAT 171* Precalculus Algebra

   MAT 172 Precalculus Trigonometry

   MAT 175* Precalculus

   MAT 271 Calculus I

   MAT 272 Calculus II

   MAT 273 Calculus III

2. Select a second course from the following:

| | | | | |
|---|---|---|---|---|
| MAT 140 | MAT 171 | MAT 175* | MAT 272 | CIS 110 |
| MAT 151* | MAT 172* | MAT 271 | MAT 273 | CIS 115 |

*Math lab is required for this course. Labs count as elective hours.

**Other Required Hours (1 Semester Hour)**

1. ACA 115, First-Year Seminar is required

**Total Semester Hours 45**

# Curriculum requirements for the Associate in Science (A.S.) Degree (A10400)

| Program Summary | Hours |
|---|---|
| General Education | 44 |
| *English/Composition* | *6* |
| *Humanities/Communication/Fine Arts* | *9* |
| *Social/Behavioral Sciences* | *9* |
| *Natural Sciences/Mathematics* | *20* |
| Other Courses | 21 |
| Program Total | 65 |

## General Education Core Requirements 44 Semester Hours

### English Composition (6 semester hours)

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

ENG 112 Argument-Based Research
ENG 113 Literature-Based Research
ENG 114 Professional Research and Reporting

### Humanities/Fine Arts (9 semester hours)

1. A communications course is required in lieu of one humanities/fine arts course. COM 231, Public Speaking, is preferred. COM 120 is also acceptable.
2. Select two additional courses from two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy and religion. **One course must be a literature (*) course.**

| | | | | |
|---|---|---|---|---|
| ART 111 | ENG 231* | FRE 212 | HUM 130 | PHI 210 |
| ART 114 | ENG 232* | GER 111 | HUM 150 | PHI 215 |
| ART 115 | ENG 241* | GER 112 | HUM 160 | PHI 230 |
| ART 117 | ENG 242* | GER 211 | HUM 211 | PHI 240 |
| DRA 111 | ENG 243* | GER 212 | HUM 212 | REL 110 |
| DRA 112 | ENG 261* | HUM 110 | HUM 220 | REL 211 |
| DRA 122 | ENG 262* | HUM 115 | MUS 110 | REL 212 |
| DRA 126 | FRE 111 | HUM 120 | MUS 112 | SPA 111 |
| DRA 211 | FRE 112 | HUM 121 | MUS 113 | SPA 112 |
| ENG 131* | FRE 211 | HUM 122 | MUS 114 | SPA 211 |
| | | | | SPA 212 |

### Social/Behavioral Sciences (9 semester hours)

Select three courses from three of the following discipline areas: anthropology, economics, geography, political science, psychology and sociology. **One course must be a history (*) course.**

| | | | | |
|---|---|---|---|---|
| ANT 210 | ECO 252 | HIS 115* | PSY 150 | SOC 210 |
| ANT 220 | GEO 111 | HIS 131* | PSY 237 | SOC 213 |
| ANT 240 | GEO 112 | HIS 132* | PSY 239 | SOC 220 |
| ECO 151 | HIS 111* | POL 110 | PSY 241 | SOC 225 |
| ECO 251 | HIS 112* | POL 120 | PSY 281 | SOC 240 |
| | | POL 210 | | |

### Natural Science/Mathematics (20 semester hours)

### Natural Sciences (8 semester hours)

Select a minimum two-course sequence from the following general biology, general chemistry, or general physics courses.

| | | | |
|---|---|---|---|
| BIO 111 | CHM 151 | PHY 151 | PHY 251 |
| and | and | and | and |
| BIO 112 | CHM 152 | PHY 152 | PHY 252 |

### Mathematics (6 semester hours)

1. MAT 171 or higher is required. Select one course from:

   MAT 171* Precalculus Algebra

   MAT 172 Precalculus Trigonometry

   MAT 175* Precalculus

   MAT 271 Calculus I

   MAT 272 Calculus II

   MAT 273 Calculus III

2. Select a second course from the following:

| | | | |
|---|---|---|---|
| MAT 140 | MAT 175* | MAT 272 | CIS 110 |
| MAT 151* | MAT 271 | MAT 273 | CIS 115 |
| MAT 172* | | | |

*A math lab is required for this course. Labs count as elective hours.

Either BIO 110 or BIO 111 count as the A.A. science requirement, not both. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):

| | | | | |
|---|---|---|---|---|
| BIO 110 | BIO 130 | CHM 132 | CHM 136 | GEL 113 |
| BIO 120 | BIO 140/ BIO 140A | CHM 135 | GEL 111 | GEL 230 |

### Other Required Hours (21 Semester Hours)

1. ACA 115, First-Year Seminar is required
2. Additional Courses (14 Semester Hours):

   A minimum of 14 SHC of college transfer courses in mathematics, natural sciences, or computer science is required.

3. Additional Elective Courses (6 Semester Hours):

   Math lab hours, when required as a corequisite, count as electives. A second foreign language course is recommended (elective)*. Students should refer to Pre-Major Articulation Agreements before making selections for required hours: **www.ga.unc.edu/student_info/caa/**

**Recommended Additional Courses:**

Although these courses are not required, they are recommended for all students who have sufficient available credit hours.

1. Computing (3 semester hours): CIS 110 Introduction to Computers
2. Health and Physical Education (3 semester hours): HEA 110, HEA 112, or PED 110 plus any PED activity course

**Total Semester Hours 65**

*Foreign language courses should be selected in a sequence that meets the requirements of the receiving college/university. Most colleges/universities require a two-semester sequence of foreign language.

All college transfer courses submitted for graduation require a minimum grade of "C". Courses selected may vary according to requirements of the pre-major, senior institution, etc. Health and Physical Education courses may be selected any semester.

**Electives – Associate in Science (20 semester hours)**

Fourteen semester hours in mathematics, natural sciences, or computer science is required. Any approved transfer course (including core courses) may be taken as an elective. Listed below are electives taught at A-B Tech. ***No elective course may be substituted for an approved general education core course.***

All PED (physical education) courses count as electives.

ACC 120 (4)
ACC 121 (4)
ART 121 (3)
ART 122 (3)
ART 131 (3)
ART 132 (3)
ART 135 (3)
ART 171 (3)
ART 231 (3)
ART 240 (3)
ART 241 (3)
ART 244 (3)
ART 261 (3)
ART 262 (3)
ART 271 (3)
ART 281 (3)
ART 282 (3)
ART 283 (3)
ART 284 (3)
AST 111 (3)
AST 111A (1)
BIO 143 (2)
BIO 155 (3)
BIO 163 (5)
BIO 168 (4)
BIO 169 (4)
BIO 173 (4)
BIO 175 (3)
BIO 223 (3)
BIO 224 (2)
BIO 225 (2)
BIO 226 (2)
BIO 243 (4)
BIO 271 (3)
BIO 275 (4)
BUS 110 (3)
BUS 115 (3)
CHM 251 (4)
CHM 252 (4)
CHM 265 (4)
CHM 271 (3)
CJC 111 (3)
CJC 121 (3)
CJC 141 (3)
COM 140 (3)
COM 150 (3)
COM 160 (3)
COM 250 (3)
DRA 120 (3)
DRA 124 (3)
DRA 130 (3)
DRA 131 (3)
DRA 135 (3)
DRA 140 (3)
DRA 141 (3)
DRA 145 (3)
DRA 170 (3)
DRA 171 (3)
DRA 240 (3)
DRA 250 (2)
EDU 216 (4)
EGR 150 (2)
EGR 220 (3)
EGR 230 (3)
ENG 125 (3)
ENG 126 (3)
ENG 133 (3)
ENG 134 (3)
ENG 135 (3)
ENG 234 (3)
ENG 235 (3)
ENG 271 (3)
ENG 272 (3)
ENG 273 (3)
ENG 274 (3)
ENG 275 (3)
FRE 181 (1)
FRE 182 (1)
GER 141 (3)
GER 181 (1)
GER 182 (1)
GER 221 (3)
HEA 110 (3)
HEA 112 (2)
HEA 120 (3)
HIS 162 (3)
HIS 212 (3)
HIS 227 (3)
HIS 236 (3)
HUM 123 (3)
MAT 151A (1)
MAT 161
MAT 161A (1)
MAT 171A (1)
MAT 172A (1)
MAT 175A (1)
MAT 280 (3)
MAT 285 (3)
MUS 121 (4)
MUS 122 (4)
MUS 131 (1)
MUS 132 (1)
MUS 221 (4)
MUS 222 (4)
MUS 231 (1)
MUS 232 (1)
PHS 140 (3)
PHY 110 (3)
PHY 110A (1)
PSY 215 (3)
PSY 243 (3)
PSY 259 (3)
PSY 271 (3)
PSY 275 (3)
SOC 215 (3)
SOC 232 (3)
SOC 234 (3)
SOC 244 (3)
SOC 254 (3)
SPA 141 (3)
SPA 181 (1)
SPA 182 (1)
SPA 221 (3)

# Curriculum requirements for the Transfer Core Diploma in Science (D10400)

| Program Summary | Hours |
|---|---|
| General Education | 44 |
| *English/Composition* | *6* |
| *Humanities/Communication/Fine Arts* | *9* |
| *Social/Behavioral Sciences* | *9* |
| *Natural Sciences/Mathematics* | *20* |
| Other Courses | 1 |
| Program Total | 45 |

## General Education Core Requirements 44 Semester Hours

**English Composition (6 semester hours)**

1. ENG 111 Expository Writing is required.
2. Select an additional course from:

   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting

**Humanities/Fine Arts (9 semester hours)**

1. A communications course is required in lieu of one humanities course. COM 231, Public Speaking, is preferred. COM 120 is also acceptable.
2. Select two additional courses from two of the following discipline areas: art, drama, foreign languages, humanities, literature, music, philosophy and religion. **One course must be a literature (*) course.**

| | | | | |
|---|---|---|---|---|
| ART 111 | ENG 232* | GER 112 | HUM 211 | PHI 240 |
| ART 114 | ENG 241* | GER 211 | HUM 212 | REL 110 |
| ART 115 | ENG 242* | GER 212 | HUM 220 | REL 111 |
| ART 117 | ENG 243* | HUM 110 | MUS 110 | REL 112 |
| DRA 111 | ENG 261* | HUM 115 | MUS 112 | REL 211 |
| DRA 112 | ENG 262* | HUM 120 | MUS 113 | REL 212 |
| DRA 122 | FRE 111 | HUM 121 | MUS 114 | SPA 111 |
| DRA 126 | FRE 112 | HUM 122 | PHI 210 | SPA 112 |
| DRA 211 | FRE 211 | HUM 130 | PHI 215 | SPA 211 |
| ENG 131* | FRE 212 | HUM 150 | PHI 230 | SPA 212 |
| ENG 231* | GER 111 | HUM 160 | | |

**Social/Behavioral Sciences (9 semester hours)**

Select three courses from three of the following discipline areas: anthropology, economics, geography, political science, psychology and sociology. **One course must be a history (*) course.**

| | | | | |
|---|---|---|---|---|
| ANT 210 | ECO 252 | HIS 115* | PSY 150 | SOC 210 |
| ANT 220 | GEO 111 | HIS 131* | PSY 237 | SOC 213 |
| ANT 240 | GEO 112 | HIS 132* | PSY 239 | SOC 220 |
| ECO 151 | HIS 111* | POL 110 | PSY 241 | SOC 225 |
| ECO 251 | HIS 112* | POL 120 | PSY 281 | SOC 240 |
| | | POL 210 | | |

**Natural Science/Mathematics (20 semester hours)**

**Natural Sciences (8 semester hours)**

Select a minimum two-course sequence from the following general biology, general chemistry, or general physics courses.

| | | | |
|---|---|---|---|
| BIO 111 | CHM 151 | PHY 151 | PHY 251 |
| and | and | and | and |
| BIO 112 | CHM 152 | PHY 152 | PHY 252 |

**Mathematics (6 semester hours)**

1. MAT 171 or higher is required. Select one course from:

   MAT 171* Precalculus Algebra
   MAT 172 Precalculus Trigonometry
   MAT 175* Precalculus
   MAT 271 Calculus I
   MAT 272 Calculus II
   MAT 273 Calculus III

2. Select a second course from the following:

| | | | |
|---|---|---|---|
| MAT 151* | MAT 175* | MAT 272 | CIS 110 |
| MAT 172* | MAT 271 | MAT 273 | CIS 115 |

*A math lab is required for this course. Labs count as elective hours.

**Either BIO 110 or BIO 111 count as the A.A. science requirement, not both. Six additional semester hours may be selected from either natural sciences (listed below) or mathematics (listed above):**

| | | | | |
|---|---|---|---|---|
| BIO 110 | BIO 130 | CHM 132 | CHM 136 | GEL 113 |
| BIO 120 | BIO 140/ BIO 140A | CHM 135 | GEL 111 | GEL 230 |

**Other Required Hours 1 Semester Hour**

1. ACA 115, First-Year Seminar is required

# Curriculum requirements for the Associate in Fine Arts (A.F.A.) Degree (A10200)

| Program Summary | Hours |
|---|---|
| Art Core | 15 |
| General Education Core | 28 |
| *English/Composition* | *6* |
| *Humanities/Communication/Fine Arts* | *6* |
| *Social/Behavioral Sciences* | *9* |
| *Natural Sciences* | *4* |
| *Mathematics* | *3* |
| Other Courses | 22 |
| Program Total | 65 |

**Art Core Requirements 15 Semester Hours**

The following courses are required for the A.F.A. Degree with ART concentration:

| | | | | |
|---|---|---|---|---|
| ART 114 | ART 115 | ART 121 | ART 122 | ART 131 |

**General Education Core Requirements 28 Semester Hours**

**English Composition (6 semester hours)**

1. ENG 111 Expository Writing is required.
2. Select one additional course from:

   ENG 112 Argument-Based Research
   ENG 113 Literature-Based Research
   ENG 114 Professional Research and Reporting

**Humanities/Fine Arts (6 semester hours)**

1. A communication course is required in lieu of one humanities course. COM 231, Public Speaking, is preferred. COM 120 is also acceptable.
2. Select one literature course from the following:

| | | | |
|---|---|---|---|
| ENG 131 | ENG 233 | ENG 242 | ENG 261 |
| ENG 231 | ENG 241 | ENG 243 | ENG 262 |
| ENG 232 | | | |

**Social/Behavioral Sciences (9 semester hours)**

Select three courses from three of the following discipline areas: anthropology, economics, geography, political science, psychology and sociology. **One course must be a history (*) course.**

| | | | | |
|---|---|---|---|---|
| ANT 210 | ECO 252 | HIS 115* | POL 210 | SOC 210 |
| ANT 220 | GEO 111 | HIS 131* | PSY 150 | SOC 213 |
| ANT 240 | GEO 112 | HIS 132* | PSY 237 | SOC 220 |
| ECO 151 | HIS 111* | POL 110 | PSY 239 | SOC 225 |
| ECO 251 | HIS 112* | POL 120 | PSY 241 | SOC 240 |
| | | | PSY 281 | |

**Natural Sciences (4 semester hours)**

Select one course, including laboratory* work, from the astronomy, biology, chemistry, geology, or physics disciplines.

| | | | | |
|---|---|---|---|---|
| AST 111 | BIO 112 | BIO 140A | CHM 151 | GEL 230 |
| AST 11A* | BIO 120 | CHM 132 | CHM 152 | PHY 110 |
| BIO 110 | BIO 130 | CHM 135 | GEL 111 | PHY 110A* |
| BIO 111 | BIO 140 | CHM 136 | GEL 113 | PHY 151 |

**Mathematics (3 semester hours)**

MAT 140 Survey of Mathematics or higher is required.

**Other Required Hours 22 Semester Hours**

1. ACA 115, First-Year Seminar is required
2. Additional Elective Courses (21 semester hours):

Select additional courses to equal 21 SHC from those listed below:

| | | | | |
|---|---|---|---|---|
| ART 117 (3) | ART 264 (3) | ART 284 (3) | DRA 135 (3) | MUS 121 (4) |
| ART 132 (3) | ART 265 (3) | DRA 111 (3) | DRA 140 (3) | MUS 122 (4) |
| ART 171 (3) | ART 266 (3) | DRA 112 (3) | DRA 141 (3) | MUS 131 (1) |
| ART 214* (1) | ART 267 (3) | DRA 120 (3) | DRA 145 (2) | MUS 132 (1) |
| ART 231 (3) | ART 271 (3) | DRA 122 (3) | DRA 250 (2) | MUS 221 (4) |
| ART 240 (3) | ART 281 (3) | DRA 124 (3) | MUS 110 (3) | MUS 222 (4) |
| ART 241 (3) | ART 282 (3) | DRA 126 (3) | MUS 113 (3) | MUS 231 (1) |
| ART 244 (3) | ART 283 (3) | DRA 130 (3) | MUS 114 (3) | MUS 232 (1) |
| | | DRA 131 (3) | | |

**Total Semester Hours 65**

*Students seeking to enter a B.F.A. program should submit a portfolio and, based upon their work, may be accepted into a program at a senior institution.

All courses submitted for graduation require a minimum grade of "C".

Courses selected may vary according to requirements of the pre-major, senior institution.

## Pre-major Articulation Agreements

Pre-major Articulation Agreements are agreements between the 16-member University of North Carolina system, some private colleges and universities, and the 58 North Carolina Community Colleges. The agreements state that if you follow one of the pre-major tracks offered by the college (see list below), have no grade below "C," and are accepted by the senior institution, you will be eligible to apply for admission as a junior in that major. Pre-major articulation agreements are available from Student Services and academic advisors, or on the web at: **www.ga.unc.edu/student_info/caa/**.

CAUTION: You MUST see your advisor before registering for one of these programs!

## Associate in Arts and Associate in S cience Degree Pre-major Tracks

### Associate in Arts

Anthropology

Art Education

Business Administration,

Accounting, Economics, Finance and Marketing

Business Education and Marketing Education

Communication and Communication Studies

Computer Science

Criminal Justice

Elementary Education

English

English Education

Geography

Health Education

History

Information Systems

Liberal Studies

Mass Communication/Journalism

Middle Grade Education

Nursing

Physical Education

Political Science

Psychology

Social Science (Secondary Education)

Social Work

Sociology

Special Education

### Associate in Science

Biology and Biology Education

Chemistry and Chemistry Education

Engineering

Mathematics

Mathematics Education

Elementary and Special Education

## 2+2 Agreements

The 2+2 Agreement allows students who successfully complete two years at A-B Tech to transfer seamlessly into their next two years in a highly acclaimed teacher education program. The 2+2 Agreement outlines which credits transfer and which additional courses an A-B Tech transfer student must complete at the senior institution to earn a bachelor's degree in education. Please see an advisor in the Transfer Advising Center for information about the program and the colleges which offer the 2+2 Agreement.

## Lateral Entry Program

The lateral entry program is an alternative route to teaching for qualified individuals outside of the public education system. The individual is hired by a school system, which recommends the individual for a lateral-entry license. The individual is issued a two-year lateral-entry license. The license may be extended annually for one additional year beyond the two years. Lateral entry teachers must meet testing requirements within the first 2 years of employment and complete all course requirements within a three year period. Please contact Lori Seiderman for information about the program and the college which offers the lateral entry program or contact the instructor for Teacher Education for Secondary Schools in the Arts & Sciences Division.

# Biotechnology

The Biotechnology curriculum is designed to meet the increasing demands for skilled Bioprocessing technicians in various fields of bioprocess manufacturing, pharmaceutical manufacturing, and chemical manufacturing.

Course work emphasizes Bioprocessing, biology, chemistry, mathematics, and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: Bioprocessing technician, research assistant to biologist or chemist; and quality control/quality assurance technician.

Graduates may find employment in various areas of industry and government, including biopharmaceutical processing, Bioprocessing, chemical processing, research and development, sales, and customer service.

## Biotechnology
## Associate in Applied Science Degree (A20100)

| Program Summary | Hours |
|---|---|
| General Education | 19 |
| *English/Communication* | *9* |
| *Humanities/Fine Arts* | *3* |
| *Natural Sciences/Mathematics* | *4* |
| *Social/Behavioral Sciences* | *3* |
| Core Courses | 20 |
| Other Courses | 35-36 |
| Program Total | 74-75 |

Courses requiring a grade of "C" or better: BIO, BTC, CHM, COE.

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| **First Semester (Fall)** | | | | | | |
| ACA | 115 | First-Year Seminar | 0 | 2 | 0 | 1 |
| BIO | 111 | General Biology I | 3 | 3 | 0 | 4 |
| CHM | 151 | General Chemistry I (or CHM 131 and CHM 131A) | 3 | 3 | 0 | 4 |
| ENG | 111 | Expository Writing | 3 | 0 | 0 | 3 |
| MAT | 161 | College Algebra | 3 | 0 | 0 | 3 |
| MAT | 161A | College Algebra Lab | 0 | 2 | 0 | 1 |
| | | | **12** | **10** | **0** | **16** |
| **Second Semester (Spring)** | | | | | | |
| BIO | 112 | General Biology II | 3 | 3 | 0 | 4 |
| CHM | 132 | Organic & Biochemistry | 3 | 3 | 0 | 4 |
| MAT | 151 | Statistics | 3 | 0 | 0 | 3 |
| MAT | 151A | Statistics Lab | 0 | 2 | 0 | 1 |
| | | Humanities/Fine Arts Elective | 3 | 0 | 0 | 3 |
| | | | **12** | **8** | **0** | **15** |
| **Third Semester (Summer)** | | | | | | |
| BIO | 275 | Microbiology | 3 | 3 | 0 | 4 |
| BTC | 181 | Basic Lab Techniques | 3 | 3 | 0 | 4 |
| | | Social/Behavioral Science Elective | 3 | 0 | 0 | 3 |
| | | | **9** | **6** | **0** | **11** |
| **Fourth Semester (Fall)** | | | | | | |
| BTC | 285 | Cell Culture | 2 | 3 | 0 | 3 |
| BTC | 250 | Molecular Genetics | 3 | 0 | 0 | 3 |
| CIS | 110 | Computers Concepts | 2 | 2 | 0 | 3 |
| ENG | 114 | Professional Research & Reporting | 3 | 0 | 0 | 3 |
| BTC | 282 | Biotechnology Fermentation I | 2 | 6 | 0 | 4 |
| | | | **12** | **11** | **0** | **16** |
| **Fifth Semester (Spring)** | | | | | | |
| BTC | 286 | Immunological Techniques | 3 | 3 | 0 | 4 |
| BTC | 270 | Recombinant DNA Tech | 3 | 3 | 0 | 4 |
| BTC | 283 | Biotech Fermentation II | 2 | 6 | 0 | 4 |
| COM | 231 | Public Speaking | 3 | 0 | 0 | 3 |
| | | | **11** | **12** | **0** | **15** |
| **Sixth Semester (Summer)** | | | | | | |
| BTC | 288 | Biotech Lab Experience (or COE 211 Co-op Work Experience) | 0 | 6 | 0 | 2 |
| | | | **0** | **6** | **0** | **2** |
| **Program Totals** | | | **56** | **53** | **0** | **75** |

## Biotechnology Certificate (C20100L1)

The Biotechnology certificate program is designed to develop the fundamental laboratory skills used in the field of Biotechnology. This certificate prepares students for employment opportunities in the biotechnology industry.

| | | | Weekly | | | |
|---|---|---|---|---|---|---|
| | | | **Class Hrs.** | **Lab Hrs.** | **Clinic Hrs.** | **Credit Hrs.** |
| BTC | 181 | Basic Laboratory Techniques | 3 | 3 | 0 | 4 |
| BTC | 282 | Biotech Fermentation I | 2 | 6 | 0 | 4 |
| BTC | 283 | Biotech Fermentation II | 2 | 6 | 0 | 4 |
| BTC | 285 | Cell Culture (or BTC 270 Recombinant DNA Tech) | 2 | 3 | 0 | 3 |
| **Certificate Totals** | | | **9** | **18** | **0** | **15** |

# General Occupational Technology (A55280)

The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree or diploma by taking courses suited for their occupational interests and/or needs.

The curriculum content will be individualized for students according to their occupational interests and needs. A program of study for each student will be selected from non-developmental level courses offered by the College.

Graduates will become more effective workers, better qualified for advancements within their field of employment, and become qualified for a wide range of entry-level employment opportunities. Please see a counselor for additional information.

| A.A.S. Degree Program Summary | Credit Hours |
|---|---|
| General Education | 15 |
| Major Hours | 49 |
| Other Required Hours | 0-7 |
| Program Total | 64-76 |

| Diploma Program Summary | Credit Hours |
|---|---|
| General Education | 6 |
| Major Hours | 30 |
| Other Required Hours | 0-4 |
| Program Total | 36-48 |

# Course Abbreviation Contents

## Academic Related

**ACA 115 Success and Study Skills 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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.

## Accounting

**ACC 120 Principles of Financial Accounting 3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces business decision-making using accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ACC 121 Principles of Managerial Accounting 3 2 4**
Prerequisites: ACC 120
Corequisites: None
Available: Spring
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.

**ACC 129 Individual Income Taxes 2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

**ACC 130 Business Income Taxes 2 2 3**
Prerequisites: ACC 129
Corequisites: None
Available: Spring
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.

**ACC 131 Federal Income Taxes 2 2 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides an overview of federal income taxes for individuals, partnerships, and corporations. Topics include tax law, electronic research and methodologies, and the use of technology for the preparation of individual and business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete federal tax returns for individuals, partnerships, and corporations.

**ACC 140 Payroll Accounting 1 2 2**
Prerequisites: ACC 115 or ACC 120
Corequisites: None
Available: Spring
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.

**ACC 150 Accounting Software Applications 1 2 2**
Prerequisites: ACC 115 or ACC 120
Corequisites: None
Available: Summer
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 software package to solve accounting problems.

**ACC 180 Practices in Bookkeeping 3 0 3**
Prerequisites: ACC 120
Corequisites: None
Available: Spring
This course provides advanced instruction in bookkeeping and record-keeping functions. Emphasis is placed on mastering adjusting entries, correction of errors, depreciation, payroll, and inventory. Upon completion, students should be able to conduct all key bookkeeping functions for small businesses.

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

**ACC 240 Government & Not-for-Profit Accounting 3 0 3**
Prerequisites: ACC 121
Corequisites: None
Available: Spring
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 269 Auditing and Assurance Services 3 0 3**
Prerequisites: ACC 220
Corequisites: None
Available: Spring
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.

## Air Conditioning, Heating, and Refrigeration

***AHR 110 Introduction to Refrigeration 2 6 5**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. Emphasis will be placed on how refrigeration theory, principles and practice are used in the refrigeration (cooling trades). 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 3**
Prerequisites: None
Corequisites: None
Available: Fall
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 4**
Prerequisites: None
Corequisites: None
Available: Fall
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 113 Comfort Cooling 2 4 4**
Prerequisites: None
Corequisites: None
Available: Spring
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 4**
Prerequisites: AHR 110 or AHR 113
Corequisites: None
Available: Fall, Summer
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 2**
Prerequisites: AHR 110
Corequisites: None
Available: As Needed
This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Emphasis will be placed on how refrigeration theory, principles and practice are used in the air conditioning trade. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

***AHR 120 HVACR Maintenance 1 3 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the basic principles of industrial air conditioning and heating systems. Emphasis is placed on preventive maintenance procedures for heating and cooling equipment and related components. Emphasis will be placed upon the service and maintenance of heating equipment. Upon completion, students should be able to perform routine preventive maintenance tasks, maintain records, and assist in routine equipment repairs.

***AHR 125 HVAC Electronics 1 3 2**
Prerequisites: None
Corequisites: AHR 111 or ELC 111
Available: Spring
This course introduces the common electronic control components in HVAC systems. Emphasis is placed on identifying electronic components and their functions in HVAC systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

***AHR 130 HVAC Controls 2 2 3**
Prerequisites: AHR 111 or ELC 111
Corequisites: None
Available: Spring
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 systems controls.

**AHR 160 Refrigerant Certification 1 0 1**
Prerequisites: None
Corequisites: None
Available: Summer
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 170 Heating Lab** **0 3 1**
Prerequisites: None
Corequisites: AHR 112
Available: Fall, Spring
This course provides a laboratory experience in heating technology. Emphasis is placed on providing practical experience in the fundamentals of heating. Upon completion, students should be able to demonstrate an understanding of electric, oil, and gas fueled heating systems. (Pending approval of the NCCCS Curriculum Review Committee).

**AHR 172 Heat Pump Lab** **0 3 1**
Prerequisites: None
Corequisites: AHR 114
Available: Fall, Summer
This course provides a laboratory experience in heat pump technology. Emphasis is placed on providing practical experience with air source and water heat pumps. Upon completion, students should be able to demonstrate an understanding of heat pump year round comfort systems. (Pending approval of the NCCCS Curriculum Review Committee).

***AHR 210 Residential Building Code** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

***AHR 212 Advanced Comfort Systems** **2 6 4**
Prerequisites: AHR 114
Corequisites: None
Available: As Needed
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. Hydronic (hot water) and steam heating systems will also be studied.

## Anthropology

**ANT 210 General Anthropology** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**ANT 220 Cultural Anthropology** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**ANT 240 Archaeology** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

## Architecture

**ARC 111 Intro to Arch Technology** **1 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

**ARC 112 Construction Materials and Methods** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces construction materials and their methodologies. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.

**ARC 113 Residential Arch Tech** **1 6 3**
Prerequisites: ARC 111
Corequisites: ARC 112
Available: Spring
This course covers intermediate residential working drawings. Topics include residential plans, elevations, sections, details, schedules, and other related topics. Upon completion, students should be able to prepare a set of residential working drawings that are within accepted architectural standards.

**ARC 131 Building Codes** **2 2 3**
Prerequisites: ARC 112 or CAR 111
Corequisites: None
Available: As Needed
This course covers the methods of researching building codes for specific projects. Topics include residential and commercial building codes. Upon completion, students should be able to determine the code constraints governing residential and commercial projects.

**ARC 230 Environmental Systems** **3 3 4**
Prerequisites: ARC 111 and MAT 121, MAT 151, MAT 161, MAT 171, or MAT 175
Corequisites: None
Available: Fall
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 perform related calculations.

**ARC 240 Site Planning** **2 2 3**
Prerequisites: ARC 111 or LAR 111
Corequisites: None
Available: As Needed
This course introduces the principles of site planning, grading plans, and earthwork calculations. Topics include site analysis, site work, site utilities, cut and fill, soil erosion control, and other related topics. Upon completion, students should be able to prepare site development plans and details and perform cut and fill calculations.

**ARC 261 Solar Technology** **1 2 2**
Prerequisites: ARC 111
Corequisites: None
Available: As Needed
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.

## Art

**ART 111 Art Appreciation** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

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

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

**ART 121 Design I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 122 Design II** **0 6 3**
Prerequisites: ART 121
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 131 Drawing I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 132 Drawing II** **0 6 3**
Prerequisites: ART 131
Corequisites: None
Available: Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 171 Computer Art I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 214 Portfolio and Resume** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers resume writing, interview skills, and the preparation and presentation of an art portfolio. Emphasis is placed on the preparation of a portfolio of original artwork, the preparation of a photographic portfolio, approaches to resume writing, and interview techniques. Upon completion, students should be able to mount original art for portfolio presentation, photograph and display a professional slide portfolio, and write an effective resume. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ART 231 Printmaking I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces printmaking: its history, development techniques, and processes. Emphasis is placed on basic applications with investigation into image source and development. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ART 240 Painting I** **0 6 3**
Prerequisites: ART 121 or ART 131
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 241 Painting II** **0 6 3**
Prerequisites: ART 240
Corequisites: None
Available: Spring
This course provides a continuing investigation of the materials, processes, and techniques of painting. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 244 Watercolor** **0 6 3**
Prerequisites: ART 1221 or ART 131
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 260 Photography Appreciation** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the origins and historical development of photography. Emphasis is placed on the study of composition and history of photography as an art form. Upon completion, students should be able to recognize and produce, using color transparencies, properly exposed, well-composed photographs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ART 261 Photography I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 262 Photography II** **0 6 3**
Prerequisites: Art 261
Corequisites: None
Available: Spring
This course introduces the creative manipulation of alternative photographic materials and processes such as toning, hand coloring, infrared, and multiple exposure. Emphasis is placed on personal vision and modes of seeing. Upon completion, students should be able to create properly exposed images using a variety of photographic materials and processes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ART 264 Digital Photography I** **1 4 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces digital photographic equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 265 Digital Photography II** **1 4 3**
Prerequisites: Art 264
Corequisites: None
Available: Spring
This course provides exploration of the concepts and processes of photo manipulation through complex composite images, special effects, color balancing and image/text integration. Emphasis is placed on creating a personal vision and style. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 266 Videography I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 271 Computer Art II** **0 6 3**
Prerequisites: Art 171
Corequisites: None
Available: Spring
This course includes advanced computer imaging techniques. Emphasis is placed on creative applications of digital technology. Upon completion, students should be able to demonstrate command of computer systems and applications to express their personal vision. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ART 281 Sculpture I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 a variety of sculptural approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 282 Sculpture II** **0 6 3**
Prerequisites: ART 281
Corequisites: None
Available: Spring
This course builds on the visual and technical skills learned in ART 281. Emphasis is placed on developing original solutions to sculptural problems in a variety of media. Upon completion, students should be able to express individual ideas using the techniques and materials of sculpture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 283 Ceramics I** **0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides an introduction to three-dimensional design principles using the medium of clay. Emphasis is placed on fundamentals of forming, surface design, glaze application, and firing. Upon completion, students should be able to demonstrate skills in slab and coil construction, simple wheel forms, glaze technique, and creative expression. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ART 284 Ceramics II** **0 6 3**
Prerequisites: ART 283
Corequisites: None
Available: Spring
This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to demonstrate a high level of technical competence in forming and glazing with a development of three-dimensional awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

## Astronomy

**AST 111 Descriptive Astronomy** **3 0 3**
Prerequisites: None
Corequisites: AST 111A
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**AST 111A Descriptive Astronomy Lab** **0 2 1**
Prerequisites: None
Corequisites: AST 111
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

## Automation Training

***ATR 112 Introduction to Automation** **2 3 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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 282 Robotics and CIM** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers robotics and CIM. Topics include application, programming, and maintenance of robotic devices and the relationship between robotics and CIM. Upon completion, students should be able to safely program, operate, and maintain robots and understand the relationship between robotics and CIM.

## Automotive

***AUT 110 Introduction to Automotive Technology** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers work-place safety, hazardous material and environmental regulations and procedures, proper use of hand tools, use of service information resources, and the basic concepts, systems and terms of automotive technology. Topics include familiarization with vehicle systems along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe safety and environmental procedures, terms associated with automobiles, identify and use basic tools and shop equipment.

***AUT 114 Safety and Emissions** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the laws, procedures and specifications needed to perform a North Carolina State Safety and Emissions inspection. Topics include brake, steering and suspension, lighting, horn, windshield wiper, tire, mirrors, and emission control devices inspection. Upon completion, students should be able to perform complete and thorough North Carolina State Safety and Emissions inspections.

***AUT 116 Engine Repair** **2 3 3**
Prerequisites: None
Corequisites: AUT 116A
Available: Fall, Spring
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, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

***AUT 116A Engine Repair Lab** **0 3 1**
Prerequisites: None
Corequisites: AUT 116
Available: Fall, Spring
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

***AUT 141 Suspension and Steering Systems** **2 3 3**
Prerequisites: None
Corequisites: AUT 141A
Available: Fall, Summer
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 identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.

***AUT 141A Suspension and Steering Systems Lab** **0 3 1**
Prerequisites: None
Corequisites: AUT 141
Available: Fall, Summer
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.

***AUT 151 Brake Systems** **2 3 3**
Prerequisites: None
Corequisites: AUT 151A
Available: Fall, Spring
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 151A Brake Systems Lab** **0 3 1**
Prerequisites: None
Corequisites: AUT 151
Available: Fall, Spring
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

***AUT 161 Basic Automotive Electricity 4 3 5**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, and alternators. Topics include Ohm's Law, Circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and basic electrical concerns.

***AUT 163 Advanced Automotive Electricity/Electronics 2 3 3**
Prerequisites: AUT 161
Corequisites: None
Available: Fall, Spring
This course covers basic electronic theory, wiring diagrams, test equipment, and diagnosis /repair/replacement of electronics, lighting, gauges, driver information, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, lighting, gauges, accessories, modules, and basic electronic concerns.

***AUT 171 Automotive Climate Control 2 4 4**
Prerequisites: None
Corequisites: None
Available: Summer
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 181 Engine Performance 1 2 3 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to today's vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion students should be able to describe operation of and diagnose/repair basic ignition, fuel and emission related drivability problems using appropriate test equipment and service information.

***AUT 221 Automatic Transmissions/Transaxles 2 3 3**
Prerequisites: None
Corequisites: AUT 221A
Available: Spring
This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

***AUT 221A Automatic Transmissions/Transaxles Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 221
Available: Spring
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program and covers diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains.

***AUT 231 Manual Trans/Transaxles and Drivetrains 2 3 3**
Prerequisites: None
Corequisites: AUT 231A
Available: Fall
This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

***AUT 231A Manual Trans/Transaxles and Drivetrains Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 231
Available: Fall
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to diagnose and repair manual drive trains.

***AUT 281 Advanced Engine Performance 2 2 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
This course utilizes service information and specialized test equipment to diagnose and 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 diagnosis and repair.

## Biology

**BIO 090 Foundations of Biology 3 2 4**
Prerequisites: None
Corequisites: RED 090
Available: As Needed
This course introduces basic biological concepts. Topics include basic biochemistry, cell structure and function, interrelationships among organisms, scientific methodology, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level biology courses.

**BIO 094 Concepts of Human Biology 3 2 4**
Prerequisites: None
Corequisites: ENG 095 or RED 090
Available: As Needed
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 110 Principles of Biology 3 3 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**BIO 111 General Biology I 3 3 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**BIO 112 General Biology II 3 3 4**
Prerequisites: BIO 111
Corequisites: None
Available: Fall, Spring
This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**BIO 120 Introductory Botany 3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**BIO 130 Introductory Zoology 3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
Available: Fall, Spring
This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**BIO 140 Environmental Biology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**BIO 140A Environmental Biology Lab 0 3 1**
Prerequisites: None
Corequisites: BIO 140
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**BIO 143 Field Biology Minicourse 1 2 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces the biological and physical components of a field environment. Emphasis is placed on a local field environment with extended field trips to other areas. Upon completion, students should be able to demonstrate an understanding of the biological and physical components of the specific biological environment. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BIO 155 Nutrition 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BIO 161 Intro to Human Biology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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 4 2 5**
Prerequisites: RED 090
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 168 Anatomy and Physiology I 3 3 4**
Prerequisites: RED 090
Corequisites: None
Available: Fall, Spring, Summer
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, and nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BIO 169 Anatomy and Physiology II 3 3 4**
Prerequisites: BIO 168
Corequisites: None
Available: Fall, Spring, Summer
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement transferability as a premajor and/or elective course requirement.

**BIO 173 Microbes in World Affairs 3 0 3**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
Available: As Needed
This course provides an integrated and comprehensive study of the microbial world and its influence on global events and human affairs. Topics include plant and animal diseases caused by viral, bacterial, and fungal pathogens and their impacts on history, industrial microbiology, biotechnology, and microbial ecology. Upon completion, students should be able to demonstrate an understanding of the importance of microbes in human and world affairs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**BIO 175 General Microbiology 2 2 3**
Prerequisites: Select One: BIO 110, BIO 111, BIO 163, BIO 165, BIO 168
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 223 Field Botany 2 3 3**
Prerequisites: BIO 112
Corequisites: None
Available: Spring
This course provides a field and laboratory study of local flora. Emphasis is placed on local flora classification, identification, and ecology by the use of keys and field studies. Upon completion, students should be able to use keys for the classification and identification of local flora and to demonstrate an understanding of plant ecology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**BIO 224 Local Flora Spring 1 2 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides an introduction to the identification of native plants. Emphasis is placed on spring wild flowers. Upon completion, students should be able to identify a variety of spring wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 225 Local Flora Summer 1 2 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course provides an introduction to the identification of native plants. Emphasis is placed on summer wild flowers. Upon completion, students should be able to identify a variety of summer wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 226 Local Flora Fall 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides an introduction to the identification of native plants. Emphasis is placed on fall wild flowers. Upon completion, students should be able to identify a variety of fall wild flowers and native plants. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 271 Pathophysiology 3 0 3**
Prerequisites: Select One: BIO 163, BIO 166, BIO 169
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability pre-major and/or elective course requirement.

**BIO 275 Microbiology 3 3 4**
Prerequisites: Select One: BIO 110, BIO 112, BIO 163, BIO 165, BIO 168
Corequisites: None
Available: Fall, Spring, Summer
This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## Baking and Pastry Arts

***BPA 120 Petit Fours & Pastries 1 4 3**
Prerequisites: CUL 110 and CUL 160
Corequisites: None
Available: Spring
This course introduces the basic principles of the preparation of petit fours and individual dessert pastries. Emphasis is placed on traditional and contemporary petit fours and pastries, utilizing updated production methods. Upon completion, students should be able to produce individual pastries and petit fours for buffet and special event settings.

***BPA 130 European Cakes and Tortes 1 4 3**
Prerequisites: CUL 110 and CUL 160
Corequisites: None
Available: Spring
This course introduces the production of a wide variety of classical and modern cakes suitable for restaurants, retail shops and large-scale production. Emphasis is placed on advanced techniques of mixing, filling, glazing and icing. Upon completion, students should be able to assemble and decorate a variety of cakes/tortes, including Dobos, Sacher, and Linzer tortes and Black Forest cake.

***BPA 150 Artisan & Specialty Bread 1 6 4**
Prerequisites: CUL 110, CUL 142 and CUL 160
Corequisites: None
Available: Spring
This course provides an advanced study in the art and craft of bread making. Topics include pertinent formulas and techniques associated with naturally leavened loaves, hearth breads, focaccia, flat breads, and other breads utilizing a variety of grains. Upon completion, students should be able to prepare artisan and specialty breads that meet or exceed the expectations of restaurant and retail publics.

***BPA 210 Cake Design & Decorating 1 4 3**
Prerequisites: CUL 110 and CUL 160
Corequisites: None
Available: Fall
This course covers advanced concepts in the design and decoration of wedding cakes and other specialty cakes. Topics include baking, filling and assembling cakes; cake design; and finishing techniques utilizing gum paste, fondant, and royal icing; and advanced piping skills. Upon completion, students should be able to design, create and finish wedding and specialty cakes.

***BPA 220 Confection Artistry 1 6 4**
Prerequisites: BPA 240, CUL 110 and CUL 160
Corequisites: None
Available: Spring
This course introduces the principles and techniques of decorative sugar work and confectionary candy. Topics include nougat, marzipan modeling, pastillage and cocoa painting, confection candy and a variety of sugar techniques including blown, spun, poured and pulled. Upon completion, students should be able to prepare edible centerpieces and confections to enhance dessert buffets and plate presentations.

***BPA 230 Chocolate Artistry 1 4 3**
Prerequisites: BPA 240, CUL 110 and CUL 160
Corequisites: None
Available: Spring
This course provides a study in the art and craft of chocolate. Topics include chocolate tempering, piping, molding; decorative work associated with cakes and centerpieces; and the candy production techniques of filling, enrobing and dipping. Upon completion, students should be able to properly temper chocolate, and produce a variety of chocolate candies and decorative elements for garnishing desserts.

***BPA 240 Plated Desserts 1 4 3**
Prerequisites: BPA 120, BPA 130, CUL 110, CUL 160, and COE 112
Corequisites: None
Available: Fall
This course provides a study in the elements and principles of design as it relates to plated desserts. Topics include plate composition, portioning, flavor combinations, textures, eye appeal, balance, color harmony and plate decorating techniques such as stenciling, chocolate striping, and plate painting. Upon completion, students should be able to demonstrate competence in combining a variety of dessert components enhanced with plate decorating techniques.

***BPA 250 Dessert & Bread Production 1 8 5**
Prerequisites: COE 112, CUL 110 and CUL 160
Corequisites: None
Available: Fall
This course is designed to merge artistry and innovation with the practical baking and pastry techniques utilized in a production setting. Topics include quantity bread and roll-in dough production, plated and platter presentations, and seasonal/themed product utilization with an emphasis on cost effectiveness. Upon completion, students should be able to plan and prepare breads and desserts within a restaurant environment and determine production costs and selling prices.

***BPA 260 Pastry & Baking Marketing** **2 2 3**
Prerequisites: BPA 210, BPA 240, BPA 250, and COE 112
Corequisites: BPA 220 and BPA 230
Available: Spring
This course examines the marketing concepts and merchandising trends utilized in bakery and pastry operations. Emphasis is placed on menu planning, pricing products and strategies, resale and wholesale distribution methods, legal implications, and advertising techniques. Upon completion, students should be able to create a marketing plan that will serve as a basis for a capstone experience.

## Blueprint Reading

**BPR 111 Blueprint Reading** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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.

**BPR 121 Blueprint Reading: Mechanical** **1 2 2**
Prerequisites: BPR 111 or MAC 131
Corequisites: None
Available: Spring
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.

**BPR 130 Blueprint Reading/Construction** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.

**BPR 135 Schematics and Diagrams** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces schematics and diagrams used in a variety of occupations. Topics include interpretation of wiring diagrams, assembly drawings, exploded views, sectional drawings, and service manuals, specifications, and charts. Upon completion, students should be able to research and locate components and assemblies denoting factory specifications and requirements from service and repair manuals.

## Biotechnology

**BTC 181 Basic Lab Techniques** **3 3 4**
Prerequisites: Enrollment in the Biotechnology Program or Dept. Approval
Corequisites: None
Available: Summer
This course introduces the basic skills and knowledge necessary in a biological or chemical laboratory. Emphasis is placed on good manufacturing practices, safety, solution preparation, and equipment operation and maintenance following standard operating procedures. Upon completion, students should be able to prepare and perform basic laboratory procedures using labware, solutions, and equipment according to prescribed protocols.

**BTC 250 Principles of Genetics** **3 0 3**
Prerequisites: BIO 111
Corequisites: None
Available: Fall
This course covers the basic principles of molecular genetics. Topics will include Mendelian inheritance, DNA replication, RNA transcription, translation of proteins, chromosome structure, and evolution. Upon completion, students should be able to demonstrate knowledge of molecular genetics and principles of heredity.

**BTC 270 Recombinant DNA Tech** **3 3 4**
Prerequisites:(BTC 250 or BIO 250) and BTC 181
Corequisites: None
Available: Spring
This course covers basic methods in biotechnology for the manipulation of nucleic acids. Emphasis is placed on topics concerning techniques used in recombinant DNA technology, including PCR, restriction digests, mapping, cloning, and forensics. Upon completion, students should have an understanding of the theory, practice, and application of recombinant DNA techniques.

**BTC 282 Biotech Fermentation I** **2 6 4**
Prerequisites: BTC 181
Corequisites: None
Available: Fall
This course provides an introduction to fermentor classification and configuration for small-scale laboratory processes utilizing prokaryotic organisms to demonstrate techniques used in fermentation procedures. Topics include Batch Process Records, fermentor design, fermentation theory, and medium formulation as well as techniques used for cell harvesting, cell disruption and fractionation methods. Upon completion, students should be able to set up a fermentor; grow prokaryotic cells; and isolate and collect various fractions derived from fermentation.

**BTC 283 Biotech Fermentation II** **2 6 4**
Prerequisites: BTC 282
Corequisites: None
Available: Spring
This course introduces techniques for recovery of fermentation products to include removal of insolubles, product isolation, high resolution techniques and product polishing using eukaryotic cells. Topics include filter design, separation processes such as flocculation, coagulation, distillation, liquid-liquid extraction, different types of chromatography and emerging technologies for product recovery. Upon completion, students should be able to perform eukaryotic cell cultivation and various separation techniques used in small-scale fermentation with an understanding of scale-up procedures.

**BTC 285 Cell Culture** **2 3 3**
Prerequisites: BIO 175 or BIO 275
Corequisites: None
Available: Fall
This course introduces the theory and practices required to successfully initiate and maintain plant and animal cell cultures. Topics include aseptic techniques, the growth environment, routine maintenance of cell cultures, specialized culture techniques, and various applications. Upon completion, students should be able to demonstrate the knowledge and skills required to grow, maintain, and manipulate cells in culture.

**BTC 286 Immunological Techniques 3 3 4**
Prerequisites: BTC 285 or Department Approval
Corequisites: None
Available: Spring
This course covers the principles and practices of modern immunology, including the interactions between the various cellular and chemical components of the immune response. Topics include antigens, humoral immunity, cellular immunity, complement, immunological assays, and hybridoma use and production. Upon completion, students should be able to discuss the immune response, perform immunological assays, and make monoclonal antibody-producing hybridomas.

**BTC 288 Biotech Lab Experience 0 6 2**
Prerequisites: BIO 250 or BTC 270, and BTC 281, BTC 285, or BTC 286
Corequisites: None
Available: Summer
This course provides an opportunity to pursue an individual laboratory project in biotechnology. Emphasis is placed on developing, performing, and maintaining records of a project in a specific area of interest. Upon completion, students should be able to complete the project with accurate records and demonstrate an understanding of the process.

## Business Administration

**BUS 110 Introduction to Business 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BUS 115 Business Law I 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BUS 116 Business Law II 3 0 3**
Prerequisites: BUS 115
Corequisites: None
Available: As Needed
This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

**BUS 135 Principles of Supervision 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the workplace.

***BUS 137 Principles of Management 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BUS 147 Business Insurance 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course surveys the basic concepts of risk management. Topics include principles and applications of health, property, life, and casualty insurance. Upon completion, students should be able to evaluate different insurance needs and assist an organization in acquiring adequate insurance coverage.

**BUS 151 People Skills 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the basic concepts of identity and communication in the business setting. Topics include self-concept, values, communication styles, feelings and emotions, roles versus relationships, and basic assertiveness, listening, and conflict resolution. Upon completion, students should be able to distinguish between unhealthy, self-destructive, communication patterns and healthy, non-destructive, positive communication patterns.

**BUS 153 Human Resources Management 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

**BUS 175 Contract Negotiations 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers theory, strategies, techniques and tactics for negotiating contracts, and principles and practices of negotiations for government, corporate or institutional procurements. Topics include preparation and conduct of negotiations and methods of dealing with situations under different types of negotiations. Upon completion, students should be able to effectively negotiate contracts.

**BUS 217 Employment Law and Regulations 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organization policy for compliance and assure that decisions are not contrary to law.

**BUS 225 Business Finance** **2 2 3**
Prerequisites: ACC 120
Corequisites: None
Available: As Needed
This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

**BUS 234 Training and Development** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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 2**
Prerequisites: ACC 120, BUS 115, BUS 137, MKT 120 and either ECO 151, ECO 251 or ECO 252
Corequisites: None
Available: Spring
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 workplace.

**BUS 240 Business Ethics** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the work force and society.

**BUS 255 Org Behavior in Business** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the impact of different management practices and leadership styles on worker satisfaction and morale, organizational effectiveness, productivity, and profitability. Topics include a discussion of formal and informal organizations, group dynamics, motivation, and managing conflict and change. Upon completion, students should be able to analyze different types of interpersonal situations and determine an appropriate course of action.

**BUS 256 Recruit Select and Per Plan** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining employees 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. The course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

**BUS 258 Compensation and Benefits** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

**BUS 259 HRM Applications** **3 0 3**
Prerequisites: BUS 217, BUS 234, BUS 256, and BUS 258
Corequisites: None
Available: Spring
This course provides students in the Human Resources Management concentration the opportunity to reinforce their learning experiences from preceding HRM courses. Emphasis is placed on application of day-to-day HRM functions by completing in-basket exercises and through simulations. Upon completion, students should be able to determine the appropriate actions called for by typical events that affect the status of people at work. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

**BUS 260 Business Communication** **3 0 3**
Prerequisites: CIS 110 and ENG 111
Corequisites: None
Available: As Needed
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 workplace.

**BUS 270 Professional Development** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides basic knowledge of self-improvement techniques as related to success in the professional world. Topics include positive human relations, job-seeking skills, and projecting positive self-image. Upon completion, students should be able to demonstrate competent personal and professional skills necessary to get and keep a job.

**BUS 280 REAL Small Business** **4 0 4**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces hands-on techniques and procedures for planning and opening a small business, including the personal qualities needed for entrepreneurship. Emphasis is placed on market research, finance, time management, and day-to-day activities of owning/operating a small business. Upon completion, students should be able to write and implement a viable business plan and seek funding.

## Cabinetmaking

**CAB 111 Cabinetmaking I** **4 9 7**
Prerequisites: None
Corequisites: ISC 115
Available: Fall, Spring
This course introduces wood technology, materials, purchasing, estimating, design considerations, and cabinet construction. Topics include wood identification and use, hand tools, safe machine operation, glue and clamping, abrasives, wood joinery, kitchen and bath layout, laminates, and finishing techniques. Upon completion, students should be able to select and process materials; make sound production decisions; and design, lay out, construct, and install cabinets. This is a diploma-level course.

**CAB 119 Cabinetry/Millworking** **4 9 7**
Prerequisites: None
Corequisites: ISC 115
Available: Spring
This course introduces wood technology, cabinet construction, and mill-working. Topics include safety, hand/power tools, wood identification and use, wood joinery, abrasives, cabinet layout, laminates, finishing techniques, and other related topics. Upon completion, students should be able to select and process materials using accurate drawings and cut lists and install finished products.

## Carpentry

**CAR 110 Introduction to Carpentry** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods.

**CAR 111 Carpentry I** **3 15 8**
Prerequisites: None
Corequisites: ISC 115
Available: Fall
This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. This is a diploma-level course.

**CAR 112 Carpentry II** **3 15 8**
Prerequisites: CAR 111
Corequisites: None
Available: Fall
This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. This is a diploma-level course.

**CAR 113 Carpentry III** **3 9 6**
Prerequisites: CAR 111
Corequisites: None
Available: Summer
This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinetry, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. This is a diploma-level course.

**CAR 114 Residential Building Codes** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers building codes and the requirements of state and local construction regulations. Emphasis is placed on the minimum requirements of the North Carolina building codes related to residential structures. Upon completion, students should be able to determine if a structure is in compliance with North Carolina building codes.

**CAR 115 Residential Planning/Estimating** **3 0 3**
Prerequisites: BPR 130
Corequisites: None
Available: Fall
This course covers project planning, management, and estimating for residential or light commercial buildings. Topics include planning and scheduling, interpretation of working drawings and specifications, estimating practices, and other related topics. Upon completion, students should be able to perform quantity take-offs and cost estimates.

## Computed Tomography

**CAT 210 CT Physics & Equipment** **3 0 0 3**
Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs
Corequisites: None
Available: Fall
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.

**CAT 211 CT Procedures** **4 0 0 4**
Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs
Corequisites: CAT 210
Available: Fall
This course is designed to cover specialized patient care, cross-sectional anatomy, contrast media, and scanning procedures in computed tomography. Emphasis is placed on patient assessment and monitoring, contrast agents' use, radiation safety, methods of data acquisition, and identification of cross-sectional anatomy. Upon completion, students should be able to integrate all facets of the imaging procedures in computed tomography.

**CAT 225 CT Clinical Practicum 0 0 15 5**
Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs
Corequisites: None
Available: Fall
This course provides the opportunity to apply knowledge gained from classroom instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

**CAT 226 CT Clinical Practicum 0 0 18 6**
Prerequisites: Enrollment in CT/MRI diploma or CT certificate programs
Corequisites: None
Available: Fall, Spring
This course provides the opportunity to apply knowledge gained from classroom instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

## Cyber Crime

**CCT 110 Introduction to Cyber Crime 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces and explains the various types of offenses that qualify as cyber crime activity. Emphasis is placed on identifying cyber crime activity and the response to these problems from both the private and public domains. Upon completion, students should be able to accurately describe and define cyber crime activities and select an appropriate response to deal with the problem.

**CCT 121 Computer Crime Investigation 3 2 4**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the fundamental principles of computer crime investigation processes. Topics include crime scene/incident processing, information gathering techniques, data retrieval, collection and preservation of evidence, preparation of reports and court presentations. Upon completion, students should be able to identify cyber crime activity and demonstrate proper investigative techniques to process the scene and assist in case prosecution.

**CCT 231 Technology Crimes and Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers the applicable technological laws dealing with the regulation of cyber security and criminal activity. Topics include an examination of state, federal and international laws regarding cyber crime with an emphasis on both general and North Carolina statutes. Upon completion, students should be able to identify the elements of cyber crime activity and discuss the trends of evolving laws.

## Computer Engineering Technology

**CET 111 Computer Upgrade/Repair I 2 3 3**
Prerequisites: MAT 060, RED 080
Corequisites: None
Available: As Needed
This course covers repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include CPU/memory/bus identification, disk subsystems, hardware/software installation/configuration, common device drivers, data recovery, system maintenance, and other related topics. Upon completion, students should be able to safely repair and/or upgrade computer systems to perform within specifications.

**CET 125 Voice and Data Cabling 2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, including signal transmission. Topics include network design documentation, part list set-up, pulling and mounting cable, cable management, wiring closets, patch panel installation and termination including cable testing. Upon completion, students should be able to understand documentation, design, installation and safety issues associated with voice and data cabling.

**CET 161 Procedural Programming 2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course introduces procedural programming for engineering applications. Emphasis is placed on event-driven programming methods, including creating and manipulating data, sequencing, iteration, and blocking of code. Upon completion, students should be able to design, code, test and debug at a beginning level.

**CET 211 Computer Upgrade/Repair II 2 3 3**
Prerequisites: CET 111
Corequisites: None
Available: As Needed
This course covers concepts of repair service, and upgrade of computers and peripherals in preparation for industry certification. Topics may include resolving resource conflicts and system bus specifications, configuration and troubleshooting peripherals, operating system configuration and optimization, and other related topics. Upon completion, students should be able to identify and resolve system conflicts and optimize system performance.

**CET 212 Integrated Manufacturing Systems 1 3 2**
Prerequisites: ELN 237 and (CET 161 or CSC 143)
Corequisites: None
Available: Spring, Summer
This course covers computer topics related to integrated manufacturing systems common to current manufacturing facilities. Topics include robot programming, automated control systems, PLCs, data communication, and networking in an integrated manufacturing environment, and other related topics. Upon completion, students should be able to program robots using teaching pendants and troubleshoot and maintain network installations related to integrated manufacturing systems.

# Chemistry

**CHM 092 Fundamentals of Chemistry 3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

**CHM 121 Foundations of Chemistry 3 0 3**
Prerequisites: None
Corequisites: CHM 121A
Available: As Needed
This course is designed for those who have no previous high school chemistry or a grade of C or less in high school chemistry. Topics include matter, structure of the atom, nomenclature, chemical equations, bonding and reactions; mathematical topics include measurements, scientific notation, and stoichiometry. Upon completion, students should be able to demonstrate an understanding of chemical concepts and an ability to solve related problems in subsequent chemistry courses.

**CHM 121A Foundations of Chemistry Laboratory 0 2 1**
Prerequisites: None
Corequisites: CHM 121
Available: As Needed
This course is a laboratory for CHM 121. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 121. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 121.

**CHM 130 General, Organic, and Biochemistry 3 0 3**
Prerequisites: High school chemistry or CHM 092
Corequisites: CHM 130A
Available: Fall, Spring
This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 130A General, Organic, and Biochemistry Lab 0 2 1**
Prerequisites: None
Corequisites: CHM 130
Available: Fall, Spring
This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 132 Organic and Biochemistry 3 3 4**
Prerequisites: CHM 131 and 131A or CHM 151
Corequisites: None
Available: Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 135 Survey of Chemistry I 3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an introduction to inorganic chemistry. Emphasis is placed on measurement, atomic structure, bonding, molecular geometry, nomenclature, reactions, the mole concept, stoichiometric calculations, states of matter, and the gas laws. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 136 Survey of Chemistry II 3 2 4**
Prerequisites: CHM 135
Corequisites: None
Available: As Needed
This course is a continuation of CHM 135 with further study of inorganic reactions and an introduction to organic, biological, and nuclear chemistry. Topics include solutions, acid-base theory, redox reactions, chemical kinetics, organic chemistry, biochemistry, and nuclear chemistry. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 151 General Chemistry I 3 3 4**
Prerequisites: High school chemistry or CHM 092
Corequisites: MAT 161
Available: Fall, Spring, Summer
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 152 General Chemistry II** **3 3 4**
Prerequisites: CHM 151
Corequisites: None
Available: Fall, Spring, Summer
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 251 Organic Chemistry I** **3 3 4**
Prerequisites: CHM 152
Corequisites: None
Available: Fall
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 252 Organic Chemistry II** **3 3 4**
Prerequisites: CHM 251
Corequisites: None
Available: Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 265 Instrumental Analysis** **2 6 4**
Prerequisites: CHM 251
Corequisites: None
Available: As Needed
This course introduces modern instrumental and chromatographic methods. Topics include methods of chromatographic, spectral, and electrochemical analysis which will provide theory of instrumentation, interpretation, and statistical evaluation of analytical data with practical applications. Upon completion, students should be able to perform quantitative analytical procedures using modern instrumentation. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 271 Biochemical Principles** **3 0 3**
Prerequisites: CHM 252
Corequisites: None
Available: As Needed
The course covers fundamental principles of biochemistry. Topics include structures, properties, reactions, and mechanisms of biomacromolecules including amino acids, peptides, proteins, carbohydrates and nucleic acids, enzymatic metabolic pathways, and biochemical genetics. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical processes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirements.

## Information Systems

**CIS 110 Introduction to Computers** **2 2 3**
Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)
Corequisites: None
Available: Fall, Spring, Summer
This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. Microsoft Office will be used in this course; this includes Word, Excel, Access and PowerPoint. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

**CIS 111 Basic PC Literacy** **1 2 2**
Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)
Corequisites: None
Available: As Needed
This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

**CIS 113 Computer Basics** **0 2 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces basic computer usage for non-computers majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate basic computer applications.

**CIS 115 Intro to Programming and Logic** **2 3 3**
Prerequisites: Select One: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
Available: Fall, Spring
This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

# Civil Engineering

**CIV 110 Statics/Strength of Materials 2 6 4**
Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
Available: Fall, Spring
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 2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
Available: Fall, Spring
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 1 6 3**
Prerequisites: DFT 119, DFT 151, or EGR 125
Corequisites: None
Available: Fall, Spring
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.

**CIV 210 Engineering Materials 1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
Available: Summer
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.

**CIV 212 Environmental Planning 2 3 3**
Prerequisites: CIV 211
Corequisites: None
Available: Spring
This course covers water and wastewater technology, erosion and sedimentation control, and other related topics. Topics include collection, treatment, and distribution of water and wastewater and erosion and sedimentation control law. Upon completion, students should be able to demonstrate knowledge of water and wastewater systems and prepare erosion and sedimentation control plans.

**CIV 215 Highway Technology 1 3 2**
Prerequisites: SRV 111
Corequisites: CIV 211
Available: Fall
This course introduces the essential elements of roadway components and design. Topics include subgrade and pavement construction, roadway drawings and details, drainage, superelevation, and N.C. Department of Transportation Standards. Upon completion, students should be able to use roadway drawings and specifications to develop superelevation, drainage, and general highway construction details.

**CIV 220 Basic Structural Concepts 1 3 2**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
Available: Fall
This course covers the historical perspective of structures as well as types, materials, common elements, and mechanical principles of structures. Topics include basic structure shapes, advantages and disadvantages of standard building materials, application of structural concepts, and other related topics. Upon completion, students should be able to demonstrate an understanding of basic structural concepts.

**CIV 221 Steel and Timber Design 2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
Available: Spring
This course introduces the basic elements of steel and timber structures. Topics include the analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures.

**CIV 222 Reinforced Concrete 2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
Available: Fall, Spring
This course introduces the basic elements of reinforced concrete and masonry structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls; load-bearing masonry walls; and ACI manuals and codes. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and masonry elements and utilize appropriate ACI publications.

**CIV 230 Construction Estimating 2 3 3**
Prerequisites: ARC 111, CIS 110, CIS 111, or EGR 115
Corequisites: None
Available: Fall, Spring
This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.

**CIV 240 Project Management 2 3 3**
Prerequisites: ARC 111 or EGR 115
Corequisites: None
Available: Fall, Summer
This course introduces construction planning and scheduling techniques and project management software. Topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.

**CIV 250 Civil Engineering Technology Project 1 3 2**
Prerequisites: Department Chair Approval
Corequisites: None
Available: Fall, Spring
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.

## Criminal Justice

**CJC 100 Basic Law Enforcement Training 9 30 19**
Prerequisites: RED 080
Corequisites: None
Available: Fall, Spring
This course covers the skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Emphasis is placed on topics and areas as defined by the North Carolina Administrative Code. Upon completion, students should be able to demonstrate competence in the topics and areas required for the state comprehensive examination. This is a certificate-level course.

**CJC 111 Introduction to Criminal Justice 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CJC 112 Criminology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

**CJC 114 Investigative Photography 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.

**CJC 120 Interviews/Interrogations 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

**CJC 121 Law Enforcement Operations 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. There will be an emphasis on practical skills. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CJC 122 Community Policing 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

**CJC 131 Criminal Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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. There will be an emphasis on North Carolina law.

**CJC 132 Court Procedure and Evidence 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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 160 Terrorism: Underlying Issues 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course identifies the fundamental reasons why America is a target for terrorists, covering various domestic/international terrorist groups and ideologies from a historical aspect. Emphasis is placed upon recognition of terrorist crime scenes; weapons of mass destruction; chemical, biological, and nuclear terrorism; and planning consideration involving threat assessments. Upon completion, the student should be able to identify and discuss the methods used in terrorists' activities and complete a threat assessment for terrorists' incidents.

**CJC 170 Critical Incident Management for Public Safety3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/work place violence. Upon completion, the student should be able to identify and discuss managerial techniques, legal issues, and response procedures to critical incidents.

**CJC 212 Ethics and Community Relations 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 demonstrate the ability to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

**CJC 213 Substance Abuse 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. Drug enforcement programs and techniques will be discussed.

**CJC 214 Victimology 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims' roles, and current victim assistance programs.

**CJC 215 Organization and Administration 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

**CJC 221 Investigative Principles 3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall
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.

**CJC 222 Criminalistics 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. An emphasis will be placed on current technology for collection and classification of fingerprint evidence.

**CJC 223 Organized Crime 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

**CJC 225 Crisis Intervention 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces critical incident intervention and management techniques as they apply to operational criminal justice practitioners. Emphasis is placed on the victim/offender situation as well as job-related high stress, dangerous, or problem-solving citizen contacts. Upon completion, students should be able to provide insightful analysis of emotional, violent, drug-induced, and other critical and/or stressful incidents that require field analysis and/or resolution.

**CJC 231 Constitutional Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.

**CJC 232 Civil Liability 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers liability issues for the criminal justice professional. Topics include civil rights violations, tort liability, employment issues, and other related topics. Upon completion, students should be able to explain civil trial procedures and discuss contemporary liability issues.

**CJC 255 Issue in Criminal Justice App 3 0 3**
Prerequisites: CJC 111, CJC 221, and CJC 231
Corequisites: None
Available: As Needed
This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer.

**CJC 261 High-Risk Situations 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course prepares students to employ proper response methods, including a risk and attack analysis, when faced with high-risk situations. Emphasis will be placed on cover and evacuation techniques when faced with an active, barricaded shooter, improvised explosive device recognition, and hazardous material impact assessment. Upon completion, students would be able to demonstrate an ability to analyze a high-risk situation and use the proper decision-making process to respond. This course is restricted to the Criminal Justice Technology curriculum.

## Construction Management

***CMT 210 Professional Construction Supervision 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

***CMT 212 Total Safety Performance 3 0 3**
Prerequisites: None
Corequisites: CMT 210
Available: Fall
This course covers the importance of managing safety and productivity equally by encouraging people to take individual responsibility for safety and health in the workplace. Topics include safety management, controlling construction hazards, communicating and enforcing policies, OSHA compliance, personal responsibility and accountability, safety planning, training, and personal protective equipment. Upon completion, students should be able to supervise safety at a construction job site and qualify for the OSHA Training Certification.

***CMT 214 Planning and Scheduling 3 0 3**
Prerequisites: CMT 210 and BPR 130
Corequisites: None
Available: Fall
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 3**
Prerequisites: CMT 210
Corequisites: None
Available: Spring
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 3**
Prerequisites: CMT 210
Corequisites: None
Available: Spring
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.

## Cooperative Education

**COE 111 Co-op Work Experience I** **0 0 10 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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: See Department Chair for prerequisites
Corequisites: Select one: COE 111, COE 112, COE 113, COE 114
Available: See Department Chair for availability
This course description may be written by the individual colleges.

**COE 121 Co-op Work Experience II** **0 0 10 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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 123 Co-op Work Experience II** **0 0 30 3**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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 125 Work Experience Seminar II** **1 0 0 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: Select one: COE 121, COE 122, COE 123, COE 124
Available: See Department Chair for availability
This course description may be written by the individual college.

**COE 131 Co-op Work Experience III** **0 0 10 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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 135 Work Experience Seminar III** **1 0 0 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: Select one: COE 131, COE 132, COE 133, COE 134
Available: See Department Chair for availability
This course description my be written by the individual colleges.

**COE 212 Work Experience IV** **0 0 20 2**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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 213 Co-op Work Experience IV** **0 0 30 3**
Prerequisites: See Department Chair for prerequisites
Corequisites: None
Available: See Department Chair for availability
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 215 Work Experience Seminar IV** **1 0 0 1**
Prerequisites: See Department Chair for prerequisites
Corequisites: Select one: COE 211, COE 212, COE 213, COE 214
Available: See Department Chair for availability
This course description may be written by the individual colleges.

## Communications

**COM 120 Intro to Interpersonal Communication** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute).

**COM 140 Intro to Intercultural Communication** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces techniques of cultural research, definitions, functions, characteristics, and impacts of cultural differences in public address. Emphasis is placed on how diverse backgrounds influence the communication act and how cultural perceptions and experiences determine how one sends and receives messages. Upon completion, students should be able to demonstrate an understanding of the principles and skills needed to become effective in communicating outside one's primary culture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**COM 150 Intro to Mass Communication** **3 0 3**
Prerequisites: ENG 111
Corequisites: ENG 112, ENG 113 or ENG 114
Available: Spring
This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Emphasis is on the nature, history, functions, and responsibilities of mass communication industries in a global environment and their role and impact in American society. Upon completion, students should have an awareness of the pervasive nature of the mass media and how the media operate in an advanced post-industrial society. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**COM 160 Small Group Communications** **3 0 3**
Prerequisites: None
Corequisites: None
Available:
This course provides an overview of the theory, practice, and critical analysis of communication in the small group setting. Emphasis is placed on group development, conflict, and conformity; leadership skills and styles; group roles and ranks; and decision making, problem solving, and conflict resolution. Upon completion, students should be able to apply topics of gender, culture, and social-emotional functions within group settings. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**COM 231 Public Speaking** **3 0 3**
Prerequisites: RED 090
Corequisites: None
Available: Fall, Spring, Summer
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 has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute).

**COM 250 Public Communication** **3 0 3**
Prerequisites: ENG 113 or ENG 114, and COM 120 or COM 231
Corequisites: None
Available: As Needed
This course provides a comprehensive theoretical background for the practice of speaking in public utilizing rhetoric principles applied in a series of speaking experiences. Emphasis is on informative and persuasive advanced speaking skills; speaking using the teleprompter, and on-camera presentations of news, weather and commercials. Upon completion of a portfolio of course assignments, students should be able to construct, present, and critique public communications messages that are complex, dynamic and purposeful for broadcast (radio and television), web delivery, and professional forums. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

## Cosmetology

**COS 111 Cosmetology Concepts I** **4 0 4**
Prerequisites: None
Corequisites: COS 112
Available: Fall
This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

**COS 112 Salon I** **0 24 8**
Prerequisites: None
Corequisites: COS 111
Available: Fall
This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

**COS 113 Cosmetology Concepts II** **4 0 4**
Prerequisites: COS 111
Corequisites: COS 114
Available: Spring, Summer
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

**COS 114 Salon II** **0 24 8**
Prerequisites: COS 112
Corequisites: COS 113
Available: Spring, Summer
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

**COS 115 Cosmetology Concepts III** **4 0 4**
Prerequisites: COS 113
Corequisites: COS 116
Available: Spring, Summer
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

**COS 116 Salon III** **0 12 4**
Prerequisites: COS 114
Corequisites: COS 115
Available: Spring, Summer
This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

**COS 117 Cosmetology Concepts IV** **2 0 2**
Prerequisites: COS 115
Corequisites: COS 118
Available: Fall
This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.

**COS 118 Salon IV** **0 21 7**
Prerequisites: COS 116
Corequisites: COS 117
Available: Fall
This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.

**COS 119 Esthetics Concepts I** **2 0 2**
Prerequisites: None
Corequisites: COS 120
Available: Fall
This course covers the concepts of esthetics. Topics include orientation, anatomy, physiology, hygiene, sterilization, first aid, chemistry, basic dermatology, and professional ethics. Upon completion, students should be able to demonstrate an understanding of the concepts of esthetics and meet course requirements.

**COS 120 Esthetics Salon I** **0 18 6**
Prerequisites: None
Corequisites: COS 119
Available: Fall
This course covers the techniques of esthetics in a comprehensive experience in a simulated salon setting. Topics include client consultation, facials, body treatments, hair removal, make-up applications, and color analysis. Upon completion, students should be able to safely and competently demonstrate esthetic services on clients in a salon setting.

**COS 121 Manicure/Nail Technology I** **4 6 6**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course covers techniques of nail technology, hand and arm massage, and recognition of nail diseases and disorders. Topics include OSHA/safety, sanitation, bacteriology, product knowledge, salesmanship, manicures, artificial applications, pedicures, massage, and other related topics. Upon completion, students should be able to safely and competently perform nail care, including manicures, pedicures, massage, decorating, and artificial applications in a salon setting.

**COS 125 Esthetics Concepts II** **2 0 2**
Prerequisites: COS 119
Corequisites: COS 126
Available: Spring
This course covers more comprehensive esthetics concepts. Topics include nutrition, business management, make-up and color analysis. Upon completion students should be able to demonstrate an understanding of the advanced esthetics concepts and meet course requirements.

**COS 126 Esthetics Salon II** **0 18 6**
Prerequisites: COS 120
Corequisites: COS 125
Available: Spring
This course provides experience in a simulated esthetics setting. Topics include machine facials, aroma therapy, massage therapy, electricity, and apparatus. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology licensing examination for Estheticians.

**COS 222 Manicure/Nail Technology II** **4 6 6**
Prerequisites: COS 121
Corequisites: None
Available: Fall, Spring
This course covers advanced techniques of nail technology and hand and arm massage. Topics include OSHA/safety, product knowledge, customer service, salesmanship, artificial applications, nail art, and other related topics. Upon completion, students should be able to demonstrate competence necessary for the licensing examination, including advanced nail care, artificial enhancements, and decorations.

**COS 260 Design Applications** **1 3 2**
Prerequisites: COS 115, COS 116
Corequisites: None
Available: Spring, Summer
This course provides an overview of the design concepts used in cosmetology. Topics include the application of art principles and elements to artistically design hair, nails, and make-up and other related topics. Upon completion, students should be able to demonstrate knowledge and techniques associated with design concepts.

## Computer Programming

**CSC 134 C++ Programming 2 3 3**
Prerequisites: CIS 115
Corequisites: None
Available: As Needed
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 and debug at a beginning level. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**CSC 139 Visual BASIC Programming 2 3 3**
Prerequisites: CIS 115
Corequisites: None
Available: As Needed
This course introduces computer programming using the Visual BASIC 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 and debug at a beginning level. This course is also available through the Virtual Learning Community (VLC). This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**CSC 151 JAVA Programming 2 3 3**
Prerequisites: CIS 115
Corequisites: None
Available: Fall, Spring
This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

## Construction

**CST 211 Construction Surveying 2 3 3**
Prerequisites: Select one: MAT 115, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
Available: Summer
This course covers field-surveying applications for residential and commercial construction. Topics include building layout and leveling, linear measurement and turning angles, plumbing vertical members, and topographic and utilities surveys. Upon completion, students should be able to properly and accurately use surveying equipment to lay out residential and commercial buildings.

## Computer Information Technology

**CTS 060 Essential Computer Usage 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course covers the basic 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 perform basic computer commands, access files, print documents and complete fundamental application operations.

**CTS 120 Hardware/Software Support 2 3 3**
Prerequisites: CIS 110 or CIS 111, and NOS 110
Corequisites: None
Available: Fall
This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

**CTS 125 Presentation Graphics 2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
Available: As Needed
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 3**
Prerequisites: CIS 110 or CIS 111 or OST 137, and MAT 070
Corequisites: None
Available: Fall, Spring
This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. This course covers advanced functions, charting, macros, databases, and linking.

**CTS 135 Integrated Software Intro 2 4 4**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
Available: As Needed
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 217 Computer Training/Support 2 2 3**
Prerequisites: CIS 110 and DBA 110
Corequisites: None
Available: Spring
This course introduces computer training and support techniques. Topics include methods of adult learning, training design, delivery, and evaluation, creating documentation, and user support methods. Upon completion, students should be able to design and implement training and provide continued support for computer users.

**CTS 220 Advanced Hard/Software Support 2 3 3**
Prerequisites: CTS 120
Corequisites: None
Available: Spring
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 preventative maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventative maintenance, and maintain basic networking on personal computers.

***CTS 285 Systems Analysis and Design 3 0 3**
Prerequisites: CIS 115, DBA 110 and Department Chair Approval
Corequisites: None
Available: Fall
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/OOM 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 288 Professional Practices in IT 2 2 3**
Prerequisites: CTS 285 or OST 289
Corequisites: None
Available: Spring
This course provides students with the business skills needed to succeed in the information technology field. Topics include portfolio development, resume design, interviewing techniques and professional practices. Upon completion, students should be able to prepare themselves and their work for a career in the information technology field.

***CTS 289 System Support Project 1 4 3**
Prerequisites: CTS 285
Corequisites: None
Available: Spring
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.

## Culinary

**CUL 110 Sanitation and Safety 2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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. Students are required to pass the National Restaurant Association sanitation examination to receive credit for the course.

***CUL 110A Sanitation and Safety Lab 0 2 1**
Prerequisites: None
Corequisites: CUL 110
Available: Fall, Spring, Summer
This course is a laboratory to accompany CUL 110. Emphasis is placed on practical experiences that enhance the materials presented in CUL 110. The focus of the class is to familiarize students with the operation and safe handling of commercial kitchen equipment. Upon completion, students should be able to demonstrate practical applications of sanitation and safety procedures in the hospitality industry.

**CUL 112 Nutrition for Foodservice 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course covers purchasing for hotels and restaurants. Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product.

***CUL 130 Menu Design 2 0 2**
Prerequisites: CUL 140 or CUL 142, and HRM 220
Corequisites: None
Available: Fall
This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utilization, demographics, and customer needs. Upon completion, students should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

***CUL 135 Food and Beverage Service 2 0 2**
Prerequisites: Select one: CUL 180, CUL 275, HRM 124
Corequisites: None
Available: Spring
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.

***CUL 135A Food and Beverage Service Lab 0 2 1**
Prerequisites: Select one: CUL 180, CUL 275, HRM 124
Corequisites: CUL 135
Available: Spring
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 5**
Prerequisites: None
Corequisites: CUL 110, CUL 110A
Available: Fall
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. Weekly participation in American Regional and International buffets, banquets, and a la carte production enhances students' culinary and service skills.

***CUL 142 Fundamentals of Food 2 6 5**
Prerequisites: None
Corequisites: CUL 110, CUL 110A, and CUL 150 or HRM 124
Available: Fall
This course introduces the student to the basic principles of cooking, baking, and kitchen operations. Topics include protein, starch, vegetable/fruit identification, selection, storage and preparation; breakfast cookery, breads, sweet doughs and pastries; knife/organizational skills, and work coordination. Upon completion, students should be able to execute efficiently a variety of cooking/baking skills as they apply to different stations in the kitchen. Weekly participation in American regional and international buffets, banquets, and a la carte production enhances student service skills.

***CUL 150 Food Science 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course covers the chemical and physical changes in foods that occur with cooking, handling, and processing. Topics include heat transfer and its effect on color, flavor, and texture; and emulsification, protein coagulation, leavening agents, viscosity, and gel formation. Upon completion, students should be able to demonstrate an understanding of the principles covered as they apply to food preparation in an experimental setting.

***CUL 160 Baking I 1 4 3**
Prerequisites: None
Corequisites: CUL 110
Available: Fall, Spring, Summer
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. Historical perspectives and current practices will be addressed. Upon completion, students should be able to prepare and evaluate baked products.

***CUL 170 Garde Manger I 1 4 3**
Prerequisites: CUL 110, CUL 110A
Corequisites: None
Available: Spring
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 5**
Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A
Corequisites: None
Available: Fall
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. Weekly participation in buffets, banquets, and a la carte production enhances students' supervisory and technical skills.

***CUL 214 Wine Appreciation 1 2 2**
Prerequisites: CUL 180 or CUL 275 or Department Chair Approval
Corequisites: None
Available: Spring
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 complement various cuisines and particular tastes. This course will also cover other beverages and legal aspects pertaining to beverage operations.

***CUL 240 Advanced Culinary Skills 1 8 5**
Prerequisites: CUL 140
Corequisites: CUL 240A
Available: Spring
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. Weekly participation in a la carte production enhances students' culinary and service skills.

***CUL 240A Advanced Culinary Skills Lab** **0 3 1**
Prerequisites: CUL 140
Corequisites: CUL 240
Available: Spring
This is a laboratory course to accompany CUL 240. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 240. Upon completion, students should be able to demonstrate a basic proficiency in the preparation of entrees and accompaniments.

***CUL 250 Classical Cuisine** **1 8 5**
Prerequisites: CIS 110, CUL 130, CUL 140, CUL 160, CUL 180 or CUL 275, CUL 240, CUL 270, and HRM 245
Corequisites: CUL 135, CUL 135A and CUL 214
Available: Spring
This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d'hote 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. This course includes weekly a la carte service encompassing contemporary and classical preparation and a capstone final exam.

***CUL 260 Baking II** **1 4 3**
Prerequisites: CUL 160
Corequisites: None
Available: Fall
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 Manger II** **1 4 3**
Prerequisites: CUL 170 and CUL 240
Corequisites: None
Available: Fall
This course is a continuation of CUL 170. Topics include pates, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapes, hors d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces.

**CUL 275 Catering Cuisine** **1 8 5**
Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A
Corequisites: None
Available: Fall
This course explores sequential steps to successful catering that includes sales, client needs, planning menus, purchasing, costing, pricing events, staffing and sanitation concerns. Emphasis is placed on new culinary competencies and skills specific to catering preparation, presentation, and service. Upon completion, students should be able to demonstrate proficiency in the successful design and execution of various catering events.

***CUL 285 Competition Fundamentals** **1 4 3**
Prerequisites: CUL 110, CUL 110A, and CUL 140 or CUL 160
Corequisites: None
Available: As Needed
This course provides practical expertise in the planning, techniques, and procedures required for culinary competitions and exhibitions. Emphasis is placed on competition strategies including menu planning, teamwork, plate design, flavor profiles, recipe development, nutrition, advanced knife/culinary skills, professionalism and portfolio development. Upon completion, students should be able to apply exhibition/competition skills and standards in the competition arena and professional kitchen.

## Database Management Technology

**DBA 110 Database Concepts** **2 3 3**
Prerequisites: CIS 110, CIS 111 or CIS 115
Corequisites: None
Available: Fall, Spring
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 120 Database Programming I** **2 2 3**
Prerequisites: DBA 110
Corequisites: None
Available: Fall
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 210 Database Administration** **2 3 3**
Prerequisites: DBA 120
Corequisites: None
Available: Spring
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.

## Developmental Disabilities

**DDT 110 Developmental Disabilities** **3 0 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

# Dental

***DEN 101 Preclinical Procedures** **4 6 0 7**
Prerequisites: None
Corequisites: DEN 111
Available: Fall
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. This is a diploma-level course.

***DEN 102 Dental Materials** **3 4 0 5**
Prerequisites: DEN 101
Corequisites: None
Available: Spring
This course provides instruction in 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. This is a diploma-level course.

**DEN 103 Dental Sciences** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. This is a diploma-level course.

***DEN 104 Dental Health Education** **2 2 0 3**
Prerequisites: DEN 101
Corequisites: None
Available: Spring
This course covers the study of preventative dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventative procedures, and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings. This is a diploma-level course.

***DEN 105 Practice Management** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. This is a diploma-level course.

***DEN 106 Clinical Practice I** **1 0 12 5**
Prerequisites: DEN 101 and DEN 112
Corequisites: None
Available: Spring
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, laboratory, and clinical skills in a dental setting. This is a diploma-level course.

***DEN 107 Clinical Practice II** **1 0 12 5**
Prerequisites: DEN 106
Corequisites: None
Available: Summer
This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. This is a diploma-level course.

**DEN 110 Orofacial Anatomy** **2 2 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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: MAT 060
Corequisites: DEN 101 or DEN 121
Available: Fall
This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws.

**DEN 112 Dental Radiography** **2 3 0 3**
Prerequisites: None
Corequisites: DEN 101 or DEN 110 and DEN 111 and DEN 121
Available: Fall
This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.

**DEN 120 Dental Hygiene Preclinic Lecture 2 0 0 2**
Prerequisites: None
Corequisites: DEN 121
Available: Fall
This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.

***DEN 121 Dental Hygiene Preclinic Lab 0 6 0 2**
Prerequisites: None
Corequisites: DEN 111 and DEN 120
Available: Fall
This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures. Also, students should be able to demonstrate aseptic technique used in a dental environment.

**DEN 123 Nutrition/Dental Health 2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.

**DEN 124 Periodontology 2 0 0 2**
Prerequisites: DEN 110
Corequisites: None
Available: Spring
This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.

***DEN 125 Dental Office Emergencies 0 2 0 1**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, students should be able to recognize, assess, and manage various dental office emergencies and activate advanced medical support when indicated.

***DEN 130 Dental Hygiene Theory I 2 0 0 2**
Prerequisites: DEN 120
Corequisites: DEN 131
Available: Spring
This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.

***DEN 131 Dental Hygiene Clinic I 0 0 9 3**
Prerequisites: DEN 121 and DEN 112
Corequisites: DEN 130
Available: Spring
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 140 Dental Hygiene Theory II 1 0 0 1**
Prerequisites: DEN 130
Corequisites: DEN 141
Available: Summer
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.

***DEN 141 Dental Hygiene Clinic II 0 0 6 2**
Prerequisites: DEN 131
Corequisites: DEN 140
Available: Summer
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 220 Dental Hygiene Theory III 2 0 0 2**
Prerequisites: DEN 140
Corequisites: DEN 221
Available: Fall
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.

***DEN 221 Dental Hygiene Clinic III 0 0 12 4**
Prerequisites: DEN 141
Corequisites: DEN 220
Available: Fall
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

**DEN 222 General and Oral Pathology 2 0 0 2**
Prerequisites: BIO 163 or BIO 165 or BIO 168
Corequisites: None
Available: Summer
This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

**DEN 223 Dental Pharmacology** **2 0 0 2**
Prerequisites: None
Corequisites: Select one: BIO 163, BIO 165 or BIO 168
Available: Spring
This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

***DEN 224 Materials and Procedures** **1 3 0 2**
Prerequisites: DEN 111 and DEN 121
Corequisites: None
Available: Fall
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventative materials, fabrication of casts and appliances, and chair-side 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 chair-side functions.

***DEN 230 Dental Hygiene Theory IV** **1 0 0 1**
Prerequisites: DEN 220
Corequisites: DEN 231
Available: Spring
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** **0 0 12 4**
Prerequisites: DEN 221
Corequisites: DEN 230
Available: Spring
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** **2 0 3 3**
Prerequisites: None
Corequisites: COM 231 and SOC 240
Available: Fall, Spring
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, preventative 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** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, resumes, 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.

**DEN 235 Dental Hygiene Concepts** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides an opportunity to exhibit interpersonal and job-related skills for effective dental hygiene practice. Emphasis is placed on critical thinking and integration of didactic and clinical components into the workplace. Upon completion, students should be able to demonstrate the knowledge required of any entry-level dental hygienist.

## Drafting

**DFT 111 Technical Drafting I** **1 3 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices.

**DFT 119 Basic CAD** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
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.

**DFT 151 CAD I** **2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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.

**DFT 152 CAD II** **2 3 3**
Prerequisites: DFT 151
Corequisites: None
Available: Spring
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.

**DFT 153 CAD III** **2 3 3**
Prerequisites: DFT 151
Corequisites: None
Available: Summer
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.

**DFT 154 Intro Solid Modeling 2 3 3**
Prerequisites: DFT 151
Corequisites: None
Available: Spring
This course in an introduction to basic three-dimensional solid modeling and design software. Topics include basic design, creation, editing, rendering and analysis of solid models and creation of multiview drawings. Upon completion, students should be able to use design techniques to create, edit, render and generate a multiview drawing.

**DFT 161 Pattern Design & Layout 1 2 2**
Prerequisites: WLD 115
Corequisites: None
Available: Summer
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 3**
Prerequisites: None
Corequisites: None
This course introduces basic engineering graphics skills and applications. Topics include sketching, selection and use of current methods and tools, and the use of engineering graphics applications. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**DFT 189 Emerging Technologies in CAD 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides an opportunity to explore new and emerging technologies related to Computer-Aided Drafting. Emphasis is placed on introducing a selected CAD technology or topic, identified as being "new" or "emerging", from a variety of drafting disciplines. Upon completion, students should be able to demonstrate an understanding of and practical skill in the use of the CAD technology studied.

**DFT 251 Customizing CAD Software 2 2 3**
Prerequisites: DFT 151 and DFT 152
Corequisites: None
Available: Fall
This course covers customizing CAD software. Topics include the creation of symbol libraries and screen menus, macro writing, and automation of common drafting functions on CAD. Upon completion, students should be able to create a symbol library and screen menu and automate common drawing functions.

***DFT 253 CAD Data Management 2 2 3**
Prerequisites: DFT 151 and DFT 251
Corequisites: None
Available: Spring
This course covers engineering document management techniques. Topics include efficient control of engineering documents, manipulation of CAD drawing data, generation of bill of materials, and linking to spreadsheets or databases. Upon completion, students should be able to utilize systems for managing CAD drawings, extract data from drawings, and link data to spreadsheets or database applications.

***DFT 259 CAD Project 1 4 3**
Prerequisites: ARC 112, ARC 113, and DFT 251
Corequisites: None
Available: Spring
This course is a capstone course experience for programs with a focus in computer-aided design. Emphasis is placed on the use of design principles and computer technology in planning, managing, and completing a design project. Upon completion, students should be able to plan and produce engineering documents of a design project, including solid models, working drawings, bom's, annotations, and spreadsheets.

## Digital Media Technology

**DME 110 Intro to Digital Media 2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces students to key concepts, technologies, and issues related to digital media. Topics include emerging standards, key technologies and related design issues, terminology, media formats, career paths, and ethical issues. Upon completion, students should be able to demonstrate the various media formats that are used in digital media technology.

**DME 115 Graphic Design Tools 2 2 3**
Prerequisites: ART 171
Corequisites: None
Available: Spring
This course provides students with an introduction to creative expression and art/design techniques in a digital environment. Emphasis is placed on designing, creating, editing, and integrating, visual components consisting of bit-mapped and vector-based images, drawings, banners, text, simple animations, and multiple layers. Upon completion, students should be able to design and produce a range of visual products using digital processing techniques.

**DME 120 Intro to Multimedia Applications 2 2 3**
Prerequisites: DME 110 and DME 130
Corequisites: None
Available: Spring
This course introduces storyboarding and multimedia application design. Topics include vector and bit-mapped graphics, interactive multimedia interfaces, layering techniques, image and animation libraries, and scripting. Upon completion, students should be able to produce basic high-quality interactive multimedia applications.

**DME 130 Digital Animation I 2 2 3**
Prerequisites: DME 110
Corequisites: None
Available: Spring, Summer
This course introduces concepts for planning and developing animation sequences. Emphasis will be placed on review of digital animation concepts and exploration of various animation software packages. Upon completion, students should be able to produce simple animations.

**DME 140 Intro Audio/Video Media 2 2 3**
Prerequisites: DME 110
Corequisites: None
Available: Spring
This course is designed to teach students how to manipulate digital and audio content for multimedia applications. Topics include format conversion and a review of current technologies and digital formats. Upon completion, students should be able to modify existing audio and video content to meet a range of production requirements associated with digital media applications.

**DME 210 User Interface Design** **2 2 3**
Prerequisites: DME 110, DME 120, and WEB 115 or WEB 140
Corequisites: None
Available: Fall
This course covers current design approaches and emerging standards related to the design and development of user interfaces. Emphasis is placed on conducting research, and analyzing and reviewing current practices in effective interface design. Upon completion, students should be able to intelligently discuss and evaluate new and existing digital media products in terms of the user interface.

**DME 220 Interact Multi-Media Programming** **2 2 3**
Prerequisites: DME 120 and DME 130
Corequisites: None
Available: Spring
This course is designed to build on concepts developed in DME 120 and teaches students to apply custom programming to develop advanced applications and components. Emphasis is placed on scripting language functionalities associated with a variety of software packages. Upon completion, students should be able to produce advanced, high-quality interactive multimedia applications.

**DME 230 Digital Animation II** **2 2 3**
Prerequisites: DME 130
Corequisites: None
Available: Fall
This course introduces state-of-the-art 3D animation techniques and concepts. Emphasis is placed on utilizing the features of current animation software. Upon completion, students should be able to produce 3D animations as components of a multimedia application.

**DME 240 Media Compression** **2 2 3**
Prerequisites: DME 110 and DME 140
Corequisites: None
Available: Spring
This course will introduce software and usage of digital audio and video compression and streaming media technologies. Topics include compression techniques, file formats and codecs, streaming media, streaming media services, and current and emerging trends. Upon completion, students should be able to utilize compressed media in a variety of video, web and multimedia applications.

***DME 260 Emerg Tech Digital Media** **2 2 3**
Prerequisites: DME 120, DME 130, and DME 210
Corequisites: None
Available: Spring
This course provides students with the latest technologies and strategies in the field of digital media. Emphasis is placed on the evaluation of emerging digital media technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging digital media technologies and establish informed opinions.

***DME 270 Prof Prac Digital Media** **2 2 3**
Prerequisites: DME 120, DME 130, and DME 210
Corequisites: None
Available: Spring
This course introduces students to business skills needed to succeed in the digital media workplace. Topics include portfolio development, resume design, and preparation of media contacts. Upon completion, students should be able to prepare themselves and their work for a career in the digital media workplace.

***DME 285 Systems Projects** **2 2 3**
Prerequisites: DME 120, DME 130, DME 140, and DME 210
Corequisites: None
Available: Spring, Summer
This course provides an opportunity to complete a significant digital media 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, maintain and implement a digital media project.

## Drama

**DRA 111 Theatre Appreciation** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. Attendance at one play performance and in-depth reading of two plays are required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**DRA 112 Literature of the Theatre** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**DRA 120 Voice for Performance** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**DRA 122 Oral Interpretation** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the dramatic 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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**DRA 124 Readers Theatre 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**DRA 126 Storytelling 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**DRA 130 Acting I 0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**DRA 131 Acting II 0 6 3**
Prerequisites: DRA 130
Corequisites: None
Available: Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**DRA 135 Acting for the Camera I 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides an applied study of the camera actor's craft. Topics include commercial, dramatic, and print performance styles. Upon completion, students should be able to explore their creativity in on-camera performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**DRA 140 Stagecraft I 0 6 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**DRA 141 Stagecraft II 0 6 3**
Prerequisites: DRA 140
Corequisites: None
Available: Spring
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 avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**DRA 145 Stage Make-up 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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 finished make-up. Upon completion, students should be able to create and apply make-up prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**DRA 170 Play Production I 0 9 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**DRA 171 Play Production II 0 9 3**
Prerequisites: DRA 170
Corequisites: None
Available: Spring
This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**DRA 211 Theatre History I** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the development of theatre from its origin to the closing of the British theatre in 1642. Topics include the history, aesthetics, and representative dramatic literature of the period. Upon completion, students should be able to trace the evolution of theatre and recognize the styles and types of world drama. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**DRA 240 Lighting for the Theatre** **2 2 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course is an applied study of theatre lighting and is designed to train theatre technicians. Emphasis is placed on lighting technology including the mechanics of lighting and light control equipment by practical work with lighting equipment. Upon completion, students should be able to demonstrate competence with lighting equipment. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**DRA 250 Theatre Management** **1 3 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the organization and operation of a theatre. Emphasis is placed on organization, communication, networking with other organizations, and grant writing. Upon completion, students should be able to demonstrate an understanding of the structure and operation of a theatre organization. This course has been approved to satisfy the Comprehensive Articulation Agreement general education elective requirement in humanities/fine arts.

## Economics

**ECO 151 Survey of Economics** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**ECO 251 Principles of Microeconomics** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**ECO 252 Principles of Macroeconomics** **3 0 3**
Prerequisites: ECO 151 or ECO 251
Corequisites: None
Available: Fall
This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

## Education

**EDU 114 Intro to Family Childcare** **3 0 3**
Prerequisites: (ENG 080 and RED 080) or ENG 085 and MAT 060
Corequisites: None
Available: As Needed
This course introduces the student to family child care home environments with emphasis on standards and developmentally effective approaches for supporting diverse children and families. Topics include standards for quality, curriculum for multiple age groups, authentic assessment methods, business practices, building positive family and community partnerships, and professionalism. Upon completion, students should be able to design a family child care handbook that reflects a healthy, respectful, supportive, and stimulating learning environment.

**EDU 118 Principles & Practices of Instructional Assistants** **3 0 3**
Prerequisites:None
Corequisites: None
Available: Spring
This course covers the teacher associate's role in the educational system. Topics include history of education, professional responsibilities and ethics, cultural diversity, communication skills, and identification of the optimal learning environment. Upon completion, students should be able to describe the supporting role of the instructional assistant, demonstrate positive communication, and discuss educational philosophy. This course is a unique concentration requirement in the Teacher Associate concentration in the Early Childhood Associate program.

**EDU 119 Introduction to Early Childhood Education 4 0 4**
Prerequisites: None
Corequisites: None
Available: Fall
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 to design career plans and develop appropriate schedules, environments and activity plans while incorporating adaptations for children with exceptionalities.

***EDU 131 Child, Family, & Community 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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.

**EDU 144 Child Development I 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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 development characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

***EDU 145 Child Development II 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers theories of child development, developmental sequences, and factors that influence children's development, from pre-school through middle childhood for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developments characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

***EDU 146 Child Guidance 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces practical principles and techniques for developmentally appropriate guidance for all children with and without disabilities, including those at risk. Emphasis is placed on encouraging self-esteem, cultural awareness, effective communication skills, direct/ indirect techniques/ strategies and observation to understand the underlying causes of behavior. Upon completion, students should be able to demonstrate appropriate interactions with children and families and promote conflict resolution, self-control, self-motivation, and self-esteem in children.

***EDU 151 Creative Activities 3 0 3**
Prerequisites: None
Corequisites: EDU 151A
Available: Fall, Spring
This course covers planning, creation and adaptation of developmentally supportive learning environments with attention to curriculum, interactions, teaching practices and learning materials. Emphasis is placed on creating and adapting integrated, meaningful, challenging and engaging developmentally supportive learning experiences in art, music, movement and physical skills, and dramatics. Upon completion, students should be able to create, manage, adapt and evaluate developmentally supportive learning materials, experiences and environments.

***EDU 151A Creative Activities Lab 0 2 1**
Prerequisites: None
Corequisites: EDU 151
Available: Fall, Spring
This course provides a laboratory component to complement EDU 151. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate creative activities.

***EDU 153 Health, Safety, and Nutrition 3 0 3**
Prerequisites: None
Corequisites: EDU 153A
Available: Spring
This course focuses on promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognition and reporting of abuse and neglect and state regulations. Upon completion, students should be able demonstrate knowledge of health, safety, and nutritional needs, implement safe leaning environments, and adhere to state regulations.

**EDU 153A Health, Safety, and Nutrition Lab 0 2 1**
Prerequisites: (ENG 080 and RED 080) or ENG 085
Corequisites: EDU 153
Available: Spring
This course provides a laboratory component to complement EDU 153. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of safe indoor/outdoor environments and nutrition education programs.

**EDU 154 Social/Emotion/Behavioral Development 3 0 3**
Prerequisites: (ENG 080 and RED 080) or ENG 085 and (EDU 144 and EDU 145) or (PSY 244 and PSY 245)
Corequisites: None
Available: Fall
This course covers the emotional/social development of children and the causes, expressions, prevention and management of challenging behaviors in all children. Emphasis is placed on caregiver/family/child relationships, positive emotional/social environments, developmental concerns, risk factors, and intervention strategies. Upon completion, students should be able to identify factors influencing emotional/social development, utilizing screening measures, and designing positive behavioral supports.

**EDU 163 Classroom Management & Instruction 3 0 3**
Prerequisites: (ENG 080 and RED 080) or ENG 085
Corequisites: None
Available: Fall
This course covers management and instructional techniques with school-age populations. Topics include classroom management and organization, teaching strategies, individual student differences and learning styles, and developmentally appropriate classroom guidance techniques. Upon completion, students should be able to utilize developmentally appropriate behavior management and instructional strategies that enhance the teaching/learning process and promote students' academic success.

**EDU 214 Early Child Intermediate Practicum 1 9 4**
Prerequisites: (ENG 090 and RED 090) or ENG 095 and EDU 119, EDU 146, and EDU 144 or PSY 244
Corequisites: None
Available: As Needed
This course is designed to allow students to apply skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on observing children and assisting with the implementation of developmentally appropriate activities and environments for all children; modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

***EDU 216 Foundations of Education 4 0 4**
Prerequisites: (ENG 090 and RED 090) or ENG 095
Corequisites: None
Available: Fall, Spring
This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational structures, issues, legal and financial, and experiences in public school classrooms. Upon completion, students should be able to relate classroom observations to the roles of teachers and schools and the process of teacher education. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

***EDU 221 Children with Exceptionalities 3 0 3**
Prerequisites: (EDU 144 and EDU 145) or (PSY 244 and PSY 245)
Corequisites: None
Available: Fall
This course, based on the foundation of typical development, introduces working with children with exceptionalities. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the learning environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, and work collaboratively with families and professionals to plan, implement, and evaluate inclusion strategies.

***EDU 234 Infants, Toddlers, and Twos 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the skills needed to effectively implement group care for infants, toddlers, and 2-year-olds. Emphasis is placed on child development and developmentally appropriate practices. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate a developmentally appropriate curriculum.

**EDU 243 Learning Theory 3 0 3**
Prerequisites: (ENG 090 and RED 090) or ENG 095
Corequisites: None
Available: Fall
This course provides lateral entry teachers an introduction to learning theory, various styles of learning, and motivational factors involved in the learning process. Emphasis is placed on the development of cognitive skills using the eight types of intelligence and applying these to practical classroom situations. Upon completion, students should be able to describe theories and styles of learning and discuss the relationship between different types of intelligence to learning motivation.

**EDU 248 Developmental Delays 3 0 3**
Prerequisites: (ENG 090 and RED 090) or ENG 095 and (EDU 144 and EDU 145) or (PSY 244 and PSY 245)
Corequisites: None
Available: Spring
This course covers the causes and assessment of developmental delays and individualized instruction and curriculum for children with developmental delays. Emphasis is placed on definition, characteristics, assessment, educational strategies, inclusion, family involvement, and services for children with developmental delays. Upon completion, students should be able to identify, assess, and plan educational intervention strategies for children with developmental delays and their families.

**EDU 251 Exploration Activities 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children.

**EDU 251A Exploration Activities Lab 0 2 1**
Prerequisites: None
Corequisites: EDU 251
Available: Summer
This course provides a laboratory component to complement EDU 251. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate science, math, and social studies activities for children.

***EDU 261 Early Childhood Administration I 3 0 3**
Prerequisites: EDU 119 and Department Chair Approval
Corequisites: None
Available: As Needed
This course covers the policies, procedures, and responsibilities for the management of early childhood education programs. Topics include implementation of goals, principles of supervision, budgeting and financial management, and meeting the standards for a NC Child Day Care license. Upon completion, students should be able to develop program goals, explain licensing standards, determine budgeting needs, and describe effective methods of personnel supervision.

***EDU 262 Early Childhood Administration II 3 0 3**
Prerequisites: EDU 261
Corequisites: None
Available: As Needed
This course provides a foundation for budgetary, financial, and personnel management of the child care center. Topics include budgeting, financial management, marketing, hiring, supervision, and professional development of a child care center. Upon completion, students should be able to formulate marketing, financial management, and fund development plans and develop personnel policies, including supervision and staff development plans.

**EDU 271 Educational Technology 2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
Available: Spring
This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments.

***EDU 280 Language and Literacy Experiences 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course explores the continuum of children's communication development, including verbal and written language acquisition and other forms of communication. Topics include selection of literature and other media, the integration of literacy concepts throughout the classroom environment, inclusive practices and appropriate assessments. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate literacy experiences.

**EDU 281 Instructional Strategies/Reading & Writing 2 2 3**
Prerequisites: (ENG 090 and RED 090) or ENG 095
Corequisites: None
Available: Spring
This course covers concepts, resources, and methods for teaching reading and writing to elementary through middle-grade children. Topics include the importance of literacy, learning styles, skills assessment, various reading and writing approaches and instructional strategies. Upon completion, students should be able to assess, plan, implement and evaluate school-age literacy experiences as related to the North Carolina Standard Course of Study.

**EDU 284 Early Child Capstone Practicum 1 9 4**
Prerequisites: Take one set
Set 1: ENG 090, RED 090, EDU 119, EDU 144 or PSY 244, EDU 145 or PSY 245, EDU 146 and EDU 151
Set 2: ENG 095, EDU 119, EDU 144 or PSY 244, EDU 145 or PSY 245, EDU 146 and EDU 151
Corequisites: None
Available: As Needed
This course is designed to allow students to apply skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits.

**EDU 285 Internship Experience-School Age 1 9 4**
Prerequisites: ENG 111 and completion of curriculum core requirements
Corequisites: None
Available: Spring
This course is designed to allow students to apply skills in a quality public or private school environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate lesson plans/assessments, appropriate guidance techniques, ethical/professional behaviors as indicated by assignments and onsite faculty visits.

**EDU 289 Advanced Issues/School Age 2 0 2**
Prerequisites: (ENG 090 and RED 090) or ENG 095
Corequisites: None
Available: Fall
This course covers advanced topics and issues that relate to school-age programs. Emphasis is placed on current advocacy issues, emerging technology, professional growth, ethics, and organizations for providers/teachers working with school-age populations. Upon completion, students should be able to list, discuss, and explain advanced current topics and issues surrounding school-aged populations.

## Engineering

***EGR 110 Introduction to Engineering Tech 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces general topics relevant to engineering technology. Skills developed include goal setting and career assessment, professional ethics, critical thinking and problem solving, using college resources for study and research, and using tools for engineering computations. Upon completion, students should be able to choose a career option in engineering technology and utilize college resources to meet their educational goals.

**EGR 115 Intro to Technology 2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

***EGR 125 Application Software for Technicians 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics and Internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the end results in text and graphical formats.

***EGR 130 Engineering Cost Control 2 2 3**
Prerequisites: MAT 121 or MAT 161 or MAT 171
Corequisites: None
Available: As Needed
This course covers the management of projects and systems through the control of costs. Topics include economic analysis of alternatives within budget constraints and utilization of the time value of money approach. Upon completion, students should be able to make choices that optimize profits on both short-term and long-term decisions.

***EGR 150 Intro to Engineering 1 2 2**
Prerequisites: MAT 080 or Placement
Corequisites: None
Available: As Needed
This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications. Upon completion, students should be able to understand the engineering process, the engineering profession, and utilize college resources to meet their educational goals. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

***EGR 220 Engineering Statics 3 0 3**
Prerequisites: PHY 251
Corequisites: MAT 272
Available: As Needed
This course introduces the concepts of engineering based on forces in equilibrium Topics include concentrated forces, distributed forces, forces due to friction and inertia as they apply to machines, structures, and systems. Upon completion, students should be able to solve problems which require the ability to analyze systems of forces in static equilibrium. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

***EGR 230 Engineering Materials 3 0 3**
Prerequisites: CHM 151
Corequisites: None
Available: As Needed
This course provides an introduction to fundamental physical principals governing the structure and constitution of metallic and nonmetallic materials. Topics include the relationship among the fundamental physical principles and the mechanical, physical and chemical properties of engineering materials. Upon completion, students should be able to explain the fundamental physical properties important to the design and understanding of engineering materials. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**EGR 285 Design Project 0 4 2**
Prerequisites: Department Chair Approval
Corequisites: None
Available: As Needed
This course provides the opportunity to design an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate projects.

## Electrical

**ELC 111 Introduction to Electricity 2 2 3**
Prerequisites: MAT 060
Corequisites: None
Available: Fall

This course introduces the fundamental concepts of electricity and test equipment to nonelectrical/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 5**
Prerequisites: MAT 060
Corequisites: None
Available: As Needed
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, troubleshoot, and repair DC/AC circuits.

**ELC 113 Basic Wiring I 2 6 4**
Prerequisites: None
Corequisites: None
Available: Fall
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 115 Industrial Wiring 2 6 4**
Prerequisites: ELC 113
Corequisites: None
Available: Spring
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 117 Motors and Controls 2 6 4**
Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
Available: Fall, Spring
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 118 National Electrical Code 1 2 2**
Prerequisites: ELC 113 or Department Chair Approval
Corequisites: None
Available: Spring, Summer
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 128 Introduction to PLC 2 3 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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 132 Electrical Drawings 1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the technical documentation that is typically found or used in the industrial environment. Topics include interpretation of service manuals, freehand sketching of lines, orthographic views and dimensions, and blueprint reading. Upon completion, students should be able to interpret technical documents and blueprints and use basic drafting skills to prepare usable field drawings.

**ELC 133 Advanced Circuit Analysis 2 3 3**
Prerequisites: ELC 131 or ELC 139
Corequisites: None
Available: As Needed
This course covers additional concepts of DC/AC electricity, the use of test equipment, and measurement techniques for electrical/electronics majors. Topics include the application of network theorems such as delta/wye transformations, Superposition Theorem, and other advanced circuit analysis principles. Upon completion, students should be able to construct and analyze DC/AC circuits and use advanced circuit analysis theorems, circuit simulators, and test equipment

**ELC 138 DC Circuit Analysis 2 3 3**
Prerequisites: None
Corequisites: MAT 070, RED 080
Available: Fall
This course introduces DC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, and analyze DC circuits; and properly use test equipment.

**ELC 139 AC Circuit Analysis 2 3 3**
Prerequisites: ELC 138
Corequisites: None
Available: Spring
This course introduces AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include AC voltages, circuit analysis laws and theorems, reactive components and circuits, transformers, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret AC circuit schematics; analyze and troubleshoot AC circuits; and properly use test equipment.

**ELC 213 Instrumentation 3 2 4**
Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
Available: Spring, Summer
This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and pneumatic instruments. Upon completion, students should be able to design, install, maintain, and calibrate instrumentation.

**ELC 228 PLC Applications 2 6 4**
Prerequisites: ELC 128
Corequisites: None
Available: Spring
This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems.

***ELC 229 Applications Project 1 3 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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. Students must possess a working knowledge of electrical theory, circuits, and control in order to be successful in this course.

**ELC 233 Energy Management 2 2 3**
Prerequisites: Select one: AHR 111, ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
Available: Spring
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.

## Electronics

**ELN 133 Digital Electronics 3 3 4**
Prerequisites: Select one: ELC 111, ELC 112, ELC 131, ELC 138
Corequisites: None
Available: Fall, Spring
This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AC/DC converters, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

**ELN 133A Digital Electronics Lab 0 3 1**
Prerequisites: None
Corequisites: ELN 133
Available: Spring, Summer
This course is laboratory to accompany ELN 133. Emphasis is placed on laboratory experiences which enhance the materials presented in ELN 133 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of digital fundamentals.

**ELN 137 Electronic Devices and Circuits 4 3 5**
Prerequisites: ELC 138
Corequisites: None
Available: Fall
This course covers diodes, transistors, linear integrated circuits, and IC voltage regulators. Topics include power supplies, switching circuits, amplifiers, oscillators, active filters, and other related topics. Upon completion, students should be able to analyze and troubleshoot circuits using schematic diagrams, appropriate test equipment, and manufacturer's data sheets

**ELN 150 CAD for Electronics 1 3 2**
Prerequisites: None
Corequisites: None
Available: Spring
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 152 Fabrication Techniques 1 3 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the fabrication methods required to create a prototype product from the initial circuit design. Topics include CAD, layout, sheet metal working, component selection, wire wrapping, PC board layout and construction, reverse engineering, soldering, and other related topics. Upon completion, students should be able to design and construct an electronic product with all its associated documentation.

**ELN 154 Introduction to Data Communication 2 3 3**
Prerequisites: ELN 133 with ELN 132 or ELN 137
Corequisites: None
Available: As Needed
This course introduces the principal elements and theory (analog and digital techniques) of data communication systems and how they are integrated as a complete network. Topics include an overview of data communication, OSI model, transmission modes, serial and parallel interfaces, applications of ICs, protocols, network configurations, modems, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems and high speed networks.

**ELN 232 Introduction to Microprocessors 3 3 4**
Prerequisites: ELN 133
Corequisites: None
Available: Spring
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 234 Communication Systems 3 3 4**
Prerequisites: ELN 133 with ELN 132 or ELN 137
Corequisites: None
Available: Fall, Spring
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 237 Local Area Networks 2 3 3**
Prerequisites: Select One: CET 111, CIS 110, CIS 111
Corequisites: None
Available: Fall, Spring
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 238 Advanced LANs 2 3 3**
Prerequisites: ELN 237
Corequisites: None
Available: Spring, Summer
This course covers advanced concepts, tools, and techniques associated with servers, workstations, and overall local area network performance. Topics include network security and configuration, system performance and optimization, communication protocols and packet formats, troubleshooting techniques, multi-platform integration, and other related topics. Upon completion, students should be able to use advanced techniques to install, manage, and troubleshoot networks and optimize server and workstation performance.

## Emergency Medical Science

**EMS 110 EMT - Basic 5 6 0 7**
Prerequisites: Enrollment in EMS program
Corequisites: None
Available: Fall
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 for the EMT-Basic certification.

**EMS 111 Prehospital Environment 2 2 0 3**
Prerequisites: Enrollment in EMS program
Corequisites: None
Available: Fall
This course introduces the prehospital care environment and is required for all levels of EMT certification. Topics include roles, responsibilities, laws, ethics, communicable diseases, hazardous materials recognition, therapeutic communications, EMS systems, and defense tactics. Upon completion of EMS 110 and EMS 111, students should be able to demonstrate competencies and skills necessary to achieve EMT-Basic certification.

**EMS 115 Defense Tactics for EMS 1 3 0 2**
Prerequisites: Enrollment in EMS program
Corequisites: None
Available: As Needed
This course is designed to provide tactics that can be used for self-protection in dangerous and violent situations. Emphasis is placed on prediction, recognition, and response to dangerous and violent situations. Upon completion, students should be able to recognize potentially hostile situations and protect themselves during a confrontation.

**EMS 120 Intermediate Interventions 2 3 0 3**
Prerequisites: BIO 168 and EMS 110, EMS 111 or EMS 115, and enrollment in EMS program
Corequisites: EMS 121 or EMS 122, EMS 130, EMS 131, and BIO 169
Available: Spring
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. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 121 EMS Clinical Practicum I 0 0 6 2**
Prerequisites: BIO 168, EMS 110, EMS 111 or EMS 115, and enrollment in EMS program
Corequisites: EMS 120, EMS 130, EMS 131, and BIO 169
Available: Spring
This course is the initial hospital and field internship and is required for intermediate and paramedic certification. Emphasis is placed on intermediate-level care. Upon completion, students should be able to demonstrate competence with intermediate-level skills. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 125 EMS Instructor Methodology 1 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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 for EMS 1 3 0 2**
Prerequisites: BIO 168, EMS 110, and enrollment in EMS program
Corequisites: BIO 169, EMS 120, and EMS 131
Available: Spring
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: BIO 168, EMS 110, and enrollment in EMS program
Corequisites: BIO 169, EMS 120, and EMS 130
Available: Spring
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.

**EMS 140 Rescue Scene Management 1 3 0 2**
Prerequisites: Enrollment in EMS program
Corequisites: EMS 140A
Available: Fall
This course introduces rescue scene management and is required for paramedic certification. Topics include response to hazardous material conditions, medical incident command, and extrication of patients from a variety of situations. Upon completion, students should be able to recognize and manage rescue operations based upon initial and follow-up scene assessment. Skills will include vehicle extrication, water rescue, rescue from heights, and confined space rescue.

**EMS 140A Rescue Scene Skills Lab** **0 3 0 1**
Prerequisites: Enrollment in EMS Program
Corequisites: EMS 140
Available: Fall
This course is designed to provide enhanced rescue scene skills for EMS providers. Emphasis is placed on advanced rescue scene evolutions including hazardous materials and major incident response. Upon completion, students should be able to demonstrate skills necessary to safely effect patients rescue in a variety of situations.

**EMS 150 Emergency Vehicles & EMS Communication** **1 3 0 2**
Prerequisites: Enrollment in EMS program
Corequisites: None
Available: Fall
This course examines the principles governing maintenance of emergency vehicles and EMS communication equipment and is required for paramedic certification. Topics include applicable motor vehicle laws affecting emergency vehicle operation, defensive driving, collision avoidance techniques, communication systems, and information management systems. Upon completion, students should have a basic knowledge of emergency vehicles, maintenance, and communication needs.

**EMS 210 Advanced Patient Assessment** **1 3 0 2**
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122
Corequisites: None
Available: Summer
This course covers advanced patient assessment techniques and is required for paramedic certification. Topics include initial assessment, medical-trauma history, field impression, complete physical exam process, on-going assessment, and documentation skills. Upon completion, students should be able to utilize basic communication skills and record and report collected patient data.

**EMS 220 Cardiology** **2 6 0 4**
Prerequisites: EMS 120, EMS 121, EMS 130, and EMS 131
Corequisites: EMS 210 and EMS 221
Available: Summer
This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, rhythm interpretation, cardiac pharmacology, and patient treatment. Upon completion, students should be able to certify at the Advanced Cardiac Life Support provider level utilizing American Heart Association Guidelines. In addition, the course provides instruction in the use of various cardiac monitoring devices.

**EMS 221 EMS Clinical Practicum II** **0 0 9 3**
Prerequisites: EMS 121 or EMS 122 and COE 111, EMS 120, EMS 130 and EMS 131
Corequisites: EMS 210 and EMS 220
Available: Summer
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 230 Pharmacology II for EMS** **1 3 0 2**
Prerequisites: EMS 130
Corequisites: None
Available: Spring
This course explores the fundamental classification and action of common pharmacologic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of chronic and acutely ill patients. Upon completion, students should be able to demonstrate general knowledge of drugs covered during the course.

**EMS 231 EMS Clinical Practicum III** **0 0 9 3**
Prerequisites: EMS 221 or EMS 222 and COE 121, EMS 210 and EMS 220
Corequisites: EMS 250 and EMS 260
Available: Fall
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 240 Special Needs Patients** **1 2 0 2**
Prerequisites: EMS 120, EMS 121 or EMS 122, EMS 130, and EMS 131
Corequisites: EMS 241
Available: Spring
This course includes concepts of crisis intervention and techniques of dealing with special needs patients and is required for paramedic certification. Topics include behavioral emergencies, abuse, assault, challenged patients, personal well-being, home care, and psychotherapeutic pharmacology. Upon completion, students should be able to recognize and manage frequently encountered special needs patients.

**EMS 241 EMS Clinical Practicum IV** **0 0 9 3**
Prerequisites: EMS 231 or EMS 232 and COE 131, EMS 250, and EMS 260
Corequisites: EMS 240, EMS 270, and EMS 285
Available: Spring
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 250 Advanced Medical Emergencies** **2 3 0 3**
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
Available: Fall
This course presents an in-depth study of medical conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include pulmonology, neurology, endocrinology, anaphylaxis, gastroenterology, toxicology, and environmental emergencies integrating case presentation and emphasizing pharmacotherapeutics. Upon completion, students should be able to recognize and manage frequently encountered medical conditions based upon initial patient impression.

**EMS 260 Advanced Trauma Emergencies** **1 3 0 2**
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
Available: Fall
This course presents 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** **2 2 0 3**
Prerequisites: EMS 120, EMS 130 and EMS 131, EMS 231, EMS 250 and EMS 260
Corequisites: EMS 241
Available: Spring
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 280 EMS Bridging Course** **2 2 0 3**
Prerequisites: Enrollment in EMS Program
Corequisites: None
Available: Spring
This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Topics include patient assessment, documentation, twelve-lead ECG analysis, thrombolytic agents, cardiac pacing, and advanced pharmacology. Upon completion, students should be able to perform advanced patient assessment documentation using the problem-oriented medical record format and manage complicated patients.

**EMS 285 EMS Capstone** **1 3 0 2**
Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260
Corequisites: EMS 241
Available: Spring
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.

## English

**ENG 080 Writing Foundations** **3 2 4**
Prerequisites: ENG 070 or ENG 075 or placement
Corequisites: None
Available: Fall, Spring, Summer
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. This course does not satisfy the developmental writing prerequisite for ENG 111.

**ENG 090 Composition Strategies** **3 0 3**
Prerequisites: ENG 080 or ENG 085 or placement
Corequisites: ENG 090A
Available: Fall, Spring, Summer
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 within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay. This course, with ENG 090A, satisfies the developmental writing prerequisite for ENG 111.

**ENG 090A Composition Strategies Lab** **0 2 1**
Prerequisites: ENG 080 or ENG 085
Corequisites: ENG 090
Available: Fall, Spring, Summer
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 102 Applied Communications II** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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 3**
Prerequisites: ENG 090 and RED 080
Corequisites: None
Available: Fall, Spring
This course is 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 3**
Prerequisites: (ENG 090, ENG 090A and RED 090) or ENG 095, or placement test
Corequisites: None
Available: Fall, Spring, Summer
This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

**ENG 112 Argument-Based Research** **3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring
This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

**ENG 113 Literature-Based Research 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring, Summer
This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

**ENG 114 Professional Research and Reporting 3 0 3**
Prerequisites: ENG 111
Corequisites: Admission to a Major Program or English Department approval
Available: Fall, Spring, Summer
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. Students entering this course should be able to demonstrate in-depth knowledge in a technical field and should anticipate interdepartmental evaluation of course projects. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.

**ENG 125 Creative Writing I 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ENG 126 Creative Writing II 3 0 3**
Prerequisites: ENG 125
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ENG 131 Introduction to Literature 3 0 3**
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
Available: Fall, Spring
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.

**ENG 133 Introduction to the Novel 3 0 3**
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
Available: As Needed
This course provides intensive study of the novel as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of the novel. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing features of the novel. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 134 Introduction to Poetry 3 0 3**
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
Available: As Needed
This course provides intensive study of the poem as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of poetry. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing features of poetry. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ENG 135 Introduction to Short Fiction 3 0 3**
Prerequisites: ENG 111
Corequisites: Select one: ENG 112, ENG 113, ENG 114
Available: As Needed
This course provides intensive study of short fiction as a literary form, based on close reading of representative texts. Emphasis is placed on the development and analysis of short fiction. Upon completion, students should be able to interpret, analyze, and discuss the distinguishing forms of short fiction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 231 American Literature I 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Fall
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 requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts

**ENG 232 American Literature II 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Spring, Summer
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 requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 233 Major American Writers 3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
Available: As Needed
This course provides an intensive study of the works of several major American authors. Emphasis is placed on American history, culture, and the literary merits. Upon completion, students should be able to interpret, analyze, and evaluate the works studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 234 Modern American Poets 3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
Available: As Needed
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 which 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 has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ENG 235 Survey of Film as Literature 3 0 3**
Prerequisites: ENG 113
Corequisites: None
Available: As Needed
This course provides a study of the medium of film with a focus on the historical impact and the various literary genres of movies. Emphasis is placed on an appreciation of film as a form of literature which demonstrates various elements of fiction (character, setting, theme, etc.). Upon completion, students should be able to analyze film critically in various literary contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ENG 241 British Literature I 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Fall, Spring, Summer
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. Reading an eighteenth century novel is required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 242 British Literature II 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Spring
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. Reading a nineteenth century novel is required. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts

**ENG 243 Major British Writers 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: As Needed
This course provides an intensive study of the works of several major British authors. Emphasis is placed on British history, culture, and the literary merits. Upon completion, students should be able to interpret, analyze, and evaluate the works studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 261 World Literature I 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Fall
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings through the seventeenth century. 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 selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 262 World Literature II 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Spring
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the eighteenth century 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 selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**ENG 271 Contemporary Literature 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: As Needed
This course includes a study of contemporary literature. Emphasis is placed on literary and cultural trends of selected texts. Upon completion, students should be able to interpret, analyze, and respond to the literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 272 Southern Literature 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: As Needed
This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 273 African-American Literature 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: As Needed
This course provides a survey of the development of African-American literature from its beginnings to the present. Emphasis is placed on historical and cultural context, themes, literary traditions, and backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and respond to selected texts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 274 Literature by Women 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: As Needed
This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ENG 275 Science Fiction 3 0 3**
Prerequisites: Select one: ENG 112, ENG 113, ENG 114
Corequisites: None
Available: Alternating Spring semesters
This course covers the relationships between science and literature through analysis of short stories and novels. Emphasis is placed on scientific discoveries that shaped Western culture and our changing view of the universe as reflected in science fiction literature. Upon completion, students should be able to trace major themes and ideas and illustrate relationships between science, worldview, and science fiction literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

## Entrepreneurship

**ETR 210 Intro to Entrepreneurship 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides a survey of the starting and operating of an entrepreneurial venture. Topics include new venture creation, the business plan, economics of the business, determining resource needs and acquiring resources, marketing, technology, leadership skills, and business ethics. Upon completion, students should be able to demonstrate an understanding of entrepreneurship concepts and how to use the entrepreneurial mindset to succeed in their careers.

**ETR 215 Law for Entrepreneurs 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces students to basic legal concepts specifically relevant to a business start-up venture. Topics include bailments and documents of title, nature and form of sales, risk and property rights, obligations and performance, business organizations, and agency and employment. Upon completion, students should be able to assess the legal responsibilities of a business start-up.

**ETR 220 Innovation and Creativity 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides a study of developing and enhancing individual and organizational creativity and innovation. Topics include that innovation needs to be applied to products, services, and processes to increase competitive advantages and add value to businesses. Upon completion, students should be able to apply innovation and creativity principles in the work place.

**ETR 230 Entrepreneur Marketing 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the techniques to correctly research and define the target market to increase sales for start up businesses or to expand current businesses. Topics include how to target market and meet customers' needs with a limited budget in the early stages of the life of a start up business. Upon completion, students should be able to demonstrate an understanding of how to correctly target market for a start up business with limited resources.

**ETR 240 Funding for Entrepreneurs 3 0 3**
Prerequisites: ACC 120
Corequisites: None
Available: Fall
This course provides a focus on the financial issues and needs confronting entrepreneurs attempting to grow their businesses by attracting startup and growth capital. Topics include sources of funding, including: angel investors, venture capital, IPOs, private placement, banks, suppliers, buyers, partners, and the government. Upon completion, students should be able to demonstrate an understanding of how to effectively finance a business venture.

**ETR 270 Entrepreneurship Issues 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces current and emerging entrepreneurship issues and opportunities. Topics include franchising, import/export, small business taxes, legal structures, negotiations, contract management, and time management. Upon completion, students should be able to apply a variety of analytical and decision-making requirements to start a new business.

## Fire Protection Technology

**FIP 120 Introduction to Fire Protection 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

**FIP 124 Fire Prevention & Public Education 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

**FIP 128 Detection and Investigation 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

**FIP 132 Building Construction 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistive aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions.

**FIP 136 Inspections & Codes 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

**FIP 140 Industrial Fire Protection 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility's fire protection.

**FIP 152 Fire Protection Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.

**FIP 220 Fire Fighting Strategies 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.

**FIP 224 Instructional Methodology 4 0 4**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 Fire Service Instructor Level Two.

**FIP 228 Local Government Finance 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, taxation, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operation of a department.

**FIP 230 Chemistry of Hazardous Materials I 5 0 5**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.

**FIP 232 Hydraulics & Water Distribution 2 2 3**
Prerequisites: MAT 115, MAT 120, MAT 121, MAT 140, MAT 151, MAT 161, MAT 171, or MAT 175
Corequisites: None
Available: Summer
This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.

**FIP 236 Emergency Management 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course covers the four phases of emergency management: mitigation, preparedness, response, and recovery. Topics include organizing for emergency management, coordinating for community resources, public sector liability, and the roles of government agencies at all levels. Upon completion, students should be able to demonstrate an understanding of comprehensive emergency management and the integrated emergency management system.

**FIP 240 Fire Service Supervision 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers supervisory skills and practices in the fire protection field. Topics include the supervisor's job, supervision skills, the changing work environment, managing change, organizing for results, discipline and grievances, and loss control. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of the effective fire service supervisor.

**FIP 260 Fire Protection Planning 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the need for a comprehensive approach to fire protection planning. Topics include the planning process, using an advisory committee, establishing goals and objectives, and techniques used to approve and implement a plan. Upon completion, students should be able to demonstrate a working knowledge of the concepts and principles of planning as it relates to fire protection.

**FIP 276 Managing Fire Services 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides an overview of fire department operative services. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.

## French

**FRE 111 Elementary French I 3 0 3**
Prerequisites: None
Corequisites: FRE 181
Available: Fall, Spring
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. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 112 Elementary French II 3 0 3**
Prerequisites: FRE 111
Corequisites: FRE 182
Available: Fall, Spring
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. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 181 French Lab 1 0 2 1**
Prerequisites: None
Corequisites: FRE 111
Available: Fall, Spring
This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**FRE 182 French Lab 2 0 2 1**
Prerequisites: FRE 181
Corequisites: FRE 112
Available: As Needed
This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**FRE 211 Intermediate French I 3 0 3**
Prerequisites: FRE 112
Corequisites: None
Available: As Needed
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. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**FRE 212 Intermediate French II 3 0 3**
Prerequisites: FRE 211
Corequisites: None
Available: As Needed
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. Lab practice is expected of students. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

## Film and Video Production

**FVP 250 Production Specialties I** **1 6 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides education and training through contextual learning in the film production areas of art department, camera, sound, grip, electric, locations, script, and continuity. Emphasis is placed on successful professional level interaction with other students and industry professionals through pre-production and initial production of an actual film/video project. Upon completion, students should demonstrate an understanding of the film/video pre-production and initial production process, and the relationship among the departments in these areas. Students will complete projects from the pre-production through post-production phase.

## Geology

**GEL 111 Introductory Geology** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces basic landforms and geological processes. Topics include rocks, minerals, volcanoes, fluvial processes, geological history, plate tectonics, glaciers, and coastal dynamics. Upon completion, students should be able to describe basic geological processes that shape the earth. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

**GEL 113 Historical Geology** **3 2 4**
Prerequisites: GEL 111 or GEL 120
Corequisites: None
Available: Fall
This course covers the geological history of the earth and its life forms. Emphasis is placed on the study of rock strata, fossil groups, and geological time. Upon completion, students should be able to identify major fossil groups and associated rock strata and approximate ages of geological formations. This course has been approved to satisfy the Comprehensive Articulation Agreement general educational core requirement in natural sciences/mathematics.

**GEL 230 Environmental Geology** **3 2 4**
Prerequisites: GEL 111, GEL 120 or PHS 130
Corequisites: None
Available: Spring
This course provides insights into geologic forces that cause environmental changes influencing man's activities. Emphasis is placed on natural hazards and disasters caused by geologic forces. Upon completion, students should be able to relate major hazards and disasters to the geologic forces responsible for their occurrence. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

## Geography

**GEO 111 World Regional Geography** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and 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.

***GEO 112 Cultural Geography** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course is designed to explore the diversity of human cultures and to describe their shared characteristics. Emphasis is placed on the characteristics, distribution, and complexity of earth's cultural patterns. Upon completion, students should be able to demonstrate an understanding of the differences and similarities in human cultural groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

## German

**GER 111 Elementary German I** **3 0 3**
Prerequisites: None
Corequisites: GER 181
Available: As Needed
This course introduces the fundamental elements of the German 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 German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**GER 112 Elementary German II** **3 0 3**
Prerequisites: GER 111
Corequisites: GER 182
Available: As Needed
This course is a continuation of GER 111 focusing on the fundamental elements of the German 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 German and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**GER 141 Culture and Civilization 3 0 3**
Prerequisites: GER 111
Corequisites: None
Available: As Needed
This course, taught in English, provides an opportunity to explore issues related to the German-speaking 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 German-speaking world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**GER 181 German Lab 1 0 2 1**
Prerequisites: None
Corequisites: GER 111
Available: As Needed
This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**GER 182 German Lab 2 0 2 1**
Prerequisites: GER 181
Corequisites: GER 112
Available: As Needed
This course provides an opportunity to enhance acquisition of the fundamental elements of the German language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written German and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**GER 211 Intermediate German I 3 0 3**
Prerequisites: GER 112
Corequisites: None
Available: As Needed
This course provides a review and expansion of the essential skills of the German language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**GER 212 Intermediate German II 3 0 3**
Prerequisites: GER 211
Corequisites: None
Available: As Needed
This course is a continuation of GER 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**GER 221 German Conversation 3 0 3**
Prerequisites: GER 212
Corequisites: None
Available: As Needed
This course provides an opportunity for intensive communication in spoken German. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

## Geographic Information Systems

**GIS 111 Introduction to GIS 2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**GIS 112 Introduction to GPS 2 2 3**
Prerequisites: SRV 110
Corequisites: None
Available: Fall, Spring
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.

**GIS 121 Georeferencing and Mapping 2 2 3**
Prerequisites: GIS 111
Corequisites: None
Available: Fall, Spring
This course introduces coordinate systems, fundamentals of surveying, and cartography. Topics include the theory, acquisition, and use of locational data using both continuous and discrete georeferencing methods. Upon completion, students should be able to identify appropriate coordinate systems for a situation and translate data into correct map form.

**GIS 125 CAD for GIS 2 2 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the concepts of Computer Aided Drafting (CAD) as well as software that is used for building geographic data for a GIS. Emphasis is placed on the learning of basic commands used in building spatial data. Upon completion, students will be able to operate within a CAD environment.

**GIS 215 GIS Data Models** **2 2 3**
Prerequisites: GIS 111
Corequisites: None
Available: Fall, Spring
This course covers interpreting and understanding of a variety data formats available in GIS. Topics include the similarities and differences between data models as well as how data is treated differently within each format, to include the conversion of data between different environments. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GIS data storage and interoperability.

## Health

**HEA 110 Personal Health/Wellness** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**HEA 112 First Aid and CPR** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## Heavy Equipment and Transport Technology

***HET 110 Diesel Engines** **3 9 6**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

***HET 112 Diesel Electrical Systems** **3 6 5**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.

***HET 114 Power Trains** **3 6 5**
Prerequisites: None
Corequisites: None
Available: As Needed
Available: Spring
This course introduces power transmission devices. Topics include function and operation of gears, chains, clutches, planetary gears, drive lines, differentials, and transmissions. Upon completion, students should be able to identify, research specifications, repair, and adjust power train components.

***HET 115 Electronic Engines** **2 3 3**
Prerequisites: None
Corequisites: HET 112
Available: Spring
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.

***HET 116 Air Conditioning/Diesel Equipment** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.

***HET 118 Mechanical Orientation** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the care and safe use of power and hand tools. Topics include micrometers, dial indicators, torque wrenches, drills, taps, dies, screw extractors, thread restorers, and fasteners. Upon completion, students should be able to select and properly use tools for various operations.

***HET 119 Mechanical Transmissions** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

***HET 125 Preventive Maintenance** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

***HET 128 Medium/Heavy Duty Tune-Up 1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces tune-up and troubleshooting according to manufacturers' specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

***HET 231 Medium/Heavy Duty Brake Systems 1 3 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

***HET 233 Suspension and Steering 2 4 4**
Prerequisites: None
Corequisites: None
Available: Summer
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.

## History

**HIS 111 World Civilizations I 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 112 World Civilizations II 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 115 Introduction to Global History 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the study of global history. Emphasis is placed on topics such as colonialism, industrialism, and nationalism. Upon completion, students should be able to analyze significant global historical issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 131 American History I 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 132 American History II 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 162 Women and History 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course surveys 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 covers American women from colonial times to the present. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**HIS 212 Medieval History 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course traces the cultural, political, economic, social, religious, and intellectual history of Europe during the Middle Ages. Topics include the decline of the Roman Empire, the Frankish Kingdoms, the medieval church, feudalism, the rise of national monarchies, urbanization, and the rise of universities. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in medieval Europe. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**HIS 227 Native American History 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course surveys the history and cultures of Native Americans from pre-history to the present. Topics include Native American civilizations, relations with Europeans, and the continuing evolution of Native American cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments among Native Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**HIS 236 North Carolina History 3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
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 pre-major and/or elective course requirement.

## Hotel and Restaurant Management

**HRM 110 Introduction to Hospitality 2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the growth and progress of the hospitality industry. Topics include financing, hotels, restaurants, and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist in the hospitality industry.

***HRM 120 Front Office Procedures 3 0 3**
Prerequisites: None
Corequisites: HRM 120A
Available: Spring
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 service. This course will also examine the housekeeping department of the hotel, its operation and management, and its working relationship with the front office.

***HRM 120A Front Office Procedures Lab 0 2 1**
Prerequisites: None
Corequisites: HRM 120
Available: Spring
This course is laboratory to accompany HRM 120. Emphasis is placed on practical computer applications of theory covered in HRM 120. Upon completion, students should be able to demonstrate a basic proficiency in computer-based, front office applications.

**HRM 124 Introduction to Service Mgt. 2 2 3**
Prerequisites: None
Corequisites: CUL 142
Available: Fall
This course is designed to provide an introduction to the culture of dining room service management. Emphasis is placed on dignity of service work, psychology of service, dining room organization, service delivery and modeling management roles in a dining room environment. Upon completion, students should be able to demonstrate an understanding of the guest/server dynamic and apply these principles in a dining room setting.

***HRM 130 Bed & Breakfast Management 2 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides an overview of the management of bed and breakfast facilities. Emphasis is placed on lifestyle commitment, property needs, computer operations, business and marketing plans, customer service and facility management. Upon completion, students should be able to describe and apply the principles of management unique to the bed and breakfast industry.

***HRM 135 Facilities Management 2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the basic elements of planning and designing hospitality facilities, including their maintenance and upkeep. Topics include equipment and plant preventive maintenance, engineering, interior design, space utilization, remodeling and expansion, and traffic and workflow patterns. Upon completion, students should be able to demonstrate an understanding of the planning, design, and maintenance of hospitality physical plants and equipment.

***HRM 140 Hospitality Tourism Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 210 Meetings and Conventions 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 3 0 3**
Prerequisites: CUL 135, CUL 135A and HRM 124
Corequisites: HRM 215A
Available: Fall
This course provides an overview of the various challenges and responsibilities encountered in managing 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 215A Restaurant Management Lab 0 2 1**
Prerequisites: CUL 135, CUL 135A and HRM 124
Corequisites: HRM 215
Available: Fall
This course is a laboratory to accompany HRM 215. Emphasis is placed on practical applications of restaurant management principles. Upon completion, students should be able to demonstrate a basic proficiency in restaurant management applications.

***HRM 220 Food and Beverage Control** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.

**HRM 225 Beverage Management** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.

***HRM 240 Hospitality Marketing** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.

***HRM 245 Hosp Human Resource Mgt** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course presents a systematic approach to human resource management in the hospitality industry. Topics include labor regulations and laws, hiring, development, discipline, motivation, separation, productivity, and organizational culture. Upon completion, students should be able to apply sound human resource management skills to the hospitality industry.

***HRM 280 Hospitality Management Problems** **3 0 3**
Prerequisites: ACC 120, CIS 110, COE 112, CUL 142, HRM 110, HRM 120, HRM 135, HRM 215, HRM 225, HRM 240, HRM 245
Corequisites: HRM 210
Available: Spring
This course addresses timely issues in the hospitality industry and is intended to move students into managerial thinking. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers.

## Human Services

***HSE 110 Introduction to Human Services** **2 2 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.

***HSE 112 Group Process I** **1 2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.

***HSE 123 Interviewing Techniques** **2 2 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.

***HSE 125 Counseling** **2 2 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem-solving, decision-making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.

***HSE 210 Human Services Issues** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
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 multifaceted 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
Available: Summer
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
Available: Fall
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.

## A.A.S. Humanities/Fine Arts General Education Electives

The following courses are classified as Humanities/Fine Arts for A.A.S. degree programs. A.A.S. students may take any course on this list. College transfer students (A.A., A.S., A.F.A.) should select general education courses listed on pages 120-126 of the catalog.

**ART**
ART 111 Art Appreciation
ART 114 Art History Survey I
ART 115 Art History Survey II
ART 117 Non-Western Art History

**COMMUNICATIONS**
COM 140 Intro to Intercultural Communications

**DRAMA**
DRA 111 Theatre Appreciation
DRA 112 Literature of the Theatre
DRA 122 Oral Interpretation
DRA 124 Readers Theatre
DRA 211 Theatre History I
DRA 212 Theatre History II

**ENGLISH***
ENG 131 Introduction to Literature
ENG 231 American Literature I
ENG 232 American Literature II
ENG 241 British Literature I
ENG 242 British Literature II
ENG 243 Major British Writers
ENG 261 World Literature I
ENG 262 World Literature II
**English literature courses may be taken with advisor's approval. All prerequisites must be met.*

**HUMANITIES**
HUM 110 Technology and Society
HUM 115 Critical Thinking
HUM 120 Cultural Studies
HUM 122 Southern Culture
HUM 123 Appalachian Culture
HUM 130 Myth and Human Culture
HUM 150 American Women's Studies
HUM 160 Introduction to Film
HUM 211 Humanities I
HUM 212 Humanities II
HUM 220 Human Values and Meaning

**MUSIC**
MUS 110 Music Appreciation
MUS 112 Introduction to Jazz
MUS 113 American Music
MUS 114 Non-Western Music

**PHILOSOPHY**
PHI 210 History of Philosophy
PHI 215 Philosophical Issues
PHI 230 Introduction to Logic
PHI 240 Introduction to Ethics

**RELIGION**
REL 110 World Religions
REL 211 Intro to Old Testament
REL 212 Intro to New Testament

## Humanities

**HUM 110 Technology and Society** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

**HUM 115 Critical Thinking** **3 0 3**
Prerequisites: ENG 095 or ENG 090 and RED 090
Corequisites: None
Available: Fall, Spring, Summer
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 120 Cultural Studies** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the distinctive features of a particular culture. Topics include art, history, music, literature, politics, philosophy, and religion. Upon completion, students should be able to appreciate the unique character of the study culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 121 The Nature of America** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides an interdisicplinary 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 122 Southern Culture** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 123 Appalachian Culture** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an interdisciplinary study of the unique features of Appalachian culture. Topics include historical, political, sociological, psychological, and artistic features which distinguish this region. Upon completion, students should be able to demonstrate a broad-based awareness and appreciation of Appalachian culture. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**HUM 130 Myth in Human Culture** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 150 American Women's Studies** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an inter-disciplinary study of the history, literature, and social roles of American women from Colonial times to the present. Emphasis is placed on women's roles as reflected in American language usage, education, law, the workplace, and mainstream culture. Upon completion, students should be able to identify and analyze the roles of women as reflected in various cultural forms. 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 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Attendance at five film showings and an in-depth written analysis of one film are required. Upon completion, students should be able to critically analyze the elements covered in relation to selected films. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 211 Humanities I** **3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall
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 3**
Prerequisites: ENG 111
Corequisites: None
Available: Spring
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 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring, Summer
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.

## Hydraulics

***HYD 110 Hydraulics/Pneumatics I** **2 3 3**
Prerequisites: MAT 070 or Placement Test
Corequisites: None
Available: Spring, Summer
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

**HYD 112 Hydraulics/Medium/Heavy Duty** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.

## Industrial Science

**ISC 115 Construction Safety** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the basic concepts of construction site safety. Topics include ladders, lifting, lock-out/tag-out, personal protective devices, scaffolds, and above/below ground work based on OSHA regulations. Upon completion, students should be able to demonstrate knowledge of applicable safety regulations and safely participate in construction projects.

***ISC 121 Environmental Health and Safety 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers workplace environmental health and safety concepts. 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.

***ISC 132 Mfg Quality Control 2 3 3**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

***ISC 278 cGMP Quality Systems 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course focuses on the development, implementation, and on-going maintenance of a quality system in a cGMP environment. Topics include the cGMP standard, components of cGMP quality systems, quality function roles and training, development of documentation such as SOPs, and system review procedures. Upon completion, the student should be able to identify the components of a quality system and develop a quality system manual utilizing the cGMP standard.

***ISC 279 Auditing for cGMP 2 2 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides basic knowledge in internal audit planning, implementation, and reporting utilizing cGMP as the standard. Topics include auditing basics and types, phases of the audit process, regulatory requirements, auditing tools, auditor qualifications and skills, and behaviors while being audited. Upon completion, students should be able to identify the components of an audit program, develop a plan based on cGMP standards, and demonstrate reporting techniques.

***ISC 280 Validation Fundamentals 1 2 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

## Landscape Architecture

**LAR 210 Prin of Landscape Arch 1 3 2**
Prerequisites: DFT 151
Corequisites: None
Available: Summer
This course introduces the overall principles of landscape design. Topics include principles of landscape design; installation, maintenance, and cost estimates; landscape plans, elevations, and sections; plant selection/lists; and other related topics. Upon completion, students should be able to prepare a simple set of landscape working drawings which are within accepted architectural standards.

**LAR 230 Prin of Exterior Planting 3 3 4**
Prerequisites: None
Corequisites: None
Available: Fall
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 242 Planning and Environment 2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall
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; and when designing buildings and landscapes.

## Machining

**MAC 111 Machining Technology I 2 12 6**
Prerequisites: None
Corequisites: None
Available: Fall
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.

**MAC 112 Machining Technology II 2 12 6**
Prerequisites: MAC 111
Corequisites: None
Available: Spring, Summer
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.

**MAC 113 Machining Technology III** **2 12 6**
Prerequisites: MAC 112
Corequisites: None
Available: Spring, Summer
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.

**MAC 114 Intro to Metrology** **2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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.

**MAC 118 Machine Shop Basic** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Summer
This course will introduce the fundamentals of measuring tools, tolerances, and the basic set up and operations of drill presses, lathes, and milling machines. Emphasis is placed on manufacturing standards and procedures used in welding, automotive, and engineering environments. Upon completion, students should be able to use measuring tools, perform basic machining operations, and apply manufacturing standards.

**MAC 121 Introduction to CNC** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Students will learn computer skills necessary for machinists. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

**MAC 122 CNC Turning** **1 3 2**
Prerequisites: BPR 111
Corequisites: None
Available: Spring
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.

**MAC 124 CNC Milling** **1 3 2**
Prerequisites: BPR 111
Corequisites: None
Available: Fall, Spring
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.

**MAC 151 Machining Calculations** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall
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.

**MAC 152 Advanced Machining Calculations** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
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.

**MAC 222 Advanced CNC Turning** **1 3 2**
Prerequisites: MAC 122
Corequisites: None
Available: Spring, Summer
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.

**MAC 224 Advanced CNC Milling** **1 3 2**
Prerequisites: MAC 124
Corequisites: None
Available: Spring, Summer
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.

**MAC 226 CNC EDM Machining** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the programming, setup, and operation of CNC electrical discharge machines. Topics include programming formats, control functions, program editing, production of parts, and inspection. Upon completion, students should be able to manufacture simple parts using CNC electrical discharge machines.

**MAC 228 Advanced CNC Processes** **2 3 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers advanced programming, setup, and operation of CNC turning centers and CNC milling centers. Topics include advanced programming formats, control functions, program editing, and part production and inspection. Upon completion, students should be able to manufacture complex parts using CNC turning and milling centers.

**MAC 229 CNC Programming** **2 0 2**
Prerequisites: Select one: MAC 121, MAC 122, MAC 124, MAC 226
Corequisites: None
Available: As Needed
This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory.

**MAC 231 CNC Graphics Prog: Turning** **1 4 3**
Prerequisites: MAC 121 or MAC 122
Corequisites: None
Available: As Needed
This course introduces Computer Numerical Control graphics programming and concepts for turning center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, students should be able to develop a job plan using CAM software, include machine selection, tool selection, operational sequence, speed, feed, and cutting depth.

**MAC 234 Adv Four/Five-Axis Machin** **3 9 6**
Prerequisites: None
Corequisites: None
Available: As Needed
This course specializes in four- and five-axis machining using machining centers with full four- and five-axis capabilities. Emphasis is placed on generation of machining center output with a CAM system and setup and operation of pallet changer and rotary system for five-axis machining. Upon completion, students should be able to convert CAD to output for four- and five-axis machining centers, including tooling, setup, and debugging processes.

**MAC 241 Jigs and Fixtures I** **2 6 4**
Prerequisites: MAC 112
Corequisites: None
Available: Summer
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.

**MAC 245 Mold Construction I** **2 6 4**
Prerequisites: MAC 112
Corequisites: None
Available: Fall, Spring
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.

**MAC 247 Production Tooling** **2 0 2**
Prerequisites: MAC 111
Corequisites: None
Available: Fall, Summer
This course provides advanced study in tooling currently utilized in the production of metal parts. Emphasis is placed on the proper use of tooling used on CNC and other production machine tools. Upon completion, students should be able to choose proper tool grades based on manufacturing requirements and troubleshoot carbide tooling problems.

## Mathematics

**MAT 060 Essential Mathematics** **3 2 4**
Prerequisites: MAT 050 or placement
Corequisites: RED 080 or placement
Available: Fall, Spring, Summer
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. The operation of a scientific calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 070 Introductory Algebra** **3 2 4**
Prerequisites: MAT 060 or placement
Corequisites: RED 080 or ENG 085 or placement
Available: Fall, Spring, Summer
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. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 080 Intermediate Algebra** **3 2 4**
Prerequisites: MAT 070 or placement
Corequisites: RED 080 or ENG 085 or placement
Available: Fall, Spring, Summer
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. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 090 Accelerated Algebra** **3 2 4**
Prerequisites: MAT 060
Corequisites: RED 080 or ENG 085
Available: Fall, Spring, Summer
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.

**MAT 110 Mathematical Measurement** **2 2 3**
Prerequisites: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
Available: Spring
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.

**MAT 115 Mathematical Models 2 2 3**
Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
Available: Fall, Spring, Summer
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, 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.

**MAT 121 Algebra/Trigonometry I 2 2 3**
Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095
Corequisites: None
Available: Fall, Spring
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 equation; 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.

**MAT 122 Algebra/Trigonometry II 2 2 3**
Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
Available: Fall, Spring
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.

**MAT 140 Survey of Mathematics 3 0 3**
Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: None
Available: Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 151 Statistics I 3 0 3**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: MAT 151A
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative option).

**MAT 151A Statistics I Lab 0 2 1**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175
Corequisites: MAT 151
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 161 College Algebra 3 0 3**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095
Corequisites: MAT 161A
This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on applications involving 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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics for the A.A. degree.

**MAT 161A College Algebra Lab 0 2 1**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095
Corequisites: MAT 161
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 167 Discrete Mathematics 3 0 3**
Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 280
Corequisites: None
Available: As Needed
This course is a study of discrete mathematics with emphasis on applications. Topics include number systems, combinations/permutations, mathematical logic/proofs, sets/counting, Boolean algebra, mathematical induction, trees/graphs, and algorithms. Upon completion, students should be able to demonstrate competence in the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 171 Precalculus Algebra 3 0 3**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161
Corequisites: MAT 171A
Available: Fall, Spring
This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 171A Precalculus Algebra Lab 0 2 1**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161
Corequisites: MAT 171
Available: Fall, Spring
This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 172 Precalculus Trigonometry 3 0 3**
Prerequisites: MAT 171
Corequisites: MAT 172A
Available: Fall, Spring, Summer
This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 172A Precalculus Trigonometry Lab 0 2 1**
Prerequisites: MAT 171
Corequisites: MAT 172
Available: Fall, Spring, Summer
This course is a laboratory for MAT 172. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 175 Precalculus 4 0 4**
Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 121, MAT 161, MAT 171
Corequisites: None
Available: Fall
This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 223 Applied Calculus 2 2 3**
Prerequisites: MAT 122
Corequisites: None
Available: As Needed
This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results.

**MAT 271 Calculus I 3 2 4**
Prerequisites: MAT 172 or MAT 175
Corequisites: None
Available: Fall, Spring, Summer
This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 272 Calculus II 3 2 4**
Prerequisites: MAT 271
Corequisites: None
Available: Fall, Spring
This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 273 Calculus III 3 2 4**
Prerequisites: MAT 272
Corequisites: None
Available: Fall, Spring
This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 280 Linear Algebra 3 0 3**
Prerequisites: MAT 271
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**MAT 285 Differential Equations** **3 0 3**
Prerequisites: MAT 272
Corequisites: None
Available: Summer
This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first order, linear higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model physical phenomena, solve the equations, and use the solutions to analyze the phenomena. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## Mechanical

**MEC 110 Introduction to CAD/CAM** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Summer
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 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
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 161 Manufacturing Processes I** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course provides the fundamental principles of value-added processing of materials into usable forms for the customer. Topics include material properties and traditional and non-traditional manufacturing processes. Upon completion, students should be able to specify appropriate manufacturing processing for common engineering materials.

***MEC 180 Engineering Materials** **2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the physical and mechanical properties of materials. Topics include testing, heat treating, ferrous and non-ferrous metals, plastics, composites, and material selection. Upon completion, students should be able to specify basic tests and properties and select appropriate materials on the basis of specific properties.

***MEC 231 Computer-Aided Manufacturing I** **1 4 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces computer-aided manufacturing (CAM) applications and concepts. Emphasis is placed on developing/defining part geometry and the processing information needed to manufacture parts. Upon completion, students should be able to demonstrate skills in defining part geometry, program development, and code generation using CAM software.

***MEC 232 Computer-Aided Manufacturing II** **1 4 3**
Prerequisites: MEC 231
Corequisites: None
Available: Spring
This course provides an in-depth study of CAM applications and concepts. Emphasis is placed on the manufacturing of complex parts using computer-aided manufacturing software. Upon completion, students should be able to manufacture complex parts using CAM software.

***MEC 260 Fundamentals of Machine Design** **2 3 3**
Prerequisites: CIV 110
Corequisites: None
Available: Spring
This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make component selections from manufacturers' catalogs.

## Medical Assisting/Transcription

**MED 110 Orientation to Med Assist** **1 0 0 1**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.

**MED 118 Medical Law and Ethics** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed, consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.

**MED 120 Survey of Medical Terminology** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.

**MED 121 Medical Terminology I** **3 0 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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** **3 0 0 3**
Prerequisites: MED 121
Corequisites: None
Available: Spring, Summer
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 Admin Office Proc I** **1 2 0 2**
Prerequisites: Enrollment in Medical Assisting program.
Corequisites: None
Available: Fall
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 Admin Office Proc II** **1 2 0 2**
Prerequisites: MED 130
Corequisites: None
Available: Spring
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 138 Infection/Hazard Control** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the student to infection and hazard control procedures necessary for the healthcare worker. Topics include introduction to microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSH standards, and applicable North Carolina laws. Upon completion, students should be able to: understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSH standards, and applicable North Carolina laws.

**MED 140 Exam Room Procedures I** **3 4 0 5**
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
Available: Spring
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** **3 4 0 5**
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
Available: Fall
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 180 CPR Certification** **0 2 0 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides the basic knowledge and skills necessary to perform infant, child, and adult CPR and to manage foreign body airway obstruction. Emphasis is placed on triage, assessment, and proper management of emergency care. Upon completion, students should be able to perform the infant, child, and adult CPR.

**MED 182 CPR First Aid & Emergency** **1 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides the basic knowledge and skills necessary to perform basic CPR, first aid, and medical emergency care related to the clinical, home, office, and recreational setting. Emphasis is placed on triage, assessment, and proper management of emergency care. Upon completion, students should be able to demonstrate basic CPR, first aid, and medical emergency care.

**MED 240 Exam Room Procedures II** **3 4 0 5**
Prerequisites: MED 140
Corequisites: None
Available: Fall
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 MED Clinical Externship** **0 1 5 5**
Prerequisites: MED 150 and MED 240
Corequisites: None
Available: Spring
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** **1 0 0 1**
Prerequisites: None
Corequisites: MED 260
Available: Spring
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 Med Assisting Overview** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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** **2 2 0 3**
Prerequisites: MED 131 and MED 140
Corequisites: None
Available: Summer
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** **3 0 0 3**
Prerequisites: MED 131 and MED 140
Corequisites: None
Available: Summer
This course focuses on major drug groups, including their side effects, interactions, methods of administration, and proper documentation. Emphasis is placed on the theory of drug administration. Upon completion, students should be able to identify, spell, recognize side effects of, and document the most commonly used medications in a physician's office.

**MED 274 Diet Therapy/Nutrition** **3 0 0 3**
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
Available: Spring
This course introduces the basic principles of nutrition as they relate to health and disease. Topics include basic nutrients, physiology, dietary deficiencies, weight management, and therapeutic nutrition in wellness and disease. Upon completion, students should be able to interpret clinical and dietary data and provide patient counseling and education.

**MED 276 Patient Education** **1 2 0 2**
Prerequisites: MED 150 and MED 240
Corequisites: None
Available: Spring
This course is designed to provide communication skills, basic education principles, and knowledge of available community resources and to apply this knowledge to the clinical setting. Emphasis is placed on identifying appropriate community resources, developing patient education materials, and perfecting written and oral communication skills. Upon completion, students should be able to instruct, communicate effectively, and act as a liaison between the patient and community agencies.

## Mental Health

**MHA 238 Psychopathology** **3 0 0 3**
Prerequisites: PSY 281
Corequisites: None
Available: Spring
This course examines the development and use of the DSM/ICD in the mental health setting to establish a common language. Emphasis is placed on history, terminology, and assessment practices associated with the DSMIV/ICD in the treatment of psychological disorders. Upon completion, students should be able to explain the core vocabulary of treatment approaches and their applications.

## Marketing and Retailing

**MKT 120 Principles of Marketing** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 121 Retailing** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing.

**MKT 122 Visual Merchandising** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

**MKT 123 Fundamentals of Selling** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered.

**MKT 220 Advertising and Sales Promotion** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

**MKT 221 Consumer Behavior** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
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 224 International Marketing** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

**MKT 225 Marketing Research** **3 0 3**
Prerequisites: MKT 120
Corequisites: None
Available: Spring
This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

**MKT 227 Marketing Applications** **3 0 3**
Prerequisites: MKT 120 and MKT 123
Corequisites: None
Available: Spring
This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

**MKT 229 Special Events Production** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the different objectives of various special events and the procedures and elements necessary for successful promotional activity. Emphasis is placed on planning, budgeting, promoting, and coordinating activities. Upon completion, students should be able to utilize the elements studied in the production of special events.

## Medical Laboratory Technology

**MLT 110 Introduction to MLT** **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
Available: Fall
This course is designed to introduce 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 & Body Fluids** **1 3 0 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
Available: Summer
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 120 Hematology/Hemostasis** **3 3 0 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
Available: Spring
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.

**MLT 126 Immunology and Serology** **1 2 0 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
Available: Spring
This course introduces the immune system and response and basic concepts of antigens, antibodies, and their reactions. Emphasis is placed on basic principles of immunologic and serodiagnostic techniques and concepts of cellular and humoral immunity in health and disease. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing and interpreting routine immunologic and serodiagnostic procedures.

**MLT 127 Transfusion Medicine** **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 126
Corequisites: None
Available: Summer
This course introduces the blood group systems and their applications in transfusion medicine. Emphasis is placed on blood bank techniques including blood grouping and typing, pre-transfusion testing, donor selection and processing, and blood component preparation and therapy. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing/interpreting routine blood bank procedures and recognizing/resolving common problems.

**MLT 130 Clinical Chemistry** **3 3 0 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program, CHM 130, and CHM 130A
Corequisites: None
Available: Spring
This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

**MLT 140 Introduction to Microbiology** **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
Available: Fall
This course is designed to introduce 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.

**MLT 215 Professional Issues 1 0 0 1**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
Available: Spring
This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.

**MLT 240 Special Clinic Microbiology 2 3 0 3**
Prerequisites: MLT 140
Corequisites: None
Available: Spring
This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

***MLT 252 MLT Practicum I** 0 0 6 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 120, MLT 126, MLT 130, MLT 240, BIO 163, CHM 130, and CHM 130A
Corequisites: MLT 111 and MLT 127
Available: Summer
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. Concentration will be in the area of Phlebotomy.

***MLT 254 MLT Practicum I** 0 0 12 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
Available: Fall
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. Concentration will be in the area of blood banking.

***MLT 255 MLT Practicum I** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
Available: Fall
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. Concentration will be in the area of microbiology.

***MLT 261 MLT Practicum II** 0 0 3 1**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
Available: Fall
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. Concentration will be in the area of donors and component therapy.

***MLT 265 MLT Practicum II** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
Available: Spring
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. Concentration will be in the area of hematology.

***MLT 275 MLT Practicum III** 0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
Available: Spring
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. Concentration will be in the area of clinical chemistry. ** MLT 252, 254, 255, 261, 265, 275 Because of clinical space restrictions, students will have individual schedules for MLT Practicums. Students will register for these courses as assigned by the department chairperson. During each student's first clinical experience course, general hospital orientation will be covered.

## Maintenance

***MNT 110 Intro to Maint Procedures 1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

***MNT 111 Maintenance Practices 2 2 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

## Magnetic Resonance Imaging

**MRI 210 MRI Physics and Equipment 3 0 0 3**
Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs
Corequisites: None
Available: Spring
This course covers the physical principles of image formation, data acquisition, and image processing in magnetic resonance imaging. Emphasis is placed on instrumentation, fundamentals, pulse sequences, data manipulation, imaging parameters, options, and their effects on image quality. Upon completion, students should be able to understand the principles behind image formation, data acquisition, and image processing in magnetic resonance imaging.

**MRI 211 MRI Procedures** **4 0 0 4**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers patient care, magnetic field safety, cross-sectional anatomy, contrast media, and scanning procedures in magnetic resonance imaging. Emphasis is placed on patient assessment and monitoring, safety precautions, contrast agents' use, methods of data acquisition, and identification of cross-sectional anatomy. Upon completion, students should be able to integrate all facets of image processing in magnetic resonance imaging.

**MRI 225 MRI Clinical Practicum** **0 0 15 5**
Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs
Corequisites: None
Available: Spring
This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

**MRI 226 MRI Clinical Practicum** **0 0 18 6**
Prerequisites: Enrollment in CT/MRI diploma or MRI certificate programs
Corequisites: None
Available: Fall, Spring
This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

## Therapeutic Massage

**MTH 110 Fundamentals of Massage** **6 9 3 10**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces concepts basic to the role of the massage therapist in a variety of clinical settings. Emphasis is placed on beginning theory and techniques of body work as well as skill in therapeutic touch. Upon completion of the course, the student should be able to apply basic practical massage therapy skills.

**MTH 120 Therapeutic Massage Applications** **6 9 3 10**
Prerequisites: MTH 110
Corequisites: None
Available: Spring, Summer
This course provides an expanded knowledge and skill base for the massage therapist in a variety of clinical settings. Emphasis is placed on selected therapeutic approaches throughout the lifespan. Upon completion, students should be able to perform entry level therapeutic massage on various populations.

**MTH 125 Ethics of Massage** **2 0 0 2**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
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.

**MTH 210 Advanced Skills of Massage** **4 9 3 8**
Prerequisites: MTH 120 or MTH 121
Corequisites: None
Available: Fall, Summer
This course provides knowledge and skills in diverse body work modalities in a variety of clinical settings. Emphasis is placed on selected techniques such as Neuromuscular Therapy, Sports Massage, Soft Tissue Release, Spa Approaches, Oriental Therapies, and energy techniques. Upon completion, students should be able to perform basic skills in techniques covered.

**MTH 220 Outcome-Based Massage** **4 6 3 7**
Prerequisites: MTH 120, MTH 121, or MTH 221
Corequisites: None
Available: Fall, Spring
This course provides knowledge and skills in more complex body works modalities in a variety of clinical settings. Emphasis is placed on developing advanced skills in outcome-based Massage. Upon completion, students should be able to perform basic skills in techniques covered.

## Music

**MUS 110 Music Appreciation** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**MUS 112 Introduction to Jazz** **3 0 3**
Prerequisites: None
Corequisites:None
Available: Fall, Spring
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 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides a basic survey of the music of the non-Western world. Emphasis is placed on nontraditional 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 121 Music Theory I** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall
This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MUS 122 Music Theory II** **3 2 4**
Prerequisites: MUS 121
Corequisites: None
Available: Spring
This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MUS 131 Chorus I** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 132 Chorus II** **0 2 1**
Prerequisites: MUS 131
Corequisites: None
Available: Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 221 Music Theory III** **3 2 4**
Prerequisites: MUS 122
Corequisites: None
Available: As Needed
This course is a continuation of MUS 122. Emphasis is placed on altered and chromatic harmony, common practice era compositional techniques and forms, and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 222 Music Theory IV** **3 2 4**
Prerequisites: MUS 221
Corequisites: None
Available: As Needed
This course is a continuation of studies begun in MUS 221. Emphasis is placed on continued study of common practice era compositional techniques and forms, 20th century practices, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 231 Chorus III** **0 2 1**
Prerequisites: MUS 132
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**MUS 232 Chorus IV** **0 2 1**
Prerequisites: MUS 231
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

## Networking Technology

**NET 110 Networking Concepts** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This course is also available through the Virtual Learning Community (VLC).

**NET 125 Networking Basics** **1 4 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This is the first course in the Cisco Networking Academy's CCNA sequence.

**NET 126 Routing Basics** **1 4 3**
Prerequisites: NET 125
Corequisites: None
Available: Spring
This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs. This is the second course in the Cisco Networking Academy's CCNA sequence.

**NET 175 Wireless Technology** **2 2 3**
Prerequisites: NET 110 or NET 125 and NET 126
Corequisites: None
Available: Fall, Spring
This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications. This is a Cisco Networking Academy course.

**NET 225 Routing and Switching I** **1 4 3**
Prerequisites: NET 126
Corequisites: None
Available: Fall
This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in pre-requisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP. This is the third course in the Cisco Networking Academy's CCNA sequence.

**NET 226 Routing and Switching II** **1 4 3**
Prerequisites: NET 225
Corequisites: None
Available: Spring
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol. This is the fourth course in the Cisco Networking Academy's CCNA sequence.

**NET 289 Networking Project** **1 4 3**
Prerequisites: NOS 220 and NOS 231
Corequisites: NET 226
Available: Summer
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.

## Networking Operating Systems

**NOS 110 Operating Systems Concepts** **2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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. The course will include file management and simple user creation under at least two operating systems.

**NOS 120 Linux/UNIX Single User** **2 2 3**
Prerequisites: NOS 110
Corequisites: None
Available: Spring, Summer
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. This is a Red Hat Academy course.

**NOS 130 Windows Single User** **2 2 3**
Prerequisites: NOS 110
Corequisites: None
Available: Fall, Spring, Summer
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

**NOS 220 Linux/UNIX Admin I** **2 2 3**
Prerequisites: NOS 120
Corequisites: None
Available: Fall, Summer
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. This is a Red Hat Academy course.

**NOS 221 Linux/UNIX Admin II** **2 2 3**
Prerequisites: NOS 220
Corequisites: None
Available: Fall
This course includes skill-building in configuring common network services and security administration using Linux. Topics include server-side setup, configuration, basic administration of common networking services, and security administration using Linux. Upon completion, students should be able to setup a Linux server and configure common network services including security requirements. This is a Red Hat Academy course.

**NOS 230 Windows Admin I** **2 2 3**
Prerequisites: NOS 130
Corequisites: None
Available: Fall, Summer
This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

**NOS 231 Windows Admin II** **2 2 3**
Prerequisites: NOS 230
Corequisites: None
Available: Fall
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** **2 2 3**
Prerequisites: NOS 231
Corequisites: None
Available: Spring
This course covers implementing and administering security in a Windows Server network. Topics include implementing, managing, and trouble shooting 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.

## Nursing

***NUR 101 Practical Nursing I** **7 6 6 11**
Prerequisites: Admission into the Practical Nursing program
Corequisites: BIO 168 and PSY 150
Available: Fall
This course introduces concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, legal/ethical/professional issues, wellness/illness patterns, and basic nursing skills. Upon completion, students should be able to demonstrate beginning understanding of nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

***NUR 102 Practical Nursing II** **8 0 12 12**
Prerequisites: BIO 168 and NUR 101
Corequisites: ENG 111 and BIO 169
Available: Spring
This course includes more advanced concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, delegation, cost effectiveness, legal/ethical/professional issues, and wellness/illness patterns. Upon completion, students should be able to begin participating in the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

***NUR 103 Practical Nursing III** **6 0 12 10**
Prerequisites: BIO 169, PSY 150, ENG 111, and NUR 102
Corequisites: None
Available: Summer
This course focuses on use of nursing/related concepts by practical nurses as providers of care/members of discipline in collaboration with health team members. Emphasis is placed on the nursing process, wellness/illness patterns, entry level issues, accountability, advocacy, professional development, evolving technology, and changing health care delivery systems. Upon completion, students should be able to use the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. This is a diploma-level course.

***NUR 115 Fundamentals of Nursing** **2 3 6 5**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: BIO 168, NUR 117, and NUR 133
Available: Fall
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 117 Pharmacology** **1 3 0 2**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: BIO 168, NUR 115, and NUR 133
Available: Fall
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** **5 3 6 8**
Prerequisites: NUR 115, NUR 135 and BIO 169
Corequisites: None
Available: Fall, Summer
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** **2 3 0 3**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: None
Available: Fall, Spring for Advanced Placement applicants
This course provides theory and application experience for performing nursing assessment of individuals across the life span. 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 non-invasive physical assessment.

***NUR 135 Adult Nursing I** **5 3 9 9**
Prerequisites: BIO 168, NUR 115, NUR 117, and NUR 133
Corequisites: BIO 169
Available: Spring
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** **3 0 6 5**
Prerequisites: NUR 115, NUR 135 and BIO 169
Corequisites: None
Available: Fall, Summer
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** **4 3 15 10**
Prerequisites: NUR 125 and NUR 255
Corequisites: None
Available: Spring
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 multi-disciplinary 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.

***NUR 255 Professional Issues** **3 0 0 3**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: None
Available: Fall
This course explores basic concepts of practice in the management of patient care in a complex health care system. Emphasis is placed on professional, legal, ethical, and political issues and management concepts. Upon completion, students should be able to articulate professional and management concepts.

## Office Administration

**OST 131 Keyboarding** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. Students should be able to complete timed writing competencies consisting of three timed writings at 25 nwam for three minutes with three or fewer errors and 160 keystrokes per minute for two minutes with two or less errors on the numeric keypad using the touch system.

**OST 132 Keyboard Skill Building** **1 2 2**
Prerequisites: OST 134
Corequisites: None
Available: Spring, Summer
This course is designed to increase speed and improve accuracy in keyboarding. 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. Students should be able to complete timed writing competencies consisting of three timed writings at 50 nwam for five minutes with five or fewer errors using the touch system.

**OST 134 Text Entry and Formatting** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is designed to provide 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 documents and key timed writings at speeds commensurate with employability. Students should be able to complete timed writing competencies consisting of three timed writings at 40 nwam for five minutes with five or fewer errors using the touch system.

**OST 136 Word Processing** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is designed to introduce 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. Upon course entrance, a keyboarding proficiency test requiring 25 gwam at 98 percent accuracy using the touch system will be administered.

**OST 137 Office Software Applications** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment.

**OST 141 Med Terms I-Med Office 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
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 Med Terms II-Med Office 3 0 3**
Prerequisites: OST 141
Corequisites: None
Available: Spring
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 Med Coding Billing & Insu 3 0 3**
Prerequisites: CIS 110 and MED 121
Corequisites: None
Available: Fall, Spring
This course introduces fundamentals of medical coding, billing, and insurance. Emphasis is placed on the medical billing cycle to include third party payers, coding concepts, and form preparation. Upon completion, students should be able to explain the life cycle of and accurately complete a medical insurance claim.

***OST 149 Medical Legal Issues 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring, Summer
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

**OST 164 Text Editing Applications 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text.

**OST 184 Records Management 2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system.

**OST 201 Medical Transcription I 3 2 4**
Prerequisites: OST 136 and OST 164
Corequisites: MED 122 or OST 142; and OST 164
Available: Fall, Spring
This course introduces dictating equipment and typical medical dictation. Emphasis is placed on efficient use of equipment, dictionaries, PDRs, and other reference materials. Upon completion, students should be able to efficiently operate dictating equipment and to accurately transcribe a variety of medical documents in a specified time.

***OST 202 Medical Transcription II 3 2 4**
Prerequisites: OST 201
Corequisites: None
Available: Summer
This course provides additional practice in transcribing documents from various medical specialties. Emphasis is placed on increasing transcription speed and accuracy and understanding medical procedures and terminology. Upon completion, students should be able to accurately transcribe a variety of medical documents in a specified time.

**OST 233 Office Publications Design 2 2 3**
Prerequisites: OST 136
Corequisites: None
Available: Spring
This course provides entry-level skills in using software with desktop publishing capabilities. Topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to design and produce professional business documents and publications.

**OST 243 Med Office Simulation 2 2 3**
Prerequisites: OST 148
Corequisites: None
Available: Spring, Summer
This course introduces medical systems used to process information in the automated office. Topics include traditional and electronic information resources, storing and retrieving information, and the billing cycle. Upon completion, students should be able to use the computer accurately to schedule, bill, update, and make corrections.

**OST 247 Procedure Coding 1 2 2**
Prerequisites: MED 121 or OST 141
Corequisites: None
Available: Summer
This course provides in-depth coverage of procedural coding. Emphasis is placed on CPT and HCPCS coding systems. Upon completion, students should be able to properly code procedures and services performed in a medical facility.

**OST 248 Diagnostic Coding 1 2 2**
Prerequisites: MED 121 or OST 141
Corequisites: None
Available: Summer
This course provides an in-depth study of diagnostic coding. Emphasis is placed on ICD-9-CM coding systems. Upon completion, students should be able to apply the principles of diagnostic coding in the physician's office.

***OST 286 Professional Development** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Summer
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy life-styles, 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 Administrative Office Mgt** **2 2 3**
Prerequisites: OST 164 and either OST 134 or OST 136
Corequisites: None
Available: Spring, Summer
This course is designed to be a capstone course for the office professional and provides a working knowledge of modern office procedures. Emphasis is placed on scheduling, telephone procedures, travel arrangements, event planning, office design, and ergonomics. Upon completion, students should be able to adapt in an office environment.

## Phlebotomy

***PBT 100 Phlebotomy Technology** **5 2 0 6**
Prerequisites: Enrollment in the Phlebotomy Technology program and RED 090
Corequisites: PBT 101
Available: Fall, Spring
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. This is a certificate-level course.

***PBT 101 Phlebotomy Practicum** **0 0 9 3**
Prerequisites: Enrollment in the Phlebotomy Technology program
Corequisites: PBT 100
Available: Fall, Spring
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. This is a certificate-level course.

## Professional Crafts: Sculpture

**PCS 110 Intro to Metal Sculpture** **2 9 5**
Prerequisites: PCS 112
Corequisites: None
Available: Fall
This course introduces the process and design of metal sculpture for the crafts-man. Topics include design of metal sculpture, layout, construction, and fin-ishing. Upon completion, students should be able to demonstrate the ability to design and construct metal sculptures.

**PCS 112 Beg. Welding for Artists** **1 4 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course is an introduction to the proper equipment and tools of the metal shop and welding methods for the artist. Topics include welding, cutting, forg-ing, fabricating and finishing, and studio safety. Upon completion, students will be able to demonstrate efficient and safe use of metal shop tools and equipment.

## Professional Crafts: Jewelry

**PCJ 262 Hand Wrought Metals** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course covers the fundamental processes, techniques and tools for heating and forging ferrous and non-ferrous metals. Topics include fire control, use of hammers, tools and traditional techniques for metal shaping. Upon completion, students should be able to heat and use a variety of metals to create tools and shape basic metal projects.

## Physical Education

**PED 110 Fit and Well for Life** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 113 Aerobics I** **0 3 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 114 Aerobics II** **0 3 1**
Prerequisites: PED 113
Corequisites: None
Available: Fall, Spring
This course provides a continuation of a program of cardiovascular fitness involving rhythmic exercise. Emphasis is placed on a wide variety of aerobic activities which include cardiovascular efficiency, strength, and flexibility. Upon completion, students should be able to participate in and design a rhythmic aerobic exercise routine. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 117 Weight Training I** **0 3 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 118 Weight Training II** **0 3 1**
Prerequisites: PED 117
Corequisites: None
Available: Fall, Spring
This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 119 Circuit Training** **0 3 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers the skills necessary to participate in a developmental fitness program. Emphasis is placed on the circuit training method which involves a series of conditioning timed stations arranged for maximum benefit and variety. Upon completion, students should be able to understand and appreciate the role of circuit training as a means to develop fitness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 120 Walking for Fitness** **0 3 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 121 Walk, Jog, Run** **0 3 1**
Prerequisites: None
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 122 Yoga I** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 123 Yoga II** **0 2 1**
Prerequisites: PED 122
Corequisites: None
Available: As Needed
This course introduces more detailed aspects of the discipline of yoga. Topics include breathing and physical postures, relaxation, and mental concentration. Upon completion, students should be able to demonstrate advanced procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 125 Self-Defense - Beginning** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is designed to aid students in developing rudimentary skills in self-defense. Emphasis is placed on stances, blocks, punches, and kicks as well as non-physical means of self-defense. Upon completion, students should be able to demonstrate basic self-defense techniques of a physical and non-physical nature. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 126 Self-Defense - Intermediate** **0 2 1**
Prerequisites: PED 125
Corequisites: None
Available: As Needed
This course is designed to aid students in building on the techniques and skills developed in PED 125. Emphasis is placed on the appropriate psychological and physiological responses to various encounters. Upon completion, students should be able to demonstrate intermediate skills in self-defense stances, blocks, punches, and kick combinations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 128 Golf - Beginning** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 130 Tennis - Beginning** **0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 137 Badminton 0 2 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers the fundamentals of badminton. Emphasis is placed on the basics of serving, clears, drops, drives, smashes, and the rules and strategies of singles and doubles. Upon completion, students should be able to apply these skills in playing situations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 142 Lifetime Sports 0 2 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course is designed to give an overview of a variety of sports activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime sports. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime sports activities. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 143 Volleyball - Beginning 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 145 Basketball - Beginning 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 170 Backpacking 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course covers the proper techniques for establishing a campsite, navigating in the wilderness, and planning for an overnight trip. Topics include planning for meals, proper use of maps and compass, and packing and dressing for extended periods in the outdoors. Upon completion, students should be able to identify quality backpacking equipment, identify the principles of no-trace camping, and successfully complete a backpacking experience. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 171 Nature Hiking 0 2 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 186 Dancing for Fitness 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course is designed to develop movement and recreational dance skills, safety, fitness, coordination, and techniques used to teach various groups. Emphasis is placed on participation and practice with adapting dances for ages and ability levels. Upon completion, students should be able to demonstrate knowledge of fitness through social, folk, and square dance participation and instruction. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**PED 215 Outdoor Cycling 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall
This course is designed to promote physical fitness through cycling. Emphasis is placed on selection and maintenance of the bicycle, gear shifting, pedaling techniques, safety procedures, and conditioning exercises necessary for cycling. Upon completion, students should be able to demonstrate safe handling of a bicycle for recreational use. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 217 Pilates I 0 2 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an introduction to the Pilates method of body conditioning exercise. Topics include instruction in beginning and intermediate Pilates exercises using a mat or equipment, history of the Pilates method, and relevant anatomy and physiology. Upon completion, students should be able to perform beginning and intermediate exercises, and posses an understanding of the benefits of conditioning the body's core muscles. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 218 Pilates II 0 2 1**
Prerequisites: PED 217
Corequisites: None
Available: As Needed
This course provides continued instruction to the Pilates method of body conditioning exercise. Topics include instruction in intermediate and advanced Pilates exercises using a mat or equipment, relevant anatomy and physiology, and further discussion of related concepts. Upon completion, students should be able to perform intermediate and advanced exercises, and possess the autonomy to maintain their own personal Pilates practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 220 Exercise for Physically Challenged 0 2 1**
Prerequisites: None
Corequisites: None
Available: As Needed
This course is designed to improve physical strength, endurance, and range of motion while focusing on individual needs. Emphasis is placed on exercises which are designed and adapted to serve those with special needs. Upon completion, students should be able to show improved physical fitness, body awareness, and an appreciation for their physical well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 230 Shotokan Karate 0 3 1**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces martial arts using the Shotokan Karate form. Topics include proper conditioning exercises, proper terminology, historical foundations, etiquette and drills. Upon completion, students should be able to perform skills and techniques related to this form of martial arts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 240 Advanced PE Skills 0 2 1**
Prerequisites: Instructor Consent Required
Corequisites: None
Available: As Needed
This course provides those who have mastered skills in a particular physical education area the opportunity to assist with instruction. Emphasis is placed on methods of instruction, class organization, and progressive skill development. Upon completion, students should be able to design, develop, and implement a unit lesson plan for a skill they have mastered. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

## Philosophy

**PHI 210 History of Philosophy 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: As Needed
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**PHI 215 Philosophical Issues 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**PHI 230 Introduction to Logic 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**PHI 240 Introduction to Ethics 3 0 3**
Prerequisites: ENG 111
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

## Physical Science

**PHS 140 Weather and Climate 3 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the nature, origin, processes, and dynamics of the earth's atmospheric environment. Topics include general weather patterns, climate, and ecological influences on the atmosphere. Upon completion, students should be able to demonstrate an understanding of weather formation, precipitation, storm patterns, and processes of atmospheric pollution. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## Physics

**PHY 110 Conceptual Physics 3 0 3**
Prerequisites: None
Corequisites: PHY 110A
Available: Fall, Spring, Summer
This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied. Nonmathematical discussions of concepts and practical applications will be stressed. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**PHY 110A Conceptual Physics Lab** **0 2 1**
Prerequisites: None
Corequisites: PHY 110
Available: Fall, Spring, Summer
This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**PHY 121 Applied Physics I** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 122 Applied Physics II** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall
This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Emphasis is placed on systems of units, problem-solving methods, graphical analysis, static electricity, AC and DC circuits, magnetism, transformers, AC and DC motors, and generators. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

**PHY 125 Health Sciences Physics** **3 2 4**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces fundamental physical principles as they apply to health technologies. Topics include motion, force, work, power, simple machines, and other topics as required by the student's area of study. Upon completion, students should be able to demonstrate an understanding of the fundamental principles covered as they relate to practical applications in the health sciences.

**PHY 131 Physics - Mechanics** **3 2 4**
Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 175
Corequisites: None
Available: As Needed
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 151 College Physics I** **3 2 4**
Prerequisites: MAT 161 or MAT 171
Corequisites: None
Available: Fall, Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**PHY 152 College Physics II** **3 2 4**
Prerequisites: PHY 151
Corequisites: None
Available: Spring, Summer
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

***PHY 251 General Physics I** **3 3 4**
Prerequisites: MAT 271
Corequisites: MAT 272
Available: Fall
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

***PHY 252 General Physics II** **3 3 4**
Prerequisites: MAT 272 and PHY 251
Corequisites: None
Available: Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

## Plastics

**PLA 110 Introduction to Plastics 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
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 120 Injection Molding 2 3 3**
Prerequisites: None
Corequisites: None
Available: Fall
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.

## Political Science

**POL 110 Introduction to Political Science 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 science.

**POL 120 American Government 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 science.

**POL 210 Comparative Government 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 science.

## Psychology

**PSY 118 Interpersonal Psychology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces the basic principles of psychology as they relate to personal and professional development. Emphasis is placed on personality traits, communication/leadership styles, effective problem solving, and cultural diversity as they apply to personal and work environments. Upon completion, students should be able to demonstrate an understanding of these principles of psychology as they apply to personal and professional development. This course is intended for certificate, diploma, and A.A.S. degree programs.

**PSY 150 General Psychology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 science.

**PSY 215 Positive Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring
This course is an overview of the scientific study of human strengths. Topics include resilience, optimism, vital engagement (flow), positive relationships, creativity, wisdom, happiness, empathy, emotional intelligence, and other relevant topics. Upon completion, students should be able to demonstrate an understanding of the psychological factors relevant to enhancing well being. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**PSY 231 Forensic Psychology 3 0 3**
**Prerequisites: PSY 150**
Corequisites: None
Available: Fall, Spring
This course introduces students to concepts which unite psychology and the legal system. Topics include defining competency, insanity, involuntary commitment as well as introducing forensic assessment techniques, such as interviewing process, specialized assessments, and collecting collateral information. Upon completion, students should be able to demonstrate knowledge in areas of forensic psychology: risk assessment, criminal competencies, insanity, psychopathology, and mentally disordered offenders. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective

**PSY 237 Social Psychology 3 0 3**
Prerequisites: PSY 150 or SOC 210
Corequisites: None
Available: Fall, Spring
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.

**PSY 239 Psychology of Personality 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring
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.

**PSY 241 Developmental Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring
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 science.

**PSY 243 Child Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: As Needed
This course provides an overview of physical, cognitive, and psychosocial development from conception through adolescence. Topics include theories and research, interaction of biological and environmental factors, language development, learning and cognitive processes, social relations, and moral development. Upon completion, students should be able to identify typical and atypical childhood behavior patterns as well as appropriate strategies for interacting with children. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PSY 259 Human Sexuality 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: As Needed
This course provides the biological, psychological, and sociocultural aspects of human sexuality and related research. Topics include reproductive biology, sexual and psychosexual 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.

**PSY 271 Sports Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring
This course provides an overview of the field of sports and exercise psychology. Topics include concentration, goal setting, arousal level, exercise psychology, mental imagery, confidence, and other issues related to sport and exercise performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**PSY 275 Health Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring
This course covers the biopsychological dynamics of stress and the maintenance of good health. Topics include enhancing health and well-being, stress management, lifestyle choices and attitudes, the mind-body relationship, nutrition, exercise and fitness. Upon completion, students should be able to demonstrate an understanding of the psychological factors related to health and well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**PSY 281 Abnormal Psychology 3 0 3**
Prerequisites: PSY 150
Corequisites: None
Available: Fall, Spring, Summer
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 science.

## Radiography

**RAD 110 Radiography Intro & Patient Care 2 3 0 3**
Prerequisites: Enrollment in Radiography program
Corequisites: BIO 163, RAD 111, RAD 151, and RAD 182
Available: Fall
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.

**RAD 111 RAD Procedures I 3 3 0 4**
Prerequisites: Enrollment in the Radiography program
Corequisites: BIO 163, RAD 110, RAD 151, and RAD 182
Available: Fall
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.

**RAD 112 RAD Procedures II** **3 3 0 4**
Prerequisites: BIO 163, RAD 110, RAD 111, RAD 151, and RAD 182
Corequisites: RAD 121 and RAD 161
Available: Spring
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.

**RAD 121 Radiographic Imaging I** **2 3 0 3**
Prerequisites: RAD 110, RAD 111, and RAD 151
Corequisites: RAD 112 and RAD 161
Available: Spring
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.

**RAD 122 Radiographic Imaging II** **1 3 0 2**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 131 and RAD 171
Available: Summer
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 131 Radiographic Physics I** **1 3 0 2**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 122 and RAD 171
Available: Summer
This course introduces the fundamental principles of physics that underlie diagnostic X-ray production and radiography. Topics include electromagnetic waves, electricity and magnetism, electrical energy, and power and circuits as they relate to radiography. Upon completion, students should be able to demonstrate an understanding of basic principles of physics as they relate to the operation of radiographic equipment.

***RAD 151 RAD Clinical Education I** **0 0 6 2**
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 111, and RAD 182
Available: Fall
This course introduces patient management and basic radiographic procedures in the clinical setting. 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 is designed to be taken in conjunction with RAD 182, RAD Clinical Elective.

***RAD 161 RAD Clinical Education II** **0 0 15 5**
Prerequisites: RAD 110, RAD 111, RAD 151, and RAD 182
Corequisites: RAD 112 and RAD 121
Available: Spring
This course provides additional experience in patient management and in more complex radiographic procedures. 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.

***RAD 171 RAD Clinical Education III** **0 0 12 4**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 122 and RAD 131
Available: Summer
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.

***RAD 182 RAD Clinical Elective** **0 0 6 2**
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 111, and RAD 151
Available: Fall
This course provides advanced knowledge of clinical applications. Emphasis is placed on enhancing clinical skills. Upon completion, students should be able to successfully complete the clinical course objectives. This course is designed to be taken in conjunction with RAD 151, RAD Clinical Education I.

**RAD 211 RAD Procedures III** **2 3 0 3**
Prerequisites: RAD 112 and RAD 122
Corequisites: RAD 231, RAD 241, and RAD 251
Available: Fall
This course provides the knowledge and skills necessary to perform standard and specialty radiographic procedures. Emphasis is placed on radiographic specialty procedures, pathology, and advanced imaging. Upon completion, students should be able to demonstrate competence in these areas.

**RAD 231 Radiographic Physics II** **1 3 0 2**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 241, and RAD 251
Available: Fall
This course continues the study of physics that underlie diagnostic X-ray production and radiographic and fluoroscopic equipment. Topics include X-ray production, electromagnetic interactions with matter, X-ray devices and equipment circuitry. Upon completion, students should be able to demonstrate an understanding of the application of physical concepts as related to image production.

**RAD 241 Radiobiology/Protection** **2 0 0 2**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 231, and RAD 251
Available: Fall
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, and RAD 251
Corequisites: RAD 261
Available: Spring
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 RAD Clinical Education IV** **0 0 21 7**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 231, and RAD 241
Available: Fall
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 RAD Clinical Education V** **0 0 21 7**
Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251
Corequisites: RAD 245 and RAD 271
Available: Spring
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 and RAD 261
Available: Spring
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.

## Real Estate Appraisal

**REA 210 Site Value Cost Approach** **1 0 1**
Prerequisites: REA 219
Corequisites: None
Available: Spring
This course teaches the concepts and methodology used for determining site value and the valuation of residential improvements using the cost approach. Topics include methods in site valuation, replacement/reproduction cost, estimating accrued depreciation, concepts/definitions, and case studies. Upon completion, students should be able to understand the concepts and applications of site valuation and cost approaches for residential properties.

**REA 212 Sales Comparison & Income** **2 0 2**
Prerequisites: REA 219
Corequisites: None
Available: Fall
This course provides the concepts and methodology used for determining value using the sales comparison and income approaches. Topics include the sales comparison approach, income approach, finance and cash equivalency, financial calculators, derivation of adjustments, gross rent multipliers, partial interests, and case studies. Upon completion, students should be able to understand the concepts and applications of the sales comparison and income approaches for residential properties.

**REA 213 Appraisal Report Writing** **1 0 1**
Prerequisites: REA 219
Corequisites: None
Available: Fall
This course covers the production of a completed appraisal report. Topics include writing and reasoning skills, common writing problems, form reports, reporting options, Uniform Standards of Professional Appraisal Practice (USPAP) compliance, and case studies. Upon completion, students should be able to demonstrate the writing and reasoning skills necessary to develop a USPAP compliant appraisal report.

**REA 214 Basic Appraisal Principle** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the student to the entire concept of real estate appraisal and the valuation process. Topics include real property concepts and characteristics, legal considerations, influences on real estate value, types of values, and economic principles. Upon completion, students should be able to present an overview of real estate markets and analysis, and ethics, applying it to appraisal theory and practice.

**REA 215 Basic Appraisal Procedure** **2 0 2**
Prerequisites: REA 214
Corequisites: None
Available: Fall
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 an overview of approaches to value, valuation procedures, property description and residential applications. Upon completion, students should be able to identify and utilize the approaches to value for residential properties.

**REA 217 National USPAP** **1 0 1**
Prerequisites: REA 215
Corequisites: None
Available: Spring
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 Appraisal Standards Board. Upon completion, students should be able to sit for the national Uniform Standards of Professional Appraisal Practice (USPAP) examination.

**REA 219 Residential Market Analysis** **1 0 1**
Prerequisites: REA 217
Corequisites: None
Available: Spring
This course introduces students to the components of a market analysis and how to test for and analyze highest and best use. Topics include market fundamentals, characteristics and definitions, supply/demand analysis, use of market analysis, test constraints and application of the highest/best use, special considerations and case studies. Upon completion, students should be able to analyze residential markets and know the test constraints for highest and best use.

**REA 220 Statistics and Finance** **1 0 1**
Prerequisites: REA 219
Corequisites: None
Available: Fall
This course covers statistical analysis and its application to real estate valuation. Topics include statistics, valuation models, automated valuation models, mass appraisal and real estate finance. Upon completion, students should be able to understand the use of statistics, valuation models, and real estate finance in the valuation of real estate.

**REA 240 Advanced Residential Apps 1 0 1**
Prerequisites: REA 219
Corequisites: None
Available: Spring
This course covers topics necessary for appraisers to deal with advanced residential valuation issues. Topics include complex property ownership and market conditions, deriving and supporting adjustments, residential market analysis and advanced case studies. Upon completion, students should be able to understand how to deal with complex issues in the valuation of residential properties.

**REA 280 Appraisal Emerging Issues 2 0 2**
Prerequisites: REA 219
Corequisites: None
Available: Spring
This course provides students with the latest technologies and strategies in the field of Real Estate Appraisal. Emphasis is placed on the evaluation of developing appraisal issues and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging appraisal issues and concerns and establish informed opinions.

## Reading

**RED 080 Introduction to College Reading 3 2 4**
Prerequisites: ENG 075 or RED 070 or placement
Corequisites: None
Available: Fall, Spring, Summer
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. This course does not satisfy the developmental reading prerequisite for ENG 111.

**RED 090 Improved College Reading 3 2 4**
Prerequisites: ENG 085 or RED 080 or placement
Corequisites: None
Available: Fall, Spring, Summer
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. This course satisfies the developmental reading prerequisite for ENG 111.

## Religion

**REL 110 World Religions 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 Intro to Old Testament 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 Intro to New Testament 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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.

## Real Estate

***RLS 112 Broker Prelicensing 5 0 5**
Prerequisites: None
Corequisites: None
Available: As Needed
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 113 Real Estate Mathematics 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides basic instruction in business mathematics applicable to real estate situations. Topics include area computations, percentage of profit/loss, bookkeeping and accounting methods, appreciation and depreciation, financial calculations and interest yields, property valuation, insurance, taxes, and commissions. Upon completion, students should be able to demonstrate proficiency in applied real estate mathematics.

**RLS 120 Real Estate Practice 2 0 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course emphasizes knowledge and skills necessary for successful real estate practice. Topics will include land use controls, proper method of measuring improvements, commercial real estate, property management, selling techniques, and other aspects of the real estate industry. Upon completion, students should be able to demonstrate an understanding of real world real estate practice.

***RLS 121 Broker Relationships 2 0 2**
Prerequisites: RLS 112
Corequisites: None
Available: As Needed
This course provides post-licensing instruction in broker relationships and responsibilities when working with residential sellers and buyers. Topics include agency relationships and duties, agency contracts and disclosure, and the practical aspects of working with residential buyers and sellers. Upon completion, students should be able to demonstrate knowledge and skills necessary to effectively work with residential buyers/sellers according to law and prevailing practices.

***RLS 122 Contracts and Closing 2 0 2**
Prerequisites: RLS 112
Corequisites: None
Available: As Needed
This course provides post-licensing instruction in broker responsibilities relating to real estate sales contracts, contract procedures, the Real Estate Settlement Procedures Act and closings. Topics include contract law concepts, residential sales contract preparation and procedures, closing procedures and closing statement preparation. Upon completion, students should be able to handle sales contract negotiations, prepare residential sales contracts, assist sellers/buyers prepare for closing and verify closing statements.

***RLS 123 Select Real Estate Issues 2 0 2**
Prerequisites: RLS 112
Corequisites: None
Available: As Needed
This course provides post-licensing instruction in real estate on selected topics of special importance to licensees. Topics include commercial real estate brokerage, residential property management, land use controls, loan fraud, license law, fair housing, establishing a brokerage firm, and manufactured/modular homes. Upon completion, students should be able to demonstrate knowledge of commercial real estate brokerage, residential property management, and the other topics addressed in this course.

## Resort and Spa Management

**RSM 110 Intro to Resort & Spa Ind 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces the basics types of resort and spa settings. Topics include day, resort, destination, amenity, medical spas, and other related topics. Upon completion, student should be able to identify the differences and requirements of different types of resort and spa settings.

**RSM 240 Resort and Spa Marketing 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the resort and spa industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the resort and spa industry.

**RSM 245 Resort and Spa Law 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course is designed to build greater awareness and understanding of the various laws encountered in the resort and spa industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, employment and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.

## Substance Abuse

***SAB 110 Substance Abuse Overview 3 0 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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 preventative measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment.

## Information Systems Security

**SEC 110 Security Concepts 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 3**
Prerequisites: SEC 110, NET 110 or NET 125, and NET 226
Corequisites: None
Available: Fall
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. This is a Cisco Networking Academy course.

**SEC 160 Secure Admin I** **2 2 3**
Prerequisites: SEC 110, NET 110 or NET 125, and NET 126
Corequisites: None
Available: Fall
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 210 Intrusion Detection** **2 2 3**
Prerequisites: SEC 160
Corequisites: None
Available: Fall, Summer
This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solutions for networks and host based systems.

**SEC 220 Defense-In-Depth** **2 2 3**
Prerequisites: None
Corequisites: SEC 160
Available: Spring
This course introduces students to the concepts of defense in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures. This is a Cisco Networking Academy course.

**SEC 289 Security Capstone Project** **1 4 3**
Prerequisites: SEC 220
Corequisites: None
Available: Summer
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.

## A.A.S. Social / Behavioral Sciences General Education Electives

The following courses are classified as Social/Behavioral Sciences for A.A.S. degree programs. A.A.S. students may take any course on this list. College transfer students (A.A., A.S., A.F.A.) should select general education courses listed on pages 120-126 of the catalog.

**ANTHROPOLOGY**
ANT 210 General Anthropology
ANT 220 Cultural Anthropology
ANT 240 Archaeology

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

**GEOGRAPHY**
GEO 111 World Regional Geography
GEO 112 Cultural Geography

**HISTORY**
HIS 111 World Civilizations I
HIS 112 World Civilizations II
HIS 115 Introduction to Global History
HIS 131 American History I
HIS 132 American History II
HIS 162 Women and History
HIS 227 Native American History
HIS 236 North Carolina History

**POLITICAL SCIENCE**
POL 110 Introduction to Political Science
POL 120 American Government
POL 210 Comparative Government

**PSYCHOLOGY**
PSY 110 Life Span Development
PSY 118 Interpersonal Psychology
PSY 150 General Psychology
PSY 231 Forensic Psychology
PSY 237 Social Psychology
PSY 239 Psychology of Personality
PSY 241 Developmental Psychology
PSY 271 Sports Psychology
PSY 275 Health Psychology
PSY 281 Abnormal Psychology

**SOCIOLOGY**
SOC 210 Introduction to Sociology
SOC 213 Sociology of the Family
SOC 215 Group Processes
SOC 220 Social Problems
SOC 225 Social Diversity
SOC 232 Social Context of Aging
SOC 234 Sociology of Gender
SOC 240 Social Psychology
SOC 254 Rural and Urban Sociology

# Sociology

**SOC 210 Introduction to Sociology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 science.

**SOC 213 Sociology of the Family 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 life-styles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

**SOC 215 Group Processes 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course introduces group processes and dynamics. Emphasis is placed on small group experiences, roles and relationships within groups, communication, cooperation and conflict resolution, and managing diversity within and among groups. Upon completion, students should be able to demonstrate the knowledge and skills essential to analyze group interaction and to work effectively in a group context. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**SOC 220 Social Problems 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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 science.

**SOC 225 Social Diversity 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring, Summer
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 science.

**SOC 232 Social Context of Aging 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course provides an overview of the social implications of the aging process. Emphasis is placed on the roles of older adults within families, work and economics, politics, religion, education, and health care. Upon completion, students should be able to identify and analyze changing perceptions, diverse lifestyles, and social and cultural realities of older adults. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**SOC 234 Sociology of Gender 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course examines contemporary roles in society with special emphasis on recent changes. Topics include sex role specialization, myths and stereotypes, gender issues related to family, work, and power. Upon completion, students should be able to analyze modern relationships between men and women. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**SOC 240 Social Psychology 3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course examines the influence of culture and social groups on individual behavior and personality. Emphasis is placed on the process of socialization, communication, conformity, deviance, interpersonal attraction, intimacy, race and ethnicity, small group experiences, and social movements. Upon completion, students should be able to identify and analyze cultural and social forces that influence the individual in a society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

**SOC 244 Sociology of Death & Dying 3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course presents sociological perspectives on death and dying. Emphasis is placed on analyzing the different death rates among various groups, races, and societies, as well as various types of death. Upon completion, students should be able to discuss the rituals of death, both cultural and religious, and examine current issues relating to death and dying. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**SOC 254 Rural and Urban Sociology** **3 0 3**
Prerequisites: None
Corequisites: None
Available: As Needed
This course applies sociological concepts to a comparative study of major social issues facing contemporary rural and urban America. Emphasis is placed on growth and development patterns, ecological factors, social organizations, social controls, and processes of change. Upon completion, students should be able to illustrate the differences and similarities that exist between urban and rural environments as they resolve contemporary issues. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## Medical Sonography

**SON 110 Introduction to Sonography** **1 3 3 3**
Prerequisites: Enrollment in Sonography Program
Corequisites: SON 130
Available: Fall
This course provides an introduction to medical sonography. Topics include applications, sonographic terminology, history, patient care, ethics, and basic skills. Upon completion, students should be able to define professionalism and sonographic applications and perform basic patient care skills and preliminary scanning techniques.

**SON 111 Sonographic Physics** **3 3 0 4**
Prerequisites: CVS 163 or SON 110
Corequisites: None
Available: Spring
This course introduces ultrasound physical principles, bioeffects, and sonographic instrumentation. Topics include sound wave mechanics, transducers, sonographic equipment, Doppler physics, bioeffects, and safety. Upon completion, students should be able to demonstrate knowledge of sound wave mechanics, transducers, sonography equipment, the Doppler effect, bioeffects, and safety.

**SON 120 SON Clinical Ed I** **0 0 15 5**
Prerequisites: SON 110
Corequisites: None
Available: Spring
This course provides active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

**SON 121 SON Clinical Ed II** **0 0 15 5**
Prerequisites: SON 120
Corequisites: None
Available: Summer
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

**SON 130 Abdominal Sonography I** **2 3 0 3**
Prerequisites: Enrollment in Sonography Program
Corequisites: SON 110
Available: Fall
This course introduces abdominal and small parts sonography. Emphasis is placed on the sonographic anatomy of the abdomen and small parts with correlated laboratory exercises. Upon completion, students should be able to recognize and acquire basic abdominal and small parts images.

**SON 131 Abdominal Sonography II** **1 3 0 2**
Prerequisites: SON 130
Corequisites: None
Available: Spring
This course covers abdominal and small parts pathology recognizable on sonograms. Emphasis is placed on abnormal sonograms of the abdomen and small parts with correlated sonographic cases. Upon completion, students should be able to recognize abnormal pathological processes in the abdomen and on small parts sonographic examinations.

**SON 140 Gynecological Sonography** **2 0 0 2**
Prerequisites: SON 110
Corequisites: None
Available: Spring
This course is designed to relate gynecological anatomy and pathology to sonography. Emphasis is placed on gynecological relational anatomy, endovaginal anatomy, and gynecological pathology. Upon completion, students should be able to recognize normal and abnormal gynecological sonograms.

**SON 220 SON Clinical Ed III** **0 0 24 8**
Prerequisites: SON 121
Corequisites: None
Available: Fall
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

**SON 221 SON Clinical Ed IV** **0 0 24 8**
Prerequisites: SON 220
Corequisites: None
Available: Spring
This course provides continued active participation off campus in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

**SON 225 Case Studies** **0 3 0 1**
Prerequisites: SON 110 or CVS 163
Corequisites: None
Available: Spring
This course offers the opportunity to present interesting cases found during clinical education. Emphasis is placed on presentation methods which integrate patient history, laboratory results, and sonographic findings with reference to current literature. Upon completion, students should be able to correlate information necessary for complete presentation of case studies.

**SON 241 Obstetrical Sonography I** **2 0 0 2**
Prerequisites: SON 110
Corequisites: None
Available: Summer
This course covers normal obstetrical sonography techniques, the normal fetal environment, and abnormal first trimester pregnancy states. Topics include gestational dating, fetal anatomy, uterine environment, and first trimester complications. Upon completion, students should be able to produce gestational sonograms which document age, evaluate the uterine environment, and recognize first trimester complications.

**SON 242 Obstetrical Sonography II** **2 0 0 2**
Prerequisites: SON 241
Corequisites: None
Available: Fall
This course covers second and third trimester obstetrical complications and fetal anomalies. Topics include abnormal fetal anatomy and physiology and complications in the uterine environment. Upon completion, students should be able to identify fetal anomalies, fetal distress states, and uterine pathologies.

**SON 250 Vascular Sonography** **1 3 0 2**
Prerequisites: SON 111
Corequisites: None
Available: Fall
This course provides an in-depth study of the anatomy and pathology of the vascular system. Topics include peripheral arterial, peripheral venous, and cerebrovascular disease testing. Upon completion, students should be able to identify normal vascular anatomy and recognize pathology of the vascular system.

**SON 289 Sonographic Topics** **2 0 0 2**
Prerequisites: SON 110 and SON 220
Corequisites: SON 221
Available: Spring
This course provides an overview of sonographic topics in preparation for certification examinations. Emphasis is placed on registry preparation. Upon completion, students should be able to demonstrate a comprehensive knowledge of sonography and be prepared for the registry examinations.

## Spanish

**SPA 110 Introduction to Spanish** **2 0 2**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
This course provides an introduction to understanding, speaking, reading, and writing Spanish. Emphasis is placed on pronunciation, parts of speech, communicative phrases, culture, and skills for language acquisition. Upon completion, students should be able to identify and apply basic grammar concepts, display cultural awareness, and communicate in simple phrases in Spanish.

**SPA 111 Elementary Spanish I** **3 0 3**
Prerequisites: None
Corequisites: SPA 181
Available: Fall, Spring, Summer
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. Lab practice is expected of students. 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.

**SPA 112 Elementary Spanish II** **3 0 3**
Prerequisites: SPA 111
Corequisites: SPA 182
Available: Fall, Spring, Summer
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. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**SPA 120 Spanish for the Workplace** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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.

**SPA 141 Culture and Civilization** **3 0 3**
Prerequisites: None
Corequisites: None
Available: Fall, Spring
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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**SPA 181 Spanish Lab I** **0 2 1**
Prerequisites: None
Corequisites: SPA 111
Available: Fall, Spring, Summer
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 II** **0 2 1**
Prerequisites: SPA 181
Corequisites: SPA 112
Available: Fall, Spring, Summer
This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**SPA 211 Intermediate Spanish I** **3 0 3**
Prerequisites: SPA 112
Corequisites: None
Available: Fall, Spring
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. Lab practice is expected of students. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**SPA 212 Intermediate Spanish II** **3 0 3**
Prerequisites: SPA 211
Corequisites: None
Available: Spring
This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**SPA 221 Spanish Conversation** **3 0 3**
Prerequisites: SPA 212
Corequisites: None
Available: As Needed
This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

## Surveying

**SRV 110 Surveying I** **2 6 4**
Prerequisites: EGR 115
Corequisites: MAT 121, MAT 161, MAT 171 or MAT 175
Available: Spring
This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments, demonstrate field note techniques, and apply the theory and practice of plane surveying.

**SRV 111 Surveying II** **2 6 4**
Prerequisites: SRV 110
Corequisites: None
Available: Fall, Summer
This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calculations; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

**SRV 210 Surveying III** **2 6 4**
Prerequisites: SRV 110
Corequisites: None
Available: Fall, Spring
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 3**
Prerequisites: SRV 110
Corequisites: None
Available: Fall
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 3**
Prerequisites: SRV 111, SRV 210, and CIV 211
Corequisites: None
Available: Fall, Spring
This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

**SRV 240 Topographic/Site Surveying** **2 6 4**
Prerequisites: SRV 110
Corequisites: SRV 210
Available: Fall, Spring
This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

**SRV 250 Advanced Surveying** **2 6 4**
Prerequisites: SRV 111
Corequisites: None
Available: Fall, Spring
This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.

**SRV 260 Field and Office Practices** **1 3 2**
Prerequisites: Completion of three semesters of the Surveying Technology program
Corequisites: None
Available: Fall
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.

## Surgical Technology

**SUR 110 Introduction to Surgical Technology 3 0 0 3**
Prerequisites: Enrollment in the Surgical Technology program
Corequisites: BIO 163 and SUR 111
Available: Fall
This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, physiology of wound healing and biomedical sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

**SUR 111 Periop Patient Care 5 6 0 7**
Prerequisites: Enrollment in the Surgical Technology program
Corequisites: BIO 163 and SUR 110
Available: Fall
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 and SUR 111
Corequisites: SUR 123 or STP 101
Available: Spring
This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

**SUR 123 SUR Clinical Practice I 0 0 21 7**
Prerequisites: BIO 163, or BIO 168 and BIO 169, SUR 110 and SUR 111
Corequisites: BIO 175 and SUR 122
Available: Spring
This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles.

**SUR 134 Surgical Procedures II 5 0 0 5**
Prerequisites: SUR 123 or STP 101
Corequisites: SUR 135 and SUR 137
Available: Summer
This course provides a comprehensive study of intermediate and advanced surgical specialties that students are exposed to in the second clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

**SUR 135 SUR Clinical Practice II 0 0 12 4**
Prerequisites: SUR 122 and SUR 123
Corequisites: SUR 134 and SUR 137
Available: Summer
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 Prof Success Prep 1 0 0 1**
Prerequisites: SUR 122 and SUR 123
Corequisites: SUR 134 and SUR 135
Available: Summer
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 Adv SUR Clinical Practice 0 0 6 2**
Prerequisites: SUR 137
Corequisites: None
Available: Spring
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. Current national certification in surgical technology from the NBSTSA, is required by students enrolling in this course.

**SUR 211 Adv Theoretical Concepts 2 0 0 2**
Prerequisites: SUR 137
Corequisites: None
Available: Fall
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.

## Social Work

***SWK 110 Introduction to Social Work 3 0 0 3**
Prerequisites: None
Corequisites: None
Available: Spring
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
Available: Fall
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.

**SWK 115 Community Resources** **2 2 0 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces community resources essential to social work practice. Emphasis is placed on awareness of and interaction with community service personnel. Upon completion, students should be able to identify resources and assess critical community needs. This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.

***SWK 214 Social Work Law** **3 0 0 3**
Prerequisites: SWK 110
Corequisites: None
Available: Spring
This course introduces the major provisions of social services law, current trends, legislative developments, and court procedures. Emphasis is placed on the interpretation of the laws and court decisions related to various social services populations. Upon completion, students should be able to interpret these laws and their implications for social services practice. This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.

***SWK 220 SWK Issues in Client Services** **3 0 0 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces the professional standards, values, and issues in social services. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics. Upon completion, students should be able to understand and discuss multiple ethical issues applicable to social work and apply various decision-making models to current issues. This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.

## Veterinary Medical Technology

**VET 110 Animal Breeds and Husbandry** **2 2 0 3**
Prerequisites: Enrollment in the VMT program
Corequisites: None
Available: Fall
This course provides a study of the individual breed characteristics and management techniques of the canine, feline, equine, bovine, porcine, ovine, caprine, and laboratory animals. Topics include physiological data, animal health management, and basic care and handling of animals. Upon completion, students should be able to identify breeds of domestic and laboratory animals, list physiological data, and outline basic care, handling, and management techniques.

**VET 114 Introduction to Veterinary Medical Tech** **1 0 0 1**
Prerequisites: Enrollment in the VMT program
Corequisites: None
Available: Fall
This course introduces the standard operating procedures and responsibilities of veterinary technology departments, common zoonotic diseases, safety and ethical issues, and USDA/DEA/OSHA regulations/compliance. Emphasis is placed on standard operating procedures, zoonotic diseases, safety and ethical issues, and the importance of USDA/DEA/OSHA regulations and compliance. Upon completion, students should be able to perform duties assigned in veterinary medical technology, recognize potential zoonotic diseases, and establish safety protocols/regulatory compliance.

**VET 120 Veterinary Anatomy and Physiology** **3 3 0 4**
Prerequisites: Enrollment in the VMT program
Corequisites: None
Available: Fall
This course covers the structure and function of the animal body with emphasis on the similarities and differences among domestic animals. Emphasis is placed on the structure and function of the major physiological systems of domestic, laboratory, and zoo animals. Upon completion, students should be able to identify relevant anatomical structure and describe basic physiological processes for the major body systems.

**VET 121 Veterinary Medical Terminology** **3 0 0 3**
Prerequisites: Enrollment in the VMT program
Corequisites: None
Available: Fall
This course covers the basic medical terminology required for veterinary technicians. Topics include the pronunciation, spelling and definition of word parts and vocabulary terms unique to the anatomy, clinical pathology, and treatment of animals. Upon completion, students should be able to demonstrate knowledge and understanding of basic medical terms as they relate to veterinary medicine. It is highly recommended that this course be taken in the first semester of the Veterinary Technology program.

**VET 123 Veterinary Parasitology** **2 3 0 3**
Prerequisites: VET 110, VET 120 and VET 121
Corequisites: None
Available: Spring
This course covers the common internal and external parasites of companion animals, livestock, selected zoo animals, and wild animals. Emphasis is placed on laboratory diagnosis of the most common forms of the parasite through fecal, urine, skin. and blood exams. Upon completion, students should be able to identify common parasites and discuss life-cycles, treatment and prevention strategies, and public health aspects of veterinary parasitology.

**VET 125 Veterinary Diseases I** **2 0 0 2**
Prerequisites: VET 110, VET 120 and VET 121
Corequisites: None
Available: Spring
This course introduces basic immunology, fundamentals of disease processes including inflammation, and common infectious diseases of animals and their prevention through immunization. Topics include fundamental disease processes, principles of medical therapy, immunologic processes, infections and zoonotic diseases of domestic animals, and prevention of disease. Upon completion, students should be able to describe basic disease and immunological processes, recognize infections and zoonotic diseases, and discuss prevention strategies.

**VET 126 Veterinary Diseases II 1 3 0 2**
Prerequisites: VET 125
Corequisites: VET 211, VET 213, and VET 215
Available: Fall
This course includes the study of basic disease processes, fundamentals of pathology and other selected topics of veterinary medicine. Topics include histopathology, pathologic changes associated with common diseases of animals, necropsy procedures, specimen handling, and other selected material. Upon completion, students should be able to describe basic pathological changes associated with disease, recognize histopathologic changes, and properly perform collection and submission of necropsy specimens.

**VET 131 Veterinary Lab Techniques I 2 3 0 3**
Prerequisites: VET 110, VET 114, VET 123 and VET 125
Corequisites: VET 133
Available: Summer
This course includes the fundamental study of hematology, hemostasis, and urinalysis. Emphasis is placed on basic hematology and urinalysis techniques, manual skill development, instrumentation, quality control, and applications to veterinary science. Upon completion, students should be able to perform manual and automated CBCs, hemostatic assays, and complete urinalyses and maintain laboratory equipment and quality control.

**VET 133 Veterinary Clinical Practices I 2 3 0 3**
Prerequisites: VET 110, VET 114, VET 123 and VET 125
Corequisites: VET 131, VET 120
Available: Summer
This course introduces basic practices and techniques of the veterinary clinic and biomedical research fields for dogs, cats, and laboratory animals. Topics include physical exam, husbandry, housing, sanitation, restraint and handling, administration of medications, anesthesia and euthanasia techniques, grooming and dentistry. Upon completion, students should be able to properly restrain, medicate, examine, groom, and maintain each of the species studied.

**VET 137 Veterinary Office Practices 1 2 0 2**
Prerequisites: Enrollment in the VMT program
Corequisites: None
Available: Summer
This course is designed to teach basic administrative techniques, client communication skills, and regulations pertaining to veterinary medicine. Topics include record keeping, telephone techniques, professional liability, office procedures, state and national regulatory laws, human relations, and animal welfare. Upon completion, students should be able to demonstrate effective communication techniques, office procedures, and knowledge of regulatory laws and issues relating to animal welfare.

**VET 211 Veterinary Lab Techniques II 2 3 0 3**
Prerequisites: VET 131
Corequisites: VET 213
Available: Fall
This course covers advanced hematology, serology, immunology, and clinical chemistry. Topics include advanced hematologic, serologic, and immunologic test procedures, manual and automated clinical chemistry procedures, laboratory safety, and quality control. Upon completion, students should be able to collect, prepare, and analyze serum and plasma samples and outline quality control and safety procedures.

**VET 212 Veterinary Lab Techniques III 2 3 0 3**
Prerequisites: VET 211
Corequisites: VET 214
Available: Spring
This course introduces the basic principles of microbiology, histology and cytology. Emphasis is placed on collection of microbiological samples for culture and sensitivity and collection and preparation of samples for histological and cytological examination. Upon completion, students should be able to perform microbiological culture and sensitivity and evaluate cytology and histology specimens.

**VET 213 Veterinary Clinical Practice II 1 9 0 4**
Prerequisites: VET 133
Corequisites: VET 126, VET 211, and VET 215
Available: Fall
This course covers basic radiography, anesthesia techniques, dentistry, sample collection and handling, surgical assistance and instrumentation, sterile techniques, and patient record keeping. Topics include basic radiology, injectable and gas anesthesia, dentistry, instrument identification and care, sterile surgical technique, specimen collection and processing, and maintenance of patient records. Upon completion, students should be able to take and process radiographs, administer and monitor anesthesia, assist in surgical procedures, collect specimens, and maintain surgical records.

**VET 214 Veterinary Clinical Practice III 1 9 0 4**
Prerequisites: VET 126, VET 211, VET 213, VET 215
Corequisites: VET 212
Available: Spring
The course covers advanced anesthetic techniques, special radiographic techniques, advanced dentistry, sample collection and processing, bandaging, and emergency and critical care procedures. Topics include induction and maintenance of anesthesia, radiographic contrast studies, advanced dentistry, external coaptation, intensive care procedures, and advanced sample collection techniques. Upon completion, students should be able to demonstrate proficiency in sample collection, radiology, anesthesia, critical care and emergency procedures, and dentistry.

**VET 215 Veterinary Pharmacology 3 0 0 3**
Prerequisites: CHM 130 and CHM 130A, or CHM 151, VET 125
Corequisites: VET 213
Available: Fall
This course introduces drugs and other substances utilized in veterinary medicine. Emphasis is placed on drug classification and methods of action, administration, effects and side effects, storing and handling of drugs and dosage calculations. Upon completion, students should be able to properly calculate and administer medications, recognize adverse reactions, and maintain pharmaceutical inventory and administration records.

**VET 217 Large Animal Clinical Practice 2 3 0 3**
Prerequisites: VET 110, VET 120, and VET 125
Corequisites: VET 214, VET 213
Available: Spring
This course covers the topics relevant to the medical and surgical techniques for the common domestic large animal species. Topics include physical exam, restraint, sample collection, bandaging, emergency treatment, surgical and obstetrical procedures and instruments, herd health, and lameness topics. Upon completion, students should be able to safely perform restraint, examination, and sample collection; assist surgical, obstetrical, and emergency procedures; and discuss herd health.

**VET 237 Animal Nutrition** **3 0 0 3**
Prerequisites: CHM 130 and CHM 130A
Corequisites: None
Available: Spring
This course covers the principles of nutrition and their application to feeding practices of domestic, farm, and companion animals. Topics include basic nutrients and nutritional needs of individual species, proximate analysis, interpretation of food and feed labels, types of animal foods, and ration formulation. Upon completion, students should be able to select appropriate diets for animals in various stages of health and disease, analyze nutrition labels, and identify foods.

## Web Technologies

**WEB 110 Internet/Web Fundamentals** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Fall
This course introduces basic markup language, various navigational tools and services of the Internet. Topics include creating web pages, using Internet protocols, search engines, file compression/decompression, FTP, E-mail, listservers, and other related topics. Upon completion, students should be able to deploy a web-site created with basic markup language, retrieve/decompress files, e-mail, FTP, and utilize other Internet tools.

**WEB 115 Web Markup and Scripting** **2 2 3**
Prerequisites: CIS 110
Corequisites: None
Available: Fall, Spring
This course introduces client-side Internet programming using the current W3C-recommended presentation markup language and supporting elements. Topics include site management and development, markup elements, stylesheets, validation, accessibility, standards, browsers, and basic JavaScripting. Upon completion, students should be able to hand-code web pages with various media elements according to current markup standards and integrate them into websites.

**WEB 120 Intro Internet Multimedia** **2 2 3**
Prerequisites: WEB 115 or WEB 140
Corequisites: None
Available: Fall, Summer
This is the first of two courses covering the creation of Internet Multimedia. Topics include multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create Internet multimedia presentations utilizing a variety of methods and applications.

**WEB 140 Web Development Tools** **2 2 3**
Prerequisites: CIS 110
Corequisites: None
Available: Fall, Spring
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 182 PHP Programming** **2 2 3**
Prerequisites: CIS 115
Corequisites: None
Available: Fall, Spring
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 186 XML Technology** **2 2 3**
Prerequisites: CIS 115 and DBA 110
Corequisites: None
Available: Spring
This course is designed to introduce student to XML and related internet technologies. Topics include extendible style language (XSL), document object model (DOM), extendible style sheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

**WEB 210 Web Design** **2 2 3**
Prerequisites: WEB 140
Corequisites: None
Available: Spring
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.

**WEB 215 Adv Markup Scripting** **2 2 3**
Prerequisites: DBA 120, WEB 115 and WEB 182
Corequisites: None
Available: Fall
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.

**WEB 230 Implementing Web Serv** **2 2 3**
Prerequisites: NET 110 or NET 125, NOS 110 and NOS 120
Corequisites: None
Available: As Needed
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.

**WEB 250 Database Driven Websites** **2 2 3**
Prerequisites: DBA 110, WEB 182
Corequisites: None
Available: Fall, Spring
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.

***WEB 289 Internet Technologies Project** **1 4 3**
Prerequisites: WEB 230 and WEB 250
Corequisites: None
Available: Spring, Summer
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.

## Welding

**WLD 110 Cutting Processes** **1 3 2**
Prerequisites: Admission to Welding Program
Corequisites: None
Available: Fall
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.

**WLD 111 Oxy-Fuel Welding** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Spring
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.

**WLD 112 Basic Welding Processes** **1 3 2**
Prerequisites: None
Corequisites: None
Available: Spring
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.

**WLD 113 Soldering and Brazing** **1 2 2**
Prerequisites: None
Corequisites: None
Available: Spring
This course covers procedures for cutting, soldering and brazing of pipe and tubing. Topics includes safety, proper equipment setup, and operation of soldering and brazing equipment. Upon completion, students should be able to solder and braze pipe, tubing, and fittings in various positions.

**WLD 115 SMAW (Stick) Plate** **2 9 5**
Prerequisites: None
Corequisites: None
Available: Fall
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 116 SMAW (Stick) Plate/Pipe** **1 9 4**
Prerequisites: WLD 115
Corequisites: None
Available: Spring
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 121 GMAW (MIG) FCAW/Plate** **2 6 4**
Prerequisites: None
Corequisites: None
Available: Fall
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 122 GMAW (MIG) Plate/Pipe** **1 6 3**
Prerequisites: WLD 121
Corequisites: None
Available: Spring
This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry.

**WLD 131 GTAW (TIG) Plate** **2 6 4**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

**WLD 132 GTAW (TIG) Plate/Pipe** **1 6 3**
Prerequisites: WLD 131
Corequisites: None
Available: Fall
This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

**WLD 141 Symbols and Specifications** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Spring
This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

**WLD 143 Welding Metallurgy** **1 2 2**
Prerequisites: WLD 115, WLD 121 or WLD 131
Corequisites: None
Available: Summer
This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

**WLD 151 Fabrication I** **2 6 4**
Prerequisites: WLD 110, WLD 115, WLD 116, and WLD 131
Corequisites: None
Available: Fall
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

**WLD 212 Inert Gas Welding** **1 3 2**
Prerequisites: None
Corequisites: None
Available: As Needed
This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions.

**WLD 215 SMAW (Stick) Pipe** **1 9 4**
Prerequisites: WLD 115 or WLD 116
Corequisites: None
Available: Summer
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.

**WLD 231 GTAW (TIG) Pipe** **1 6 3**
Prerequisites: WLD 132
Corequisites: None
Available: Spring
This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

**WLD 251 Fabrication II** **1 6 3**
Prerequisites: WLD 151
Corequisites: None
Available: Spring
This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

**WLD 261 Certification Practices** **1 3 2**
Prerequisites: WLD 115, WLD 121, and WLD 131
Corequisites: None
Available: Spring
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for pre-qualified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

**WLD 262 Inspection and Testing** **2 2 3**
Prerequisites: None
Corequisites: None
Available: Summer
This course introduces destructive and nondestructive 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 nondestructive testing processes.

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# A



# B



# C

# D



# E

# F



# G



# H



# I

# J



# L



# M



# N



# O



# P

# Q



# R



# S



# T

# U



# V



# W



The primary accreditor of Asheville-Buncombe Technical Community College is the Commission on Colleges of the Southern Association of Colleges and Schools located at 1866 Southern Lane, Decatur, GA 30033-4097, telephone 404.679.4500. Inquiries about the College's accreditation status only may be obtained by contacting this organization.

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