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### **Asheville-Buncombe Technical Community College**

[www.abtech.edu](http://www.abtech.edu)

Catalog of Courses, Day and Evening College, Volume 43, 2005-2006

Recognized and approved by:

- North Carolina Community College System
- North Carolina State Board of Education
- North Carolina Office of Emergency Medical Services
- N.C. State Approving Agency for the Use of Veterans Military and Educational Benefits

Accredited by:

- Accreditation Review Committee on Education in Surgical Technology
- American Culinary Federation
- American Dental Association
- Commission on Dental Accreditation
- Joint Review Committee on Education in Radiologic Technology
- National Accrediting Agency for Clinical Laboratory Sciences
- National Automotive Technicians Education Foundation, Inc.
- North Carolina Real Estate Commission
- North Carolina Board of Nursing
- North Carolina Appraisal Board

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.

# Curriculum Programs

	<b>Program</b>	<b>Credential</b>	<b>Schedule</b>
Curriculum	Accounting	A.A.S. Degree	Day/Evening
	Accounting Level I	Certificate	Day
	Accounting Level II	Certificate	Day
Programs	Air Conditioning, Heating and Refrigeration Technology	A.A.S. Degree	Evening
	Air Conditioning, Heating and Refrigeration Technology	Diploma	Day/Evening
	Basic	Certificate	Day/Evening
	Intermediate	Certificate	Day/Evening
	Advanced	Certificate	Evening
	Industrial HVAC Maintenance Technology	Certificate	Evening
	Associate Degree Nursing	A.A.S. Degree	Day/Evening
	Automotive Systems Technology	A.A.S. Degree	Day
	Automotive Systems Technology	Diploma	Evening
	Automotive	Certificate	Day
	Baking and Pastry Arts	A.A.S. Degree	Day
	Cake Designs	Certificate	Day
	Restaurant Desserts	Certificate	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/Evening
	Civil Engineering Technology	A.A.S. Degree	Day/Evening
	College Transfer:		
	Associate in Arts	A.A. Degree	Day/Evening
	Associate in Science	A.S. Degree	Day/Evening
	Associate in Fine Arts	A.F.A. Degree	Day
	Computer-Aided Drafting Technology	A.A.S. Degree	Day/Evening
	Computer-Aided Drafting	Certificate	Day/Evening
	Computer Engineering Technology	A.A.S. Degree	Day/Evening
	PC and Network Maintenance	Certificate	Day/Evening
	Computer Programming	A.A.S. Degree	Day/Evening
JAVA Programming	Certificate	Day/Evening	
Construction Management Technology	A.A.S. Degree	Evening	
Construction Management Technology	Certificate	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	
Early Childhood Associate	A.A.S. Degree	Day	
Early Childhood Associate	Certificate	Day/Evening	
Early Childhood/Teacher Associate	A.A.S. Degree	Day	
Electrical/Electronics Technology	A.A.S. Degree	Evening	
Electrical/Electronics Technology	Diploma	Evening	
Electronics Engineering Technology	A.A.S. Degree	Day/Evening	
Emergency Medical Science	A.A.S. Degree	Day	
Fire Protection Technology	A.A.S. Degree	Day/Evening	

Fire Protection Technology	Certificate	Day/Evening	Curriculum Programs
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	
Information Systems	A.A.S. Degree	Day/Evening	
Database Management	Certificate	Day/Evening	
Microcomputer Applications	Certificate	Day/Evening	
PC Installation and Maintenance	Certificate	Day/Evening	
Web Technologies	Certificate	Day/Evening	
Machining Technology	A.A.S. Degree	Evening	
Machining Technology	Diploma	Day/Evening	
Machining Technology	Certificate	Day/Evening	
Basic	Certificate	Day/Evening	
CNC Programming	Certificate	Day/Evening	
Marketing and Retailing	A.A.S. Degree	Day/Evening	
Mechanical Engineering Technology	A.A.S. Degree	Day/Evening	
Automation/Robotics	Certificate	Day/Evening	
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	
Cisco Certified Network Associate	Certificate	Day	
Cisco Certified Network Professional	Certificate	Day/Evening	
Networking	Certificate	Day	
Network Security	Certificate	Day/Evening	
Open Source Operating Systems	Certificate	Day/Evening	
Office Systems Technology	A.A.S. Degree	Day	
Office Systems Technology	Diploma	Day	
Word Processing/Desktop Publishing	Certificate	Day/Evening	
Phlebotomy	Certificate	Day	
Practical Nursing	Diploma	Day	
Radiography	A.A.S. Degree	Day	
Real Estate	Certificate	Evening	
Real Estate Appraisal	Certificate	Evening	
Social Services	A.A.S. Degree	Day/Evening	
Surgical Technology	Diploma	Day	
Surveying Technology	A.A.S. Degree	Day/Evening	
Veterinary Medical Technology	A.A.S. Degree	Day/Evening	
Welding Technology	Diploma	Day/Evening	
Welding Technology	Certificate	Day/Evening	

# Directory of College Services and Offices

Directory of  
College  
Services and  
Offices

Continuing Education and Off-Campus Programs .....	Vice President Haynes Technology Center, Enka Campus, Ext. 5837
Adult Basic Skills/Human Resources Development .....	Executive Director Pines Building, Asheville Campus, Ext. 488
Community Service Programs .....	Director Pines Building, Asheville Campus, Ext. 134
Corporate and Economic Development .....	Executive Director Haynes Technology Center, Enka Campus, Ext. 5821
GED Preparation .....	Pines Building, Asheville Campus, Ext. 132
GED Test Scheduling .....	Basic Skills Office Pines Building, Asheville Campus, Exts. 132, 137
GED Test Results/Transcripts .....	GED Examiner Pines Building, Asheville Campus, Ext. 312
Occupational and Public Service Training .....	Executive Director Haynes Technology Center, Enka Campus, Ext. 5836
Curriculum Programs .....	Vice President, Instructional Services Simpson Administration Building, Asheville Campus, Ext. 120
Allied Health and Public Service Education .....	Dean Rhododendron Building, Asheville Campus, Ext. 250
Arts and Sciences .....	Dean Elm Building, Asheville Campus, Ext. 310
Business and Hospitality Education .....	Dean Birch Building, Asheville Campus, Ext. 240
Career Pathways Partnership .....	Director Sunnicrest Building, Asheville Campus, Ext. 439
Distance Learning .....	Director Sycamore Building, Asheville Campus, Ext. 835
Engineering and Applied Technology .....	Dean Dogwood Building, Asheville Campus, Ext. 220
Student Services .....	Vice President, Student Services Azalea Building, Asheville Campus, Ext. 140
Admissions .....	Admissions Office, Student Services Azalea Building, Asheville Campus, Exts. 144, 145, 210
Counseling .....	Counselors, Student Services Azalea Building, Asheville Campus, Exts. 141, 146, 206, 434
Disabled Student Services .....	Coordinator of Disability Services, Student Services Azalea Building, Asheville Campus, Ext. 141
International Student Services .....	International Student Advisor, Student Services Azalea Building, Asheville Campus, Ext. 441

Student Academic Records,.....	Student Records and Registration Student Services, Azalea Building, Asheville Campus, Ext. 376	Directory of College Services and Offices	
Student Activities .....	Director of Student Activities Coman Student Activity Center, Asheville Campus, Ext. 203		
Transcript Request .....	Student Records and Registration Student Services, Azalea Building, Asheville Campus, Ext. 204		
Transfer Credits.....	Director of Admissions Student Services Azalea Building, 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 Azalea Building, Asheville Campus, Ext. 206		
Visiting the Campus .....	College Recruiter, Student Services Coman Student Activity Center, Asheville Campus, Ext. 203		
College Services and Information			
Academic Learning Center.....	Coordinator Laurel Building, Asheville Campus, Ext. 228		
ADA Coordinator.....	Director of Personnel Sunnicrest Building, Asheville Campus, Ext. 113		
Books.....	Bookstore Coman Student Activity Center, Asheville Campus, Exts. 274, 208		
Emergencies .....	Ext. 125 or 9-911		
Financial Aid.....	Financial Aid Office Azalea Building, Asheville Campus, Ext. 163		
Foundation .....	Executive Director Simpson Building, Asheville Campus, Ext. 176		
Intramurals .....	Ext. 843		
Job Placement .....	JobLink Center Maple Building, Asheville Campus, 250-4761		
Learning Resources Center.....	Director Holly Learning Resources Center, Asheville Campus, Ext. 301		
News, Publications.....	Director of Communications Simpson Administration Building, Asheville Campus, Ext. 117		
Parking Permits.....	Accounting Clerk/Cashier Simpson Administration Building, Asheville Campus, Ext. 152		
Payments, Student Accounts .....	Business Office Simpson Administration Building, Asheville Campus, Exts. 152, 156, 166		
Security.....	Chestnut Building, Asheville Campus Ext. 0		
Curriculum Programs			
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 340 Victoria Road  
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Internet: [www.abtech.edu](http://www.abtech.edu)

# College Calendar 2005-2006

## Fall Semester - 2005

Registration: Current and Continuing Students .....	July 18-26
Registration: New Classified Students .....	July 27-29
Open Registration .....	August 1-August 12
Financial Aid Recipients (last name A-L) Charge Tuition and Fees .....	August 11
Financial Aid Recipients (last name M-Z) Charge Tuition and Fees.....	August 12
Last Day to Pay Tuition and Fees.....	August 12
New Student Welcome.....	August 11 & 12
Classes Begin.....	August 15
Schedule Adjustments .....	August 15-17
Minimester I .....	August 15-October 12
Last Day to Drop for a Partial Refund.....	August 24
Professional Development - 1/2 Day .....	September 20
Fall Break .....	October 10-11
Minimester II .....	October 13-December 12
Last Day to Withdraw from a full 16-Week Class Without Penalty .....	November 9
Thanksgiving Break .....	November 23-25
Last Day of Class/Examinations* .....	December 12
Total Class Days.....	80
Holidays.....	September 5, November 24-25, December 22-January 2

College  
Calendar

## Spring Semester - 2006

Registration: Current and Continuing Students .....	November 14-18
Open Registration .....	Nov. 28-Dec. 21& Jan. 3-6
Financial Aid Recipients (last name A-L) Charge Tuition and Fees .....	January 5
Financial Aid Recipients (last name M-Z) Charge Tuition and Fees .....	January 6
Last Day to Pay Tuition and Fees.....	January 6
New Student Welcome.....	January 6
Classes Begin.....	January 9
Schedule Adjustments .....	January 9-11
Minimester I .....	January 9-March 6
Last Day to Drop for a Partial Refund.....	January 19
Professional Development - 1/2 Day .....	February 21
Minimester II .....	March 7-May 8
Last Day To Apply for Spring Graduation .....	March 24
Spring Break.....	April 10-14
Last Day to Withdraw from a full 16-Week Class Without Penalty .....	April 3
Last Day of Class/Examinations* .....	May 8
Spring Graduation.....	May 12
Total Class Days.....	80
Holidays.....	January 16, April 14

# Summer Session - 2006

College  
Calendar

Registration: Current and Continuing Students .....	April 24-28
Open Registration .....	May 1-19
Financial Aid Recipients Charge Tuition and Fees .....	May 19
Last Day to Pay Tuition and Fees.....	May 19
New Student Welcome.....	May 19
Classes Begin.....	May 22
Schedule Adjustments .....	May 22-23
Last Day to Drop for a Partial Refund.....	May 26
Last Day to Apply for Summer Graduation.....	June 9
Last Day to Withdraw from a full 10-Week Class Without Penalty .....	July 12
Last Day of Class/Examinations .....	July 31
Summer Graduation.....	August 4
Total Class Days.....	50
Holiday.....	July 4

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

All dates in this calendar are subject to change.

## 2005

<b>January</b> 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	<b>February</b> 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	<b>March</b> 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	<b>April</b> 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
<b>May</b> 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	<b>June</b> 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	<b>July</b> 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	<b>August</b> 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
<b>September</b> 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	<b>October</b> 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	<b>November</b> 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	<b>December</b> 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

## 2006

<b>January</b> 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	<b>February</b> 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	<b>March</b> 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	<b>April</b> 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
<b>May</b> 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	<b>June</b> 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	<b>July</b> 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	<b>August</b> 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
<b>September</b> 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	<b>October</b> 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	<b>November</b> 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	<b>December</b> 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

## 2004 Report

Performance  
Measures

### Performance Measure

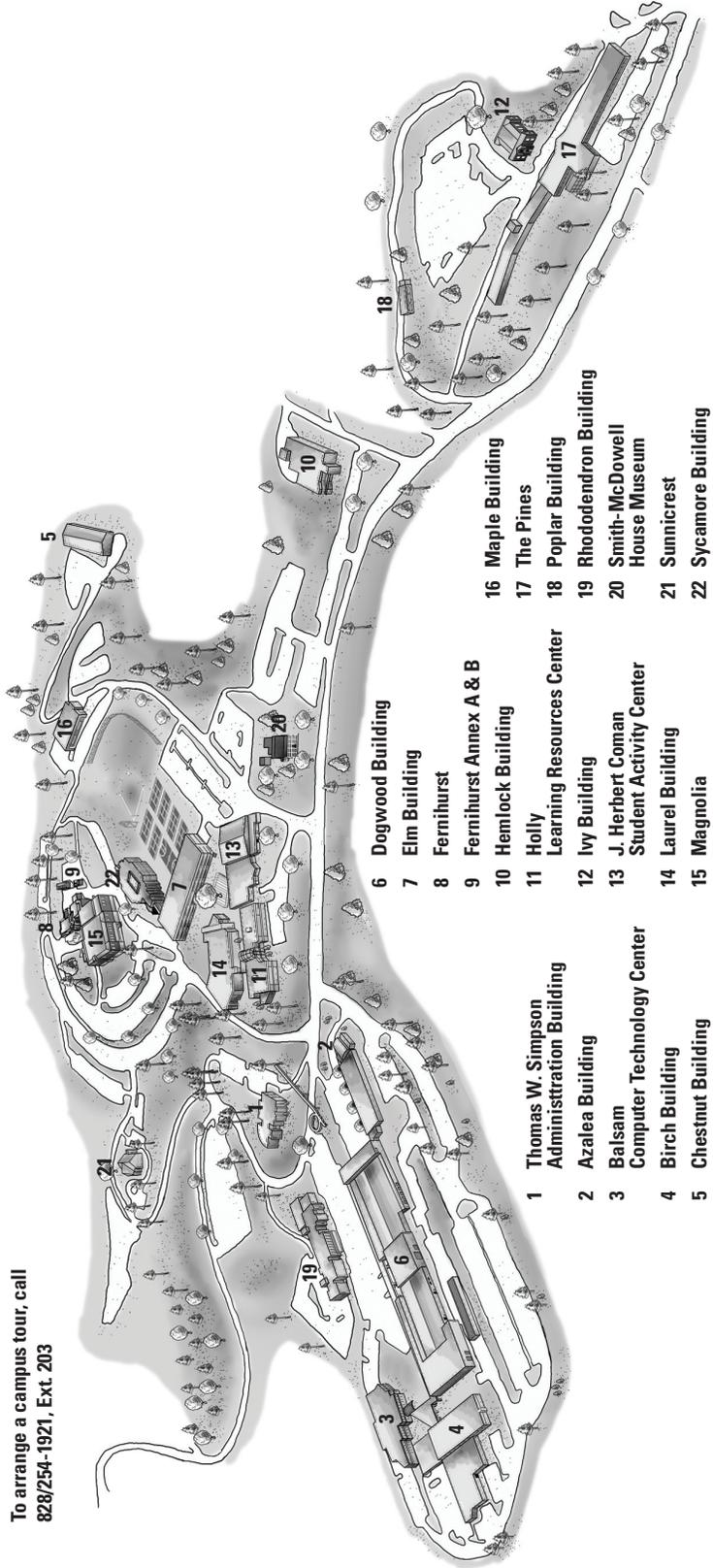
### Standard Met

- |  |   |
|--|---|
| 1. Progress of Basic Skills Students<br><b>Standard:</b> 75% making progress   | YES<br>81% making progress  |
| 2. Passing Rates for Licensure and Certification Exams<br><b>Standard:</b> 80% aggregate passing rate<br>70% minimum passing rate for all exams  | NO<br>94% aggregate passing rate<br>8 of 9 exams with 70% or higher passing rate                            |
| 3. Goal Completion of Completers<br><b>Standard:</b> 95% goal achievement  | YES<br>100% of completers met their educational goal  |
| 4. Employment Status of Graduates<br><b>Standard:</b> 96% employment rate<br>adjusted for local employment conditions  | YES<br>99.8% employment rate  |
| 5. Performance of College Transfer Students<br><b>Standard:</b> Equivalent to Native UNC Sophomores and Juniors (85.9%)  | NO<br>84.8% of college transfer students had a GPA of 2.0 or above after two semesters at a UNC institution |
| 6. Passing Rates of Students in Developmental Courses<br><b>Standard:</b> 70% passing rate   | YES<br>90% passing rate   |
| 7. Success of Developmental Students in Subsequent College Courses<br><b>Standard:</b> No statistically significant difference between the performance of developmental and non-developmental students | YES<br>Developmental pass rate: 89%<br>Non-developmental pass rate: 85%                                     |
| 8. Satisfaction of Completers and Non-Completers<br><b>Standard:</b> 90% satisfied with the quality of college programs and services   | YES<br>97% satisfaction rate  |
| 9. Curriculum Student Retention and Graduation<br><b>Standard:</b> 60% of student cohort retained or graduated   | YES<br>64% retention rate   |
| 10. Employer Satisfaction<br><b>Standard:</b> 85% satisfied with the services provided by the college  | YES<br>96% satisfaction rate  |
| 11. Business/Industry Satisfaction with Services Provided<br><b>Standard:</b> 90% satisfied with the services provided by the college  | YES<br>100% satisfaction rate   |
| 12. Program Unduplicated Headcount Enrollment<br><b>Standard:</b> Minimum annual enrollment of 10 students   | YES<br>All A-B Tech programs met this standard  |

Source: 2004 Critical Success Factors Report

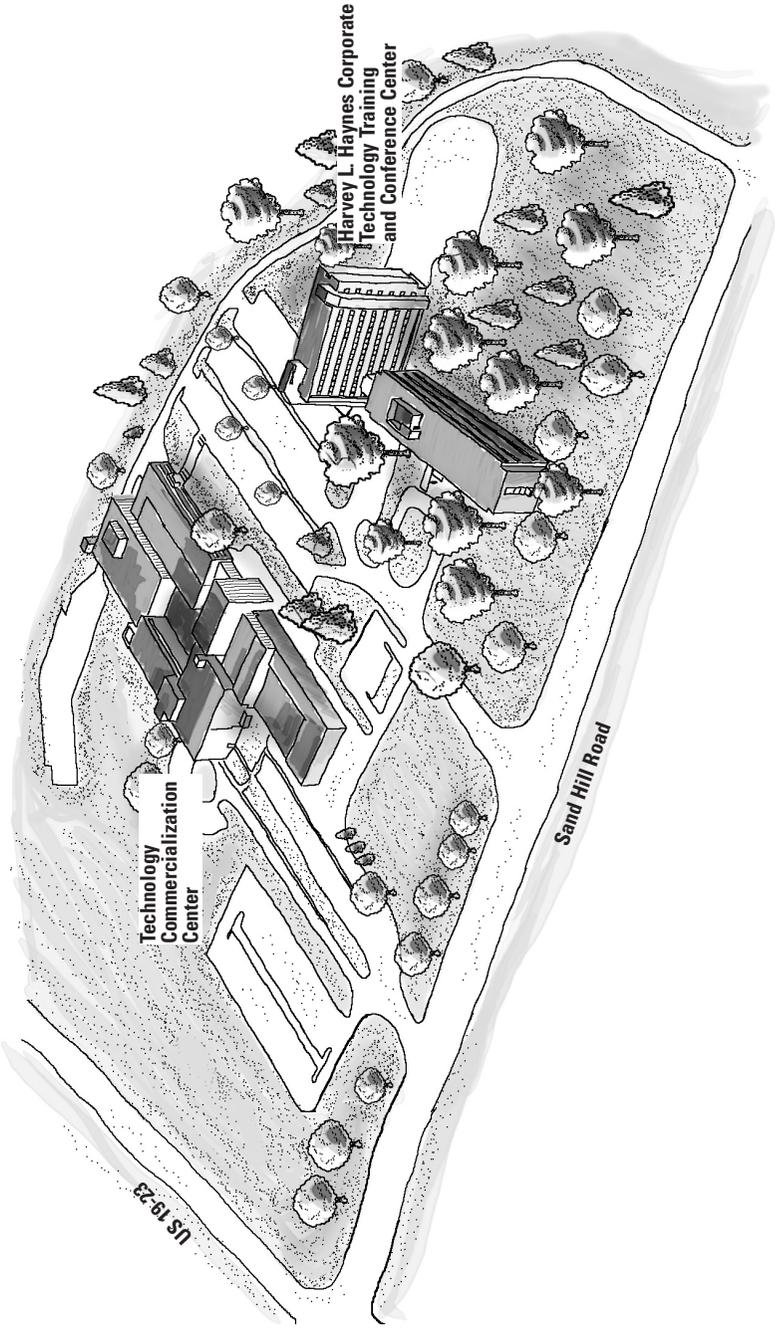
# Asheville-Buncombe Technical Community College - Asheville Campus

To arrange a campus tour, call  
828/254-1971, Ext. 203



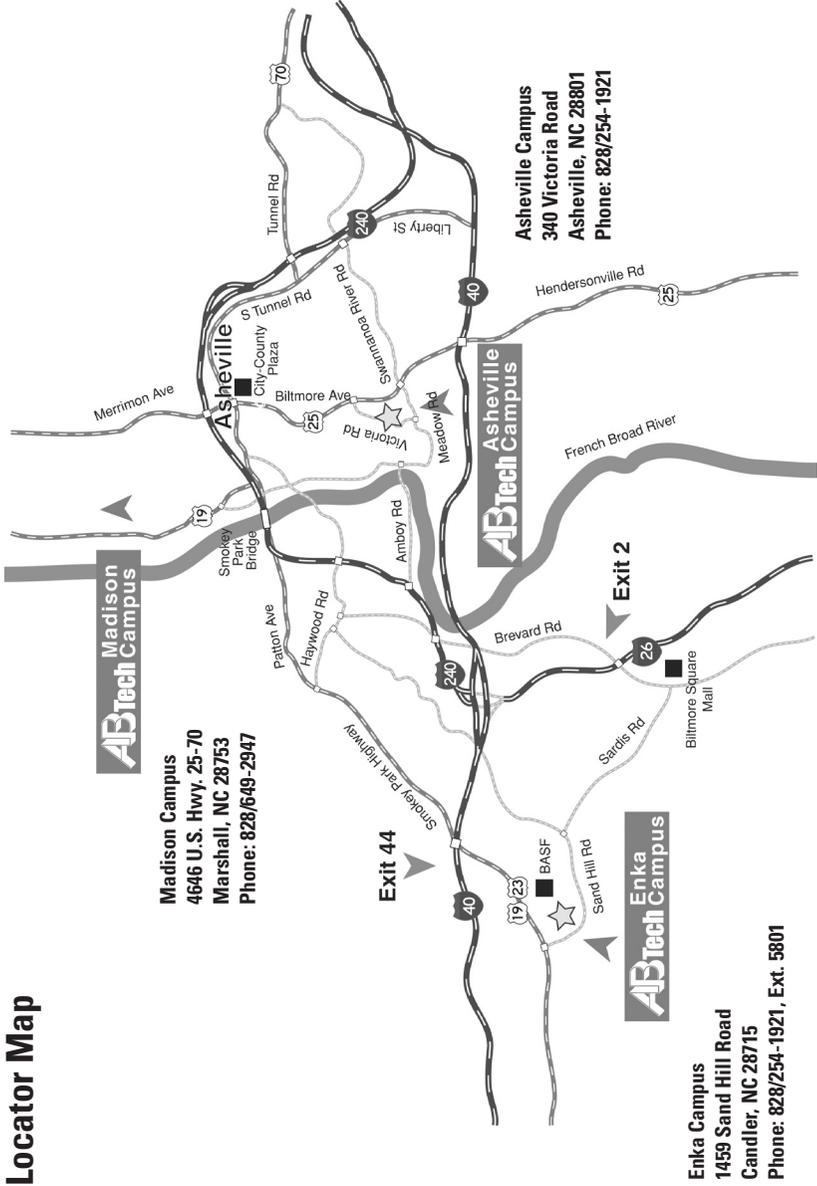
- |    |  |    |                                |
|----|--|----|--------------------------------|
| 1  | Thomas W. Simpson<br>Administration Building | 16 | Maple Building                 |
| 2  | Azalea Building                              | 17 | The Pines                      |
| 3  | Balsam<br>Computer Technology Center         | 18 | Poplar Building                |
| 4  | Birch Building                               | 19 | Rhododendron Building          |
| 5  | Chestnut Building                            | 20 | Smith-McDowell<br>House Museum |
| 6  | Dogwood Building                             | 21 | Sunnicrest                     |
| 7  | Elm Building                                 | 22 | Sycamore Building              |
| 8  | Fernihurst                                   |    |                                |
| 9  | Fernihurst Annex A & B                       |    |                                |
| 10 | Hemlock Building                             |    |                                |
| 11 | Holly<br>Learning Resources Center           |    |                                |
| 12 | Ivy Building                                 |    |                                |
| 13 | J. Heribert Coman<br>Student Activity Center |    |                                |
| 14 | Laurel Building                              |    |                                |
| 15 | Magnolia                                     |    |                                |

# Asheville-Buncombe Technical Community College - Enka Campus



Campus  
Map

# Campus Locator Map



# Buildings Legend

## Asheville Campus Facilities

Thomas W. Simpson

### Administration Building

Administrative Services  
Business Office  
College Relations Office  
Communications Office  
Elevated Lecture Room  
Foundation Office  
Instructional Services  
Office of the President

### Azalea Building

Admissions Office  
Career Center  
Counseling Offices  
Disability Services  
Employee and Organization  
Development Director  
Financial Aid Office  
International Student Services  
Placement Testing  
Records and Registration(Registrar)  
Research and Planning Office  
Veterans Representative

### Balsam Computer

#### Technology Center

Cisco Regional Academy  
Computer Programming  
Digital Media Technology  
Information Systems  
Medical Coding  
Medical Office Administration  
Medical Transcription  
Microcomputer Applications  
Networking Technology  
Office Systems Technology  
Word Processing/Desktop Publishing

### Birch Building

Accounting  
Baking and Pastry Arts  
Business Administration  
Computer-Aided Drafting Technology  
Culinary Technology  
Dining Room  
Hotel and Restaurant Management  
Human Resources Management  
Marketing and Retailing  
Mountain Tech Lodge  
Real Estate  
Real Estate Appraisal

### Chestnut Building

Plant Operations  
Receiving  
Security Office

### 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  
Welding Technology

### Elm Building

Certified Nursing Assistant (CNA)  
Civil Engineering Technology  
Electronics Engineering Technology  
English/Communications  
Humanities/Fine Arts  
Mathematics  
Mechanical Engineering Technology  
Surveying Technology  
Transfer Advising Center

### Fernihurst

#### Fernihurst Annex A and B

Faculty Offices  
Studio Art

### Hemlock Building

Basic Law Enforcement Training  
Criminal Justice Technology  
Early Childhood Associate  
Emergency Medical Science  
Fire Protection Technology  
Social Services  
Teacher Associate

### Holly Learning Resources Center

Audiovisual Services  
Library  
LRC Computer Lab

### Ivy Building

Continuing Education Classes  
Decorative Restoration

Buildings

Legend

Buildings

Legend

**J. Herbert Coman Student  
Activity Center**

A-B Tech Café  
 Bookstore  
 Gym  
 Health and Physical Education  
 Intramurals  
 Recruiter  
 Student Government Association

**Laurel Building**

Academic Learning Center  
 Developmental Studies  
 Ferguson Auditorium  
 Social/Behavioral Sciences

**Magnolia****Maple Building**

Continuing Education Classes  
 Flexible Automated Manufacturing  
 Training Center  
 JobLink Career Center  
 Workforce Development Office

**The Pines**

Adult Basic Education (ABE)  
 Adult High School  
 Compensatory Education  
 Continuing Education Business Office  
 Continuing Education Classes  
 English as a Second Language  
 General Education Development (GED)  
 Human Resources Development  
 Program

**Enka Campus Facilities****Harvey L. Haynes Corporate  
Technology Training and  
Conference Center**

Continuing Education Administration  
 Continuing Education Classes  
 Continuing Education Office/  
 Registration  
 Corporate and Economic Development  
 Occupational and Public Service Training

**Technology Commercialization Center**

Biotechnology  
 BioWork Classroom/Lab  
 Incubating Businesses  
 Small Business Center

**Poplar Building**

Child Care Center

**Rhododendron Building**

Associate Degree Nursing  
 Dental Assisting  
 Dental Hygiene  
 Information Systems Technology  
 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  
 Buncombe County Middle College  
 Career Pathways Partnership  
 Personnel

**Sycamore Building**

Biology  
 Chemistry/Physics  
 Distance Learning  
 Video Conference Center

**Madison Campus 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.

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 which 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 and in September 1989 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 campus in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since Dec. 12, 1984.

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.

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 approximately 37 acres and three buildings to A-B Tech to establish a satellite campus in Enka that includes a small business incubator and a corporate technology training and conference center.

## Administration

### Organization

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.

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 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 Continuing Education programs are supported through the activities of the GED Testing program, Guided Studies, and the Learning Resources Center. 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 campus in Madison County. The satellite operation provides adult education and College credit courses for the people of Madison County.

Organization

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 state-wide bond referendums, voters approved \$5 million in 1993 and \$14 million in 2000 for capital projects at A-B Tech.

Buncombe County Commissioners purchased for A-B Tech property 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 campus in Enka that includes a small business incubator and a corporate technology training and conference center.

## **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 ABTCC 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 25,000 in 2003-2004.

## Location

The main campus is located on Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most livable towns in America.

### Organization

Situated near major interstates and on local bus routes, the College is convenient to the citizens it serves. The Madison Campus is located in Marshall, NC. The Enka Campus is located in the Enka community near Asheville, NC.

## College Mission, Vision, and Strategic Plan

### 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.

### College Strategic Plan

Consistent with our mission and vision, A-B Tech has identified the following strategic goals:

1. Utilize comprehensive research, planning, and marketing to ensure the effectiveness of college programs and services.
  - a. Develop and implement a comprehensive program for marketing the college.
  - b. Ensure that departments/divisions utilize the results of the college planning and evaluation process.
2. Attract, develop, and retain qualified employees who are dedicated to student success.
  - a. Determine the college's human resource needs to ensure effective and efficient utilization of resources and delivery of college programs and services.
  - b. Establish an efficient approach to the recruitment process that expands the number and diversity of qualified candidates.
  - c. Establish a selection process that more accurately identifies candidates who are likely to be successful on the job.
  - d. Enhance the success, quality, and stability of the college through organization and leadership development.
  - e. Establish and maintain a performance management program that facilitates organization and employee growth.
3. Utilize college facilities to effectively accommodate increasing enrollment and facilitate the efficient delivery of programs and services.
  - a. Ensure adequate facilities to meet program needs and to promote institutional effectiveness.

- b. Implement a utilization plan for college properties to improve the use of space for college activities.
- 4. Ensure the success and stability of the college through efficient administrative processes and diversified financial resource development.
  - a. Implement the new administrative information system with minimal disruption.
  - b. Implement administrative processes that improve efficiency.
  - c. Complete a plan for diversified financial resource development.
- 5. Enable prospective and current students to achieve their educational goals in an environment that focuses on meeting their needs.
  - a. Implement success strategies to assure student perseverance toward goal completion.
  - b. Provide effective academic advising and career counseling services.
  - c. Ensure consistent quality services to students in Huskins Bill Programs.
  - d. Promote transition opportunities between continuing education and curriculum.
  - e. Facilitate student transfers between A-B Tech and four-year colleges and universities.
- 6. Offer educational opportunities that promote academic excellence and complement community development.
  - a. Offer quality instructional programs that are relevant, affordable, and responsive to community needs.
  - b. Encourage and support the implementation of innovative teaching methods.
  - c. Utilize alternative delivery methods to meet the diverse needs of students, and assess their effectiveness.
- 7. Support economic development through strategic business and community partnerships.
  - a. Provide a variety of innovative services to the business community.
  - b. Collaborate with other organizations to attract emerging technology companies to the region.
  - c. Establish more community and business partnerships.

## **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 ap-

plication of Title IX, the ADA, and other Federal nondiscrimination legislation to Asheville-Buncombe Technical Community College should be referred to:

Director of Personnel  
 Asheville-Buncombe Technical Community College  
 340 Victoria Road  
 Asheville, North Carolina 28801  
 Sunnicrest Building  
 Telephone: 828/254-1921, Ext. 113  
 TDD: 254-1921, Ext. 444 or depress space bar several times for operator assistance  
 Internet: [www.abtech.edu](http://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, materials in alternative accessible formats, or who wish to file a complaint of alleged discrimination on the basis of disability should contact the ADA Coordinator 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 respon-

sible, 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 unsecure 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 North Carolina Integrated Information Network. As such, all users are

subject to the governing policies established by the North Carolina Information Resource Management Commission (IRMC) in addition to the above A-B Tech Internet and Campus Network Acceptable Use Policy. The current IRMC policy governing use of the North Carolina Integrated Information Network and the Internet can be reviewed on their Web site at [www.scio.state.nc/sitPolicies.asp](http://www.scio.state.nc/sitPolicies.asp).

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# Continuing Education

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Continuing Education provides employee skill training for business and industry, vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those seeking a higher educational level, and certain avocational courses for individual enrichment.

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# Continuing Education

The 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 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 most conveniently be met.

Some of the 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 Continuing Education Unit (CEU) credit; these unit credits are not a part of college curriculum diploma or degree programs. Curriculum courses that carry full college diploma and degree credits are offered at off-campus sites through the coordinated efforts of Continuing Education Program directors and the deans and department chairs of the four curriculum academic divisions of the College.

The Continuing Education Division provides programs for adults age 18 or older. Minors may enroll for some classes with special permission. For some programs, the enrollment of minors cannot displace an adult.

## Costs

Costs for Continuing Education classes vary, but there is usually a nominal registration fee. Fees may also be charged for books, materials, and supplies. For some classes, North Carolina residents age 65 or older are exempted 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 continuing education class. The 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 classes may continue in them 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.

Continuing  
Education

## Services

Continuing Education needs are addressed in four domains: (1) Corporate and Economic Development Services, (2) Occupational and Public Service Training, (3) Community Service Programs, and (4) Adult Basic Skills and Human Resources Development.

## Corporate and Economic Development Services

The Center for Corporate and Economic Development provides programs and training that supports local business and industry. The Center ties the College to the associated efforts of local, regional, and state agencies for economic development.

**Focused Industrial Training (FIT)** is designed to address the special training needs of existing North Carolina industry. Serving primarily the manufacturing population, FIT uses individual needs assessment and consultations to target and upgrade workers' skills needed to keep up with new work methods and technology. FIT job training can be designed for skilled and semiskilled workers, lead supervisors, and team leaders. The targeted occupations are material handlers, assembly technicians, welders, machinists, maintenance mechanics, metal workers, production line workers, and woodworking machine operators. Training can be customized and tailored to meet company needs. Technical assistance is also available, on a wide variety of subjects, to businesses and industries through FIT.

**New and Expanding Industry (NEIT)** provides financial help for training new employees to meet growth and expansion demands. Through customized training programs designed for each com-

pany, NEIT offers training at no cost to the employer. New and expanding companies are able to initiate operations more quickly and become more productive with this assistance. Training is offered in three ways: college provided, vender provided, and company reimbursement.

The **Small Business Center** provides free consulting and advising services to existing and potential small business owners. Through very practical, short-term seminars, the Center addresses the continuing needs of small business clients for updating information, refining entrepreneurial skills, and improving profit margins. The Seminars address the critical areas of capital formation and prevention of business failures. The Small Business Center works cooperatively with local Chambers of Commerce, the Service Corps of Retired Executives (SCORE), and the U.S. Small Business Administration.

The **Quality Program** provides training and technical assistance in total quality practices and ISO 9001:2000 for businesses, industries, and public and private sector agencies. Programs include process improvement, team building, quality skills, statistical process control, facilitator development, self-assessments, 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 **Productivity Institute** offers training in the disciplines that make industries more competitive. The Institute currently offers courses and assistance with Lean Manufacturing and Six Sigma Quality.

The **Computer and Emerging Technology Training Program** 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, our courses and programs cover such timely subjects as administrative and financial software, programming languages, relational database technology and database programming, software-specific training programs, operating systems, and beyond. Courses are offered in instructor led, online, and a hybrid format.

## 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 for employment in careers such as Fire and Fire Rescue, Emergency Services, Criminal Justice/Law Enforcement, Certified Nursing Assistant (CNA), and Dental Radiography. Other offerings include programs for the following occupational areas: effective teacher training, emission standards “OBD,” equine management, hospitality, notary public, biowork, and public safety education.

### Students in the **Decorative Painting Techniques & 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. Qualifying graduates will receive the “City and Guilds of London” certificate for Decorative Painting and Restoration. 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, site organization, decorative treatments, and color. There are also opportunities for international travel.

**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, home inspection, refrigeration and CFC testing, OSHA safety management and supervision.

## 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 the upgrading of existing art, languages and practical skills. Among the art component courses are calligraphy, drawing, oil and watercolor painting, pottery, sculpting, photography and creative writing. The language component includes courses such as French, German, Italian, Spanish and Sign Language. Typical class offerings in the practical skills

component of the program include cooking, upholstery, sewing, quilting, residential landscaping, picture framing and matting.

## Adult Basic Skills and Human Resources Development

Continuing  
Education

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

One of two adult high school programs can lead the student to the equivalent of high school completion: (1) The General Education Development (GED) Program offers instruction in five subject areas in preparation for taking the high school diploma equivalency (GED) test and (2) The Adult High School Diploma Program provides instruction designed to qualify individuals for an adult high school diploma, awarded jointly by a local board of education and the College after the student successfully completes 20 units of credit and the North Carolina Competency Tests. Instruction for Basic Skills Programs is available 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
- Social Studies
- Reading
- Mathematics
- Science

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 (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 Simpson Administration Building before arriving at the testing center.

**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 indepen-

dent 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.

Continuing

Education

The **Human Resources Development (HRD) Program** provides short-term pre-vocational training and counseling designed to help unemployed and underemployed adults successfully enter the work force 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



# Curriculum Programs: Admissions and Student Information



# 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 see a counselor/advisor in Student Services in order to confirm further educational plans.

Placement into a specific course of study is based upon standards that will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may 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 and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of placement tests administered by the College. In the case of the eight competitive allied health programs, the placement tests are used to earn admission through a point system. Provisional or unconditional admission to individual programs will be determined by scores on the tests. (See programs for details.) 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 Coordinator of Disability Services.
4. A complete physical examination may be required by some programs, but only after the student is admitted.

Upon completion of this procedure, the student will 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 Student Services.

## Competitive Allied Health Programs

Admission to seven of the Allied Health curricula is competitive among qualified applicants according to established criteria and has a limited application period. Competitive Allied Health programs include Associate Degree Nursing, Dental Assisting, Dental Hygiene, Medical Sonography, Practical Nursing, Radiography, Phlebotomy, 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](http://www.abtech.edu). The printed version is available in the Counseling Center. The criteria are reviewed, updated, and approved annually.

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## 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 to the Coordinator of Disability Services. 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 Accuplacer scores which have been earned within the preceding three years. To be enrolled directly into the first-level curriculum English and math courses, students would need to have a score of 500 on both the verbal and mathematics portions of the SAT or 21 on ACT English, 18 on ACT Reading, and 20 on ACT Math. 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 Admissions and Counseling offices.

All students, upon submitting a College application, will receive a copy of the college's "Placement Testing" brochure with a list of testing dates and times. The brochure provides information on each of the placement testing sections as well as a sample test. 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 a counselor or 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 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 Skills Student Status**

Students who place into Adult Basic Skills 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 Skills language and mathematics must also receive appropriate remediation prior to enrolling in College courses.

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

## **Transfer, Proficiency, 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 and obtain from the Admissions Office a Request for Transfer Credit form for the evaluation of all post-secondary work. Transcripts will not be evaluated until this form has been completed. No 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. 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. Transfer 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 translations of (a) the transcript, (b) course descriptions, and (c) the grading system. Credits will be evaluated in the context of the current catalog.

A Student who desires to transfer credit from an institution that is not accredited by a regional accrediting agency may request department chair approval. The department chairperson may approve transfer, if the following criteria are met:

1. The student must be enrolled in the program for which he or she is seeking the transfer credit.
2. Technical/vocational credits from programs with specialized national accreditation may be accepted for transfer if the department chair determines that course competencies are equivalent to A-B Tech course competencies.
3. A technical/vocational course must be within one semester-hour credit of the required A-B Tech course to be considered equivalent.

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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 will not be eligible for the Articulation Agreement between the universities and NCCCS. Students who have quarter courses will also not be eligible for the Articulation Agreement. Transcripts of these students will be evaluated on a course-by-course basis.

Students transferring into the AA or AS 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 given credit for the general education core.

#### **Credit by Examination (Proficiency 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. 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”). The decision of the examining instructor is final. No quality points are awarded for credit by examination.

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. Most institutions will not accept proficiency credits for transfer.

Students who request Credit by Examination must:

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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 choose to begin with a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and have an indication of Proficiency Credit by Examination (P) posted to their record for the course. Receiving proficiency credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by examination are encouraged to purchase textbooks and materials and remain in the class 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 proficiency credit. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination. Students may choose to overload in this case.

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

### **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 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) courses or College Level Examination Program (CLEP) test scores. A-B Tech academic credit will be granted to enrolled students who receive scores of 3, 4, or 5 on the AP tests offered by the College Board. CLEP is granted for scores of 50%. 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.

A-B Tech credit may be granted to students who have satisfactorily passed certain CLEP tests. Credit may be considered only for those courses which have been approved by the various divisions and/or programs of the College. A maximum of six semester credit hours may be granted for each CLEP subject examination. A-B Tech will accept a total of 12 semester credit hours earned through CLEP tests. See the Admissions Office in the Azalea Building for details.

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**Continuing Education.** Continuing education credits which 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 applications 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. An 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 or 450 on the paper-based test. 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 51.1 on the reading section and 52.1 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 in the Counseling 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/international.htm](http://www.abtech.edu/Student_Services/Admissions/International/international.htm). E-mail inquiries should be addressed to: [rhowell@abtech.edu](mailto:rhowell@abtech.edu).

# Student Support Services

## Counseling Services and the Career Center

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A-B Tech provides free, confidential counseling and related services for students through the Counseling Center located in the Azalea building. 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 Azalea building, houses a variety of career resources, both print and computerized, to assist students in career-related areas. 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 or a diploma curriculum are advised by a faculty member from that curriculum. Unclassified students are advised by the counselors/advisors in Student Services. Counselors/advisors initially determine the developmental courses for students based upon the results of placement testing. Faculty advisors use this information when advising provisional students. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic standards. No student will be allowed to register without an advisor's signature. Students who desire to register for more than 20 credit hours in a semester will need the approval of their department chair.

College transfer students 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 Division on a first-come, first-serve basis. The Center is open from 8:30 a.m. until 6:30 p.m. Monday through Thursday and from 8:30 a.m. until 4:30 p.m. on Friday. Any transfer student 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, notetakers, 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 Azalea 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 Coordinator of Disability Services at 828/254-1921, Ext. 141. 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.

The College has a telecommunications device for the deaf (TDD/TTY). Calls are received at the College switchboard, and the spacebar should be pressed several times to signal a TDD/TTY call. Please remain on the line while your call is being transferred to the Disability Services Office. Our purpose is to facilitate your involvement in the life of our College and all of the benefits it provides.

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 in structured and unstructured settings. A tutorial component serves curriculum students needing assistance outside of class in math or English related subjects. Tutoring is accomplished through individual sessions, small groups, and computer-assisted instruction.

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 grade of "D" will not be used for Developmental Studies courses.

Developmental Studies courses are listed in the class schedules. Current lab schedules may be obtained from Developmental Studies personnel.

## 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:

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1. Student Welcome (Orientation). The Student Welcome is available on local cable television or by requesting a video cassette 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.
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 Vice President for Student Services. **dking@abtech.edu**.
9. Schedule of Classes. Schedules of classes will be mailed to every home in Buncombe and Madison Counties each fall and spring semester. Schedules are also available each semester on the College web page.
10. Financial Aid. Applications for federal financial aid (FAFSA) are available on the Internet. Financial Aid advice is available by e-mailing the director of financial aid. **ldeyton@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 from the Director of Counseling. **dharmon@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 counselor for students with disabilities. **aclingenpeel@abtech.edu**.

14. Career Counseling Services. Some career counseling services are available through e-mail or the postal service. **sthompson@abtech.edu.**
15. Placement Testing. Placement testing may be accomplished at any college which offers the Accuplacer Test. 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 at the College web page.
17. Purchase of Books. Books may be purchased online from the College Bookstore.

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# 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, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact the Director of Admissions.

## Tuition\*

### Fall, Spring, and Summer Semester:

N.C. residents per semester .....	\$608.00
Nonresident of N.C. ....	\$3,376.00
(16 or more credit hours)	
Part-time N.C. residents per credit hour per semester .....	\$38.00
Nonresident of N.C. per credit hour per semester .....	\$211.00
(fewer than 16 credit hours)	
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.*

## 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 day, on-campus credit hours will be charged a student activity fee of \$12.00 for fall and spring semesters and \$10.00 for summer semester. The student who enrolls for eight or fewer day, on-campus credit hours will be charged a student activity fee of \$9.00 for fall and spring semesters and \$6.00 for summer semester.

## 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 .....	\$600-800
Supplies .....	\$200-500

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

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

### **Business and Hospitality Education**

Books .....	\$600-900
Supplies .....	\$100-500

### **Engineering and Applied Technology**

Books .....	\$500-600
Supplies .....	\$150-1000

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, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, pins and caps. 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 Refund Policy

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. 11-12) for 10% dates each semester. Insurance and student activity fees are NOT refundable. Federal regulations, if different from above, will overrule this policy.

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

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## Tuition Refund Procedure

To be eligible for a tuition refund the student must:

1. Register and pay tuition and fees.
2. Process a "Drop/Add Registration Change Notice" form in the Student Records and Registration Office on or before the 10% point of the term as defined above.

# 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 which 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 applications 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 Financial Aid Office. Alternative accessible application formats will be made available to individuals with disabilities upon request to the ADA Coordinator.

## Application Procedure

All applicants desiring priority consideration for available financial aid funds must complete the following steps:

1. Before applying for financial aid it is advisable that each applicant complete the first three steps of the Admission Procedure. (See Table of Contents for the General Admission Requirements and Procedures page reference.)
2. The applicant must complete and mail a Free Application for Federal Student Aid (FAFSA) to the Federal Student Aid Program in the envelope which accompanies the application. (Important Note: Applicants may use the electronic version of the FAFSA-FAFSA on the Web to apply for assistance. For more information about the electronic application, the applicant may call FAFSA customer service at 1-800-801-0576. Electronic applications are processed faster than paper applications. Applicants may use the College computers in the Holly Learning Resources Building computer lab and in the Financial Aid Office in the Azalea Building to access FAFSA on the Web and to file their application electronically.)
3. When completing the application, the applicant must list the appropriate federal school code number on the application. A-B Tech's code number is 004033.

The applicant will receive a Student Aid Report (SAR) from the processor approximately three to four weeks after mailing the application. The Financial Aid Office receives an electronic report from the processor and will notify the applicant when the report has been reviewed.

Once the application process has been completed, the applicant's eligibility for assistance will be determined. Official notification of awards is made no earlier than May 15 prior to fall semester enrollment. Each award is contingent upon the availability of funds.

Students desiring additional information about the Financial Aid Program at A-B Tech are urged to write or phone: Office of Financial Aid, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC 28801, (828) 254-1921, Ext. 163.

## Satisfactory Academic Progress Standards for Financial Aid

Introduction. 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).

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**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***
1-10	1	0.50
11-20	4	0.50
21-30	10	0.75
31-40	16	1.00
41-45	23	1.25
46-50	30	1.50
51-55	36	1.75
56-60	40	2.00
61-65	43	2.00
66-70	47	2.00
71-75	50	2.00
76-80	53	2.00
81-85	57	2.00
86-90	60	2.00
91-95	63	2.00
96-100	67	2.00
101-105	70	2.00
106-110	73	2.00
111-114	76	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 independent 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 ( $47 \times 150\% = 71$ ).
2. Associate Degree Nursing requires 75 credit hours to complete the degree. The time frame is calculated ( $75 \times 150\% = 113$ ).
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 ( $65 \times 150\% = 98$ ).
4. Carpentry requires 46 credit hours to complete the diploma. The time frame is calculated ( $46 \times 150\% = 69$ ).

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 their academic advisor and/or the student services counseling staff. It is the responsibility of the student to register only for classes listed in their chosen major in the College Catalog and for scheduling only the number of hours they are 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

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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 Due Process 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. A collection of scholarship booklets are kept on reserve for student use in the Resource Room of the A-B Tech Financial Aid Office in the Azalea Building.

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An excellent source for scholarships is located on the World Wide Web. Students can do searches by accessing [www.finaid.org](http://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/](http://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.

- By February 1, applications are available from the Financial Aid Office located in Azalea.
- By March 1, students applying for scholarships requiring the establishment of financial need should complete the Free Application for Federal Student Aid (FAFSA).
- By May 1, scholarship applications are due to the Financial Aid Office.
- By July 15, the Foundation Office informs the students and the Financial Aid Office of the selection status.

For additional information about the Foundation, please call 254-1921, Ext. 176 or 179.

### **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](http://www.ed.gov/offices/ope)**: Click on "Information for Students" for federal student aid information.

**[www.cfnc.org](http://www.cfnc.org)**: Provides comprehensive information about scholarships, loans and other programs/issues.

**[www.nasfaa.org](http://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](http://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.

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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/](http://www.ed.gov/inits/hope/).*

## Veteran's Educational Benefits

The Veteran's Advisor will help incoming veterans evaluate their eligibility for benefits. The Veteran's Office is located in the Counseling Center in the Azalea Building. 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.

## 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.

# Student Rights, Responsibilities and Due Process

## Code of Student Conduct

Over 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.

Consequences for violations include verbal warnings, written warnings, disciplinary probations, particular consequences adapted to the violation, and suspensions. Any disciplinary decision rendered by the Vice President for Student Services may be appealed to the Student Due Process Appeals Committee.

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. Rights, as they pertain to the hearing, are listed elsewhere in this manual.

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. **Assault** - 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.
5. **Damage to Property** - You may not damage property of the College or of any other person working at or attending the College.
6. **Disobedience** - You may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.
7. **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.
8. **Disruption** - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
9. **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.
10. **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.
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.
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. **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.
15. **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.

16. **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 prosecution as well as College discipline.
17. **Use of the Internet** - The College has an extensive policy on 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 e-mail or access to sexually explicit material.

## 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 or pages during class. You are responsible for turning off cell phones and beepers upon entering class.
5. **Conversation.** Do not carry on side conversations in class.
6. **Food, Drink, Tobacco Products.** You may not have food or drink in class. You may not use tobacco products in the buildings of A-B Tech.
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.

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 of 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 which 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 Azalea Building.

The intention of the Student Appeal Policy is that the faculty member or other employee who has been responsible for the act which 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 mat-

ter 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.

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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 made 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 nonteaching 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. 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.

# Other Policies Affecting the Campus Environment

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## Workplace Violence Prevention Policy and Procedures Policy

ABTCC 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.

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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.

# Academic Procedures

## 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 proce-**

dures before the grade of “U” is recorded. (Note: To receive course credit when enrolled in associate degree nursing or practical nursing, a student should attend a minimum of 90% of the contact hours of all NUR courses. Upon accumulating absences exceeding 10% 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.)

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.

## Examples of Excessive 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.

## 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.		
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.	Admissions and Student Information

## 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 by Examination.
- T Transfer credit from other colleges, universities, and military credit.
- TS Transfer credit for NCCC semester courses 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.

## 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 complete a “Request for an Audit Grade” form in the Student 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 Student 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

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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. The student must submit a “Transcript Correction” form to the Student Records and Registration Office to request that the lower grade be excluded in the grade point average calculation.

## 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 point 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.”

## 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.)

## 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 curriculum area dean on a case-by-case basis.

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## 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 Student 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 mini-mesters the 10% occurs on the fourth day. For Summer Session the 10% occurs on the fifth day.) To drop a course, the student should fill out a **“Drop/Add Registration Change Notice.”** This form can be obtained in the Student Records and Registration Office. 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 Counselor. **All withdrawal forms must be submitted to the Student Records and Registration Office during the first 75% of the term.** (For full semester classes the 75% point occurs at the end of the 12th week. For mini-mesters 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 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 completing a **“Drop/Add Registration Change Notice”** form in the Student Records and Registration Office. 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.

## Course Substitutions

Course substitutions must be approved by the program area dean. The course grade will be the grade earned in the substitute course(s).

## Independent Study

Selected courses may be available for Independent Study at the discretion of the faculty with Department Chair approval. The completed "Request for Independent Study" form must be presented to the Students Records and Registration Office when the student registers.

## Final Exam 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.

## 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 will be posted on the grade report for that semester and the student's advisor will be

notified. The warning advises students of their academic status and encourages them to meet with their advisor immediately to examine present academic plans.

## 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.

## 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 Student 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.

## 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.

## 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, 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.

## Privacy of Student Records

1. In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), Asheville-Buncombe Technical Community College will not release information concerning its students except for directory information, and as stipulated in

paragraph 3 below. Directory information is defined as:

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| a. name                             | e. major field of study             |
| b. address                          | f. dates of attendance              |
| c. telephone number                 | g. degrees received                 |
| d. date of birth and place of birth | h. Dean's List/<br>President's List |

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Directory Information will be released to anyone who asks for it, unless the student specifies in writing to the Student Records and Registration Office that this information is to be withheld. In such cases, no directory information will be released.

2. A student over the age of 18 is considered an adult within the definition of the law and controls who has access to his or her records. A parent of an eligible student does not automatically have access to the student's records. In order for parents to have access to a student's 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 file.
3. Asheville-Buncombe Technical Community College will release a student's educational records without his or her approval only as follows:
  - a. to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.
  - b. to officials of another college or university in which a student seeks to enroll.
  - c. to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.
  - d. to persons involved in granting financial aid for which the student has applied.
  - e. to state and local authorities to whom information is required to be disclosed under the provisions of a statute adopted prior to Nov. 19, 1974.
  - f. to testing, research, and accrediting organizations.
  - g. in compliance with a court order or lawfully issued subpoena.
  - h. in very narrowly defined emergencies affecting the health and safety of the student or other persons.
  - i. to parents of eligible students under the provision of paragraph 2 above.

4. For further information concerning the Federal Educational Rights and Privacy Act, students may contact the Student Records and Registration Office.

## **Academic Programs And Graduation Requirements**

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### **Degrees, Diplomas, and Certificates**

#### **Degree Programs**

Asheville-Buncombe Technical Community College confers the following degrees: Associate in Arts, Associate in Applied Science, Associate in Science, and Associate in Fine Arts. These degrees are conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

#### **Diploma Programs**

Asheville-Buncombe Technical Community College awards a diploma in all one-year applied curricula. A diploma may be awarded upon completion of the first half of some degree programs. Diplomas are granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

#### **Certificates**

Certificates may be issued in the name of the Asheville-Buncombe Technical Community College to students who successfully complete designated short-term programs or course sequences. At least half of the credit hours in a certificate program must be earned at this College.

#### **Multiple Degrees/Diplomas/Certificates**

Students may earn multiple degrees, diplomas, and certificates upon completion of program requirements.

Students who have earned the Associate in Arts degree (A.A.) may also earn the Associate in Science degree (A.S.) by completing an additional 12 semester hours in appropriate math and/or science courses. Students who have earned the Associate in Science degree may also earn an Associate in Arts degree by completing an additional 12 semester hours in humanities and/or social/behavioral science course.

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

In order to declare a major, change majors, or add a second major, the student needs to see a counselor/advisor in Student Services. A change-of-major form indicating the new major or the second major must be completed by the counselor/advisor. The catalog in effect at the time of this declaration will be the catalog recorded for this major. (See Requirements for Graduation on the following page.)

#### **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 2005 cannot use a catalog earlier than 2000-2001). 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. The advisor must document the official catalog selected on the Application for Graduation.
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.
  - c. Take an A-B Tech proficiency exam.

**At least half of the credit hours in a program of study must be earned at this College by taking courses and/or proficiency examinations. Any exception must be approved by the Vice President, 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.**

3. Earn a grade of at least "C" in each course with a major prefix 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. **Submit an application for graduation to the Student 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.
6. Be present for graduation and attired in the proper academic robe. (Students who do not attend the graduation ceremony must submit to the President a written request to be excused at least two weeks prior to graduation.)

## Transfer of Credit to Other Institutions

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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.

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College transfer courses satisfactorily completed with a grade of “C” or better in the Associate in Fine Arts program will transfer to senior institutions. Degree completers may transfer to selected universities.

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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 advisor in Student Services 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.

## College Services And Information

### College Services

**Academic Learning Center.** The Academic Learning Center provides several types of academic assistance to students.

The tutorial component serves curriculum students needing assistance outside of class in math or English related subjects. Tutoring is accomplished through individual help, small groups, and computer assisted instruction. These labs are staffed by an instructor and assistants or peer tutors. Students are referred to the labs for tutoring by their instructors.

The foreign language practice lab is located in the Academic Learning Center. Lab practice is expected of all foreign language students.

The Academic Learning Center also houses an open computer lab. This 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 has been established to facilitate on-line testing, re-testing, make-up testing, extra-time testing or other special needs testing.

**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 ADA Coordinator.

**Child Care.** A-B Tech offers child care services for children of College students. Faculty, staff, and the general public may also apply for the service. The Center, operated by Buncombe County Child Development, is open during daytime hours.

The program accepts children from two months to five years. Individuals who meet State and Federal income guidelines may apply for financial assistance. Arrangements can be made by calling either 255-5725 or 255-5111 from 8:30 a.m. to 5 p.m. Monday through Friday.

**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 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.

**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, 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.

**Dental Clinic.** Throughout the year the Allied Dental Department provides oral health services, such as patient education, dental X-rays, cleaning the 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.

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.asheville.cc.nc.us](http://www.asheville.cc.nc.us) and click on the Virtual Campus link (or access the page directly at [www.asheville.cc.nc.us/vcampus](http://www.asheville.cc.nc.us/vcampus)). The Virtual Campus may be accessed from a home computer or from several computers on campus.

**A-B Tech Café.** The Café is located in the Coman Student Activity Center. Breakfast, lunch and dinner meals, including sandwiches, salads, and soups, are prepared daily. Hours of operation are from 7 a.m. to 7 p.m. Monday - Thursday and 7 a.m. to 3 p.m. on Fridays. Vending machines dispensing soft drinks, coffee, and snacks are located 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 newspaper, *Voices*, for times, dates, and reservation information.

**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 extracurricular 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.

**Learning Resources Center.** The Learning Resources Center (LRC) includes the Library, Audiovisual Services and LRC Computer Lab. Together, they provide information, guidance, and instruction in a wide range of resource material. In addition, the LRC provides a variety of A-V equipment to supplement classroom, laboratory, and shop experiences. The LRC provides a variety of services and resources to support high-tech, information-dependent curriculum programs. The LRC serves a variety of informational needs of students and faculty, including those who are utilizing distance education technology. All routine library functions such as catalog, circulation, and reserves are automated to provide electronic access within the main campus, Madison campus, and remotely to users who have home computers. These resources include interlibrary loans, electronic and print indexes, online full-text databases, Internet and Web-based products (including NCLIVE and NCLIVE@home.) These resources are available through the College's Web site and the LRC's homepage.

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The LRC is open Monday through Friday. Special needs clientele will be assisted by the LRC staff in utilization of resources. In addition, the LRC has many traditional print and non-print resources, with coin-operated copiers and microform reader/printers for use by all patrons. Audiovisual services and a computer lab are available for use by currently employed faculty and staff and by currently enrolled students.

The library makes available all of the LRC's collection of materials, both print and non-print formats. The collection is well organized for easy use. Automated catalogs, circulation, electronic indexes, and reference services provide the user with state-of-the-art access to research and recreational materials. The primary objectives of the library are to provide information services and to assist the user with utilization of the collection in an attractive, well-equipped facility that is open to the College and the community.

HOURS:	Monday-Thursday	8 a.m. - 9:00 p.m.
	Friday	8 a.m. - 4:30 p.m.

Audiovisual services are available to the College faculty, staff, and students. These services include production, materials, and equipment to support the instructional program and related activities, including satellite reception for seminars and teleconferences. The LRC maintains an inventory of audiovisual equipment to support College sponsored activities, along with an extensive collection of audiovisual materials. A staffed computer lab is available for student use. The computer lab is open during all library hours of operation. The AV department is staffed 8:00 a.m. - 4:00 p.m., Monday - Friday.

**Parking Locations.** 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.

**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.

**Recreation Center.** A recreation center is located in the Coman Student Activity Center for those students with spare time and who wish to play coin-operated video games or billiards.

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

**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 Azalea Building or the Coman Student Activity Center.

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# Allied Health and Public Service Education

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The Allied Health and Public Service Education Division provides students with opportunities at the postsecondary level to acquire knowledge, skills, and attitudes that will enable them to become effective and safe members of the health care and public service teams.

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Allied Health and Public Service Education	Associate Degree Nursing*	Criminal Justice Technology	Dental Assisting*
<b>Recommended High School Courses</b>			
	Algebra II Advanced Biology Chemistry Composition Courses in Health Occupations Anatomy/Physiology Keyboarding	English courses, particularly those with emphasis on writing skills Keyboarding	Composition Chemistry Advanced Biology Courses in Health Occupations Keyboarding
<b>A-B Tech Entrance Requirements</b>			
	Chemistry Biology English (4 units) Mathematics (2 units)  Competitive selection after acceptable scores on Reading Comprehension Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	High school diploma or GED  Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
<b>Program Schedule</b>			
	Day, Night/Weekend Begin Fall ADN Bridge Begins Spring	Day/Night Begin Fall. Can take single courses	Day Begins Fall
<b>Degree</b>			
	Associate in Applied Science	Associate in Applied Science	Diploma
<b>Employment Opportunities</b>			
	Hospitals Long Term Care Facilities Clinics Physicians' Offices Industry Community Health Agencies	Law Enforcement Highway Patrol Deputy Sheriff Private Security Magistrate Correctional Officer Surveillance Officer Alcohol Law Enforcement Wildlife Enforcement	Begins Fall Diploma V.A. Clinics Health Departments State Clinics Dental Schools Private and Group Practices Clinics
* See Selection Criteria and Procedures for Allied Health Programs brochure for full details.			

Dental Hygiene*	Early Childhood Associate	Early Childhood/Teacher Associate
<b>Recommended High School Courses</b>		
Composition Anatomy/Physiology Plane Geometry (or Algebra II) Advanced Biology Courses in Health Occupations Keyboarding	Composition Literature Keyboarding Courses in Childcare Occupations	Composition Literature Keyboarding
<b>A-B Tech Entrance Requirements</b>		
Chemistry, Biology English (4 units) Mathematics (2 units, one must be Algebra)  Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
<b>Program Schedule</b>		
Day Begins Fall	Day/Night Enter program at the start of any semester.	Day/Night
<b>Degree</b>		
Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
<b>Employment Opportunities</b>		
Dental Offices Education Local, State, and Federal Government Agencies Private Industry	Child Care Worker Child Care Assistant Director, Child Care Director, Preschool	Public Schools Private Schools Child Development Programs Headstart School Age Programs

Allied Health  
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\* See Selection Criteria and Procedures for Allied Health Programs brochure for full details.

Allied Health and Public Service Education	Emergency Medical Science	Fire Protection Technology	Medical Laboratory Technology *
<b>Recommended High School Courses</b>			
	Anatomy, Biology Mathematics Chemistry Composition Courses in Health Occupations Keyboarding	Mathematics Chemistry Keyboarding Composition	Anatomy Biology Applied Math Chemistry (strongly recommended) Geometry (strongly recommended) Keyboarding
<b>A-B Tech Entrance Requirements</b>			
	Acceptable scores on Reading Compre- hension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sen- tence Skills, Arithme- tic Skills, and College Board Computerized Placement Tests (CPT).	Biology Algebra I English (4 units)  Acceptable scores on Reading Compre- hension, Sentence Skills, Arithmetic Skills, Elementary Algebra, and College Board Computer- ized Placement Tests (CPT).
<b>Program Schedule</b>			
	Day Begins Fall	Day/Night Begins Fall	Day Begins Fall
<b>Degree</b>			
	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
<b>Employment Opportunities</b>			
* See Selection Criteria and Procedures for Allied Health Programs brochure for full details.	Emergency Medical Services Hospitals Urgent Care Clinics Physicians' Offices Private Ambulance Companies	Municipal Fire Departments Government Agencies Industrial Firms Insurance Rating Organizations Educational Organizations	Hospitals Emergency Care Clinics Health Departments Physicians' Offices General Clinics

Medical Sonography*	Phlebotomy	Practical Nursing*	
<b>Recommended High School Courses</b>			Allied Health
Anatomy Advanced Biology Applied Math Physics Keyboarding	High School Transcript or GED	Anatomy/Physiology Advanced Biology Composition Courses in Health Occupations Keyboarding	and Public Service Education
<b>A-B Tech Entrance Requirements</b>			
Biology Algebra I  Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, Elementary Algebra, and College Board Computerized Placement Tests (CPT).	Acceptable score on reading placement test.	English (4 units) Mathematics Biology  Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	
<b>Program Schedule</b>			
Day Begins Fall	Day Fall Day Spring	Day Begins Fall	
<b>Degree</b>			
Associate in Applied Science	Certificate	Diploma	
<b>Employment Opportunities</b>			
Hospitals Health Departments Physician's Offices Imaging Centers Mobile /Traveling Services	Hospitals Physician's Offices General Clinics	Hospitals Long-Term Care Facilities Physician's Offices Industry Community Health Agencies	* See Selection Criteria and Procedures for Allied Health Programs brochure for full details.

Allied Health and Public Service Education	<b>Radiography*</b>	<b>Social Services</b>	<b>Surgical Technology*</b>
	<b>Recommended High School Courses</b>		
	Anatomy Advanced Biology Applied Math Physics (strongly recommended) Keyboarding	Composition Literature Keyboarding Courses in Sociology and Psychology	Anatomy Biology Mathematics Chemistry Composition Health Occupations Keyboarding
	<b>A-B Tech Entrance Requirements</b>		
	Biology Algebra I  Competitive Selection after acceptable scores on Reading Comprehension, Science Skills, Elementary Algebra, and College Board Computerized Placement Test (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Biology Algebra I  Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Day Begins Fall	Day/Night Begins Fall	Day Begins Fall
	<b>Degree</b>		
	Associate in Applied Science	Associate in Applied Science	Diploma
	<b>Employment Opportunities</b>		
Hospitals Health Departments Physician's Offices Emergency Care Clinics Industry Imaging Centers	Case Aide Social Service Social Worker Aide	Hospitals Surgery Centers Physician's Offices Organ Harvest Organizations	

\* See Selection Criteria and Procedures for Allied Health Programs brochure for full details.

## **Veterinary Medical Technology**

### **Recommended High School Courses**

Anatomy  
Biology  
Mathematics  
Chemistry  
Composition  
Health Occupations  
Keyboarding

### **A-B Tech Entrance Requirements**

Biology  
Algebra I

Acceptable scores on Reading Comprehension, Science Skills, Elementary Algebra, and College Board Computerized Placement Test (CPT).

### **Program Schedule**

Day/Night  
Begins Fall

### **Degree**

Associate in Applied  
Science

### **Employment Opportunities**

Veterinary Clinics  
Diagnostic Labs  
Research Labs  
Zoos  
Animal Care Facilities

Allied Health  
and Public  
Service  
Education

# 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.

## **A.A.S. DEGREE CONFERRED**

- Associate Degree Nursing
- Criminal Justice Technology
- Dental Hygiene
- Early Childhood Associate
- Early Childhood/Teacher Associate
- Emergency Medical Science
- Fire Protection Technology
- Medical Laboratory Technology
- Medical Sonography
- Radiography
- Social Services
- Veterinary Medical Technology

## **DIPLOMA AWARDED**

- Dental Assisting
- Practical Nursing
- Surgical Technology

## **CERTIFICATE AWARDED**

- Basic Law Enforcement Training
- Early Childhood Associate
- Fire Protection Technology
- Phlebotomy

## 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.

Allied Health  
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Service  
Education

### Admission Requirements

1. 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.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
4. Students applying to the Associate Degree Nursing program are encouraged to have successfully completed: BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, SOC 215, and a Humanities elective prior to program admission due to the rigorous nature of the A.D.N. curriculum.
5. North Carolina Board of Nursing requires criminal background checks on all applicants for initial licensure.
6. Clinical Agencies may require criminal background checks prior to admission to clinical sites.

## Associate Degree Nursing – Associate in Applied Science Degree – Day Option

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (BIO, NUR prefix)</b>	<b>52</b>
<b>Related and general education courses including:</b>	<b>23</b>
<i>English/Oral Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	3
<b>PROGRAM TOTAL</b>	<b>75</b>

		<b>Weekly</b>				
		<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>						
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
			<b>11</b>	<b>12</b>	<b>6</b>	<b>17</b>

		<b>Second Semester (Spring)</b>				
Allied Health and Public Service	BIO 169	Anatomy and Physiology II	3	3	0	4
	CIS 110	Introduction to Computers	2	2	0	3
	NUR 135	Adult Nursing I	5	3	9	9
			<b>10</b>	<b>8</b>	<b>9</b>	<b>16</b>
		<b>Third Semester (Summer)</b>				
Education	NUR 185	Mental Health Nursing	3	0	6	5
	NUR 188	Nursing in the Community	1	0	6	3
	SOC 215	Group Processes	3	0	0	3
			<b>7</b>	<b>0</b>	<b>12</b>	<b>11</b>
		<b>Fourth Semester (Fall)</b>				
	ENG 114	Professional Research and Reporting	3	0	0	3
	NUR 125	Maternal-Child Nursing	5	3	6	8
	NUR 255	Professional Issues	3	0	0	3
	Humanities Elective		3	0	0	3
			<b>14</b>	<b>3</b>	<b>6</b>	<b>17</b>
		<b>Fifth Semester (Spring)</b>				
	NUR 116	Nursing of Older Adults	2	3	3	4
	NUR 235	Adult Nursing II	4	3	15	10
			<b>6</b>	<b>6</b>	<b>18</b>	<b>14</b>
<b>Program Totals</b>			<b>48</b>	<b>29</b>	<b>51</b>	<b>75</b>

## Associate Degree Nursing – Evening and Weekend Option

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.

### Admission Requirements

1. 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.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
4. Students applying to the Associate Degree Nursing program are encouraged to have successfully completed: BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, SOC 215, and a Humanities elective prior to program admission due to the rigorous nature of the A.D.N. curriculum.
5. North Carolina Board of Nursing requires criminal background checks on all applicants for initial licensure.
6. Clinical Agencies may require criminal background checks prior to admission to clinical sites.

# Associate Degree Nursing – Associate in Applied Science Degree – Evening and Weekend Option

Allied Health  
and Public  
Service  
Education

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major Courses (BIO, NUR Prefix)</b>	<b>52</b>
<b>Related and General Education Courses including:</b>	<b>23</b>
<i>English/Oral Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	3
<b>PROGRAM TOTAL</b>	<b>75</b>

				<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
				<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Hrs.</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
BIO	168	Anatomy and Physiology		3	3	0	4
NUR	115	Fundamentals of Nursing		2	3	6	5
NUR	117	Nursing Pharmacology		1	3	0	2
NUR	133	Nursing Assessment		2	3	0	3
				<b>8</b>	<b>12</b>	<b>6</b>	<b>14</b>
<b>Second Semester (Spring)</b>							
BIO	169	Anatomy and Physiology II		3	3	0	4
NUR	135	Adult Nursing I		5	3	9	9
				<b>8</b>	<b>6</b>	<b>9</b>	<b>13</b>
<b>Third Semester (Summer)</b>							
CIS	110	Introduction to Computers		2	2	0	3
NUR	188	Nursing in the Community		1	0	6	3
SOC	215	Group Processes		3	0	0	3
				<b>6</b>	<b>2</b>	<b>6</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>							
NUR	185	Mental Health Nursing		3	0	6	5
NUR	255	Professional Issues		3	0	0	3
ENG	111	Expository Writing		3	0	0	3
				<b>9</b>	<b>0</b>	<b>6</b>	<b>11</b>
<b>Fifth Semester (Spring)</b>							
NUR	125	Maternal Child Nursing		5	3	6	8
ENG	114	Professional Research and Reporting		3	0	0	3
				<b>8</b>	<b>3</b>	<b>6</b>	<b>11</b>
<b>Sixth Semester (Summer)</b>							
NUR	235(A)	Adult Nursing II		2	2	7	5
		Humanities Elective		3	0	0	3
				<b>5</b>	<b>2</b>	<b>7</b>	<b>8</b>
<b>Seventh Semester (Fall)</b>							
NUR	116	Nursing of Older Adults		2	3	3	4
NUR	235(B)	Adult Nursing II		2	1	8	5
				<b>4</b>	<b>4</b>	<b>11</b>	<b>9</b>
<b>Program Totals</b>				<b>48</b>	<b>29</b>	<b>51</b>	<b>75</b>

## Associate Degree Nursing Bridge Option

Allied Health  
and Public  
Service  
Education

### Admission Requirements

1. 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.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
4. 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.
5. The North Carolina Board of Nursing requires criminal background checks on all applicants.
6. Clinical agencies may require criminal background checks prior to admission to clinical sites.

*Licensed Practical Nurses in the bridge program will receive credit for NUR 115 Fundamentals of Nursing, NUR 117 Pharmacology, and NUR 135 Adult Nursing I upon successful completion of NUR 189 Nursing Transition. Licensed Practical Nurses in the Bridge Program must complete all general education courses required in the generic Associate Degree Nursing program prior to application deadline. These courses include: BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, SOC 215, and one 3-hour Humanities elective.*

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

*\*\* Licensed Practical Nurses completing BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, SOC 215 and a Humanities elective and receiving credit for NUR 115, NUR 117, and NUR 135 must complete the additional 38 credit hours listed to receive the Associate in Applied Science degree in nursing.*

## Associate Degree Nursing Bridge Option

<b>This program consists of:</b>	<b>Credit Hrs.</b>			
<b>Major courses (BIO, NUR prefix)</b>	<b>52</b>			
<b>Related and general education courses including:</b>	<b>23</b>			
<i>English/Communications</i>	6			
<i>Humanities/Fine Arts</i>	3			
<i>Natural Science/Mathematics</i>	8			
<i>Social Sciences</i>	3			
<i>Other</i>	3			
<b>PROGRAM TOTAL</b>				<b>75*</b>
	<b>WeeklyWeeklyWeekly</b>			
	<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>Second Semester (Spring)</b>				
NUR 133 Nursing Assessment	2	3	0	3
NUR 189 Nursing Transition	1	3	0	2
	<b>3</b>	<b>6</b>	<b>0</b>	<b>5</b>

**Third Semester (Summer)**

NUR 185	Mental Health Nursing	3	0	6	5
NUR 188	Nursing in the Community	1	0	6	3
		<b>4</b>	<b>0</b>	<b>12</b>	<b>8</b>

**Fourth Semester (Fall)**

NUR 125	Maternal-Child Nursing	5	3	6	8
NUR 255	Professional Issues	3	0	0	3
		<b>8</b>	<b>3</b>	<b>6</b>	<b>11</b>

**Fifth Semester (Spring)**

NUR 116	Nursing of Older Adults	2	3	3	4
NUR 235	Adult Nursing II	4	3	15	10
		<b>6</b>	<b>6</b>	<b>18</b>	<b>14</b>
<b>Program Totals</b>		<b>21</b>	<b>15</b>	<b>36</b>	<b>38*</b>

Allied Health  
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Service  
Education

## Associate Degree Nursing Bridge Option – Evening and Weekend Option

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (BIO, NUR prefix)</b>	<b>52</b>
<b>Related and general education courses including:</b>	<b>23</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	3
<b>PROGRAM TOTAL</b>	<b>75*</b>

<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>
<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>

**Second Semester (Spring)**

NUR 133	Nursing Assessment	2	3	0	3
NUR 189	Nursing Transition	1	3	0	2
		<b>3</b>	<b>6</b>	<b>0</b>	<b>5</b>

**Third Semester (Summer)**

NUR 188	Nursing in the Community	1	0	6	3
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**Fourth Semester (Fall)**

NUR 185	Mental Health Nursing	3	0	6	5
NUR 255	Professional Issues	3	0	0	3
		<b>6</b>	<b>0</b>	<b>6</b>	<b>8</b>

**Fifth Semester (Spring)**

NUR 125	Maternal Child Nursing	5	3	6	8
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**Sixth Semester (Summer)**

NUR 235(A)	Adult Nursing II	2	2	7	5
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**Seventh Semester (Fall)**

NUR 116	Nursing of Older Adults	2	3	3	4
NUR 235(B)	Adult Nursing II	2	1	8	5
		<b>4</b>	<b>4</b>	<b>11</b>	<b>9</b>
<b>Program Totals:</b>		<b>21</b>	<b>15</b>	<b>36</b>	<b>38</b>

## Basic Law Enforcement Training

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 Entrance 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. If accepted into the program, the student must submit completed North Carolina State 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.
6. 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. The testing is done in the Azalea 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. Arrive 20 minutes early; no appointment is necessary.

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

This program consists of:  
One major course

Credit Hrs.  
18

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CJC	100	Basic Law Enforcement Training	8	30	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.

Allied Health  
and Public  
Service  
Education

## Criminal Justice Technology – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (CJC prefix)</b>	<b>51</b>
<b>Related and general education courses including:</b>	<b>25</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Social Sciences</i>	6
<i>Other</i>	7
<b>PROGRAM TOTAL</b>	<b>76</b>

				<b>Weekly</b>		
				<b>Class</b>	<b>Lab</b>	<b>Credit</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>						
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	121	Law Enforcement Operations	3	0	3	
CJC	231	Constitutional Law	3	0	3	
ENG	111	Expository Writing	3	0	3	
			<b>14</b>	<b>4</b>	<b>16</b>	
<b>Second Semester (Spring)</b>						
CJC	112	Criminology	3	0	3	
CJC	132	Court Procedure	3	0	3	
CJC	222	Criminalistics	3	0	3	
HUM	115	Critical Thinking	3	0	3	
		Major Elective*	3	0	3	
			<b>15</b>	<b>0</b>	<b>15</b>	
<b>Third Semester (Summer)</b>						
CJC	113	Juvenile Justice	3	0	3	
CJC	114	Investigative Photography or CJC 120	1	2	2	
CJC	131	Criminal Law	3	0	3	
PSY	150	General Psychology	3	0	3	
		Major Elective*	3	0	3	
			<b>13</b>	<b>2</b>	<b>14</b>	

**Fourth Semester (Fall)**

Allied Health and Public Service	CJC 213	Substance Abuse	3	0	3
	CJC 221	Investigative Principles	3	2	4
	ENG 114	Professional Research & Reporting	3	0	3
	SOC 225	Social Diversity (Or PSY 281) Major Elective*	3	0	3
			<b>15</b>	<b>2</b>	<b>16</b>

**Fifth Semester (Spring)**

Education	CJC 122	Community Policing	3	0	3
	CJC 212	Ethics and Community Relations	3	0	3
	MAT 115	Mathematical Models (or MAT 161)	2	2	3
	SPA 120	Spanish for the Workplace or SPA 111 Major Elective*	3	0	3
			3	0	3
			<b>14</b>	<b>2</b>	<b>15</b>

**Program Totals****71 10 76\***

*\*Totals include a minimum of twelve credit hours of major electives to be selected from: CJC 120, CJC 151, CJC 211, CJC 214, CJC 215, CJC 216, CJC 217, CJC 223, CJC 225, CJC 232, CJC 240, CJC 245, CJC 251, CJC 252, CJC 293, 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**

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ACA 115	First-Year Seminar	0	2	1	
CIS 110	Basic PC Literacy	2	2	3	
CJC 111	Introduction to Criminal Justice	3	0	3	
CJC 121	Law Enforcement Operations	3	0	3	
CJC 231	Constitutional Law	3	0	3	
		<b>11</b>	<b>4</b>	<b>13</b>	
<b>Second Semester (Spring)</b>					
CJC 112	Criminology	3	0	3	
CJC 132	Court Procedure and Evidence	3	0	3	
ENG 111	Expository Writing Major Elective*	3	0	3	
		3	0	3	
		<b>12</b>	<b>0</b>	<b>12</b>	
<b>Third Semester (Summer)</b>					
CJC 131	Criminal Law	3	0	3	
ENG 114	Professional Research and Reporting	3	0	3	
		<b>6</b>	<b>0</b>	<b>6</b>	
<b>Fourth Semester (Fall)</b>					
CJC 113	Juvenile Justice	3	0	3	
CJC 114	Investigative Photography or CJC 120	1	2	2	
CJC 221	Investigative Principles	3	2	4	
		<b>7</b>	<b>4</b>	<b>9</b>	

**Fifth Semester (Spring)**

CJC	122	Community Policing	3	0	3
CJC	213	Substance Abuse	3	0	3
MAT	115	Mathematical Models (or MAT 161)	2	2	3
			<b>8</b>	<b>2</b>	<b>9</b>

Allied Health  
and Public  
Service  
Education

**Sixth Semester (Summer)**

CJC	222	Criminalistics	3	0	3
HUM	115	Critical Thinking	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>

**Seventh Semester (Fall)**

SOC	225	Social Diversity (Or PSY 281)	3	0	3
		Major Elective*	3	0	3
		Major Elective*	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>

**Eighth Semester (Spring)**

CJC	212	Ethics and Community Relations	3	0	3
PSY	150	General Psychology	3	0	3
SPA	120	Spanish for the Workplace or SPA 111	3	0	3
		Major Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>
			<b>71</b>	<b>10</b>	<b>76</b>

**Program Totals**

\* Totals include a minimum of twelve credit hours of major electives to be selected from: CJC 120, CJC 151, CJC 211, CJC 214, CJC 215, CJC 216, CJC 217, CJC 223, CJC 225, CJC 232, CJC 240, CJC 245, CJC 251, CJC 252, CJC 293, 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 II's, defined by the Dental Laws of North Carolina, graduates work in dental clinics/offices, and insurance companies.

**Specific Entrance Requirements**

1. General college admission requirements.
2. Acceptable report of medical examination by first day of class.
3. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
4. Certification in Community CPR within three months before entering program.

## Dental Assisting Diploma

Allied Health	<b>This program consists of:</b>	<b>Credit Hrs.</b>
	<b>Major courses (DEN prefix)</b>	<b>37</b>
and Public	<b>Related and general education courses</b>	<b>11</b>
Service	<b>including:</b>	
	<i>English/Communications</i>	3
	<i>Natural Science/Mathematics</i>	3
Education	<i>Social Science</i>	3
	<i>Other</i>	2
	<b>PROGRAM TOTAL</b>	<b>48</b>

				Weekly	Weekly	Weekly	Weekly
				Class	Lab	Clinic	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>							
BIO	106	Introduction to Anatomy/ Physiology/Microbiology		2	2	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
				<b>14</b>	<b>13</b>	<b>0</b>	<b>20</b>
<b>Second Semester (Spring)</b>							
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
				<b>8</b>	<b>6</b>	<b>12</b>	<b>15</b>
<b>Third Semester (Summer)</b>							
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
				<b>8</b>	<b>2</b>	<b>12</b>	<b>13</b>
<b>Program Totals</b>				<b>30</b>	<b>21</b>	<b>24</b>	<b>48</b>

## 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 Entrance Requirements

1. General college admission requirements.
2. 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.

3. Acceptable report of medical examination by the first day of class.
4. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
5. Certification in Community CPR within three months before entering program.
6. The North Carolina Board of Dental Examiners may deny license to individuals convicted of a felony or any other crime involving moral turpitude.

Allied Health  
and Public  
Service  
Education

## Dental Hygiene – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (DEN prefix)</b>	<b>49</b>
<b>Related and general education courses including:</b>	<b>25</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	11
<i>Social Sciences</i>	3
<i>Other</i>	2
<b>PROGRAM TOTAL</b>	<b>74</b>

				<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
				<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Hrs.</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
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 Laboratory		0	6	0	2
				<b>11</b>	<b>14</b>	<b>0</b>	<b>16</b>
<b>Second Semester (Spring)</b>							
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	222	General and Oral Pathology		2	0	0	2
ENG	111	Expository Writing		3	0	0	3
				<b>12</b>	<b>5</b>	<b>9</b>	<b>17</b>
<b>Third Semester (Summer)</b>							
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	223	Dental Pharmacology		2	0	0	2
				<b>6</b>	<b>4</b>	<b>6</b>	<b>10</b>

**Fourth Semester (Fall)**

Allied Health and Public Service Education	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
SOC 240	Social Psychology	3	0	0	3	
			<b>11</b>	<b>3</b>	<b>12</b>	<b>16</b>

**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	2	0	3	3
DEN 233	Professional Development	2	0	0	2
DEN 292	Selected Topics in Dental Hygiene	2	0	0	2
HUM 115	Critical Thinking	3	0	0	3
		<b>10</b>	<b>0</b>	<b>15</b>	<b>15</b>
<b>Program Totals</b>		<b>50</b>	<b>26</b>	<b>42</b>	<b>74</b>

**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 Entrance 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

Allied Health  
and Public  
Service  
Education

<b>This program consists of:</b>	<b>Credit Hrs</b>
<b>Major courses (COE, EDU prefix</b>	<b>54 (52)</b>
<b>Other major hours ART, SOC, CIS)</b>	
<b>Related and general education courses</b>	<b>21</b>
<b>including:</b>	
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	1
<b>PROGRAM TOTAL</b>	<b>75 (73)</b>

		<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>	
		<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	0	1
EDU	119	Early Childhood Education or EDU 111 & 112 or EDU 111 & 113	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
			<b>13</b>	<b>4</b>	<b>0</b>	<b>15</b>
<b>Second Semester (Spring)</b>						
COE	111EC	Work Experience I	0	0	10	1
COE	115EC	Work Experience I Seminar	1	0	0	1
EDU	145	Child Development II	3	0	0	3
EDU	234	Infants, Toddlers, Twos or Art 111 Art Appreciation	3 (3)	0 0	0 0	3 (3)
ENG	114	Research and Report Writing	3	0	0	3
CIS	110	Intro to Computers	2	2	0	3
			<b>12</b>	<b>2</b>	<b>10</b>	<b>14</b>
<b>Third Semester (Summer)</b>						
MAT	161	College Algebra	3	0	0	3
MAT	161A	College Algebra Lab or MAT 140 Survey of Mathematics and MAT 140A Survey of Mathematics Lab	0 (3) (0)	2 0 2	0 0 0	1 (3) (1)
EDU	251	Exploration Activities	3	0	0	3
EDU	271	Educational Technology	3	0	0	3
			<b>9</b>	<b>2</b>	<b>0</b>	<b>10</b>
<b>Fourth Semester (Fall)</b>						
COE	121EC	Work Experience II	0	0	10	1
COE	125EC	Work Experience II Seminar	1	0	0	1
EDU	146	Child Guidance	3	0	0	3
EDU	280	Literacy Experiences	3	0	0	3
EDU	131	Child, Family & Community	3	0	0	3
SOC	213	Sociology of the Family or EDU 261 Administration I	3 (2)	0 0	0 0	3 (2)
			<b>13 (12)</b>	<b>0 (0)</b>	<b>10 (10)</b>	<b>14 (13)</b>

**Fifth Semester (Spring)**

Allied Health and Public Service Education	COE 131	EC Work Experience III	0	0	10	1
	COE 135	EC Work Experience III Seminar	1	0	0	1
	EDU 221	Children with Exceptionalities	3	0	0	3
	EDU 153	Health, Safety & Nutrition	3	0	0	3
	EDU 153A	Health, Safety & Nutrition Lab	0	2	0	1
BIO 110	Principles of Biology or EDU 262 Administration II	3	3	0	4	
		(3	0	0	3)	
		<b>10 (10)</b>	<b>5 (2)</b>	<b>10 (10)</b>	<b>13(12)</b>	

**Sixth Semester (Summer)**

EDU 259	Curriculum Planning	3	0	0	3
PSY 150	General Psychology Humanities Elective	3	0	0	3
		3	0	0	3
		<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

**Program Totals**

**66(65) 13(10) 30 75(73)**

*Total credit hours required for certificate: 17.*

*Required courses for certificate program: EDU 119(or EDU 111 & EDU 112 or EDU 111 & EDU 113), EDU 144, ENG 111, EDU 146, EDU 151 and EDU 151A. This certificate is also offered in the evening schedule.*

**Early Childhood Certificate**

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 Entrance Requirements**

1. General college admission requirements.
2. Three character/employee references by the first day of class.
3. 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."
4. Criminal background checks are required prior to credentialing.

**Early Childhood Certificate Program**

**This program consists of:**

**Major courses (EDU)**

**And Gen ED (ENG)**

**Credit Hrs.**

**17**

**First Semester (Fall)**

			<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	
			<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
EDU 119	Early Childhood Education or EDU 111 & 112 or EDU 111 & 113	4	0	0	4	
EDU 144	Child Development I	3	0	0	3	
ENG 111	Expository Writing	3	0	0	3	
		<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>	

**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
<b>Program Totals</b>		<b>16</b>	<b>2</b>	<b>0</b>	<b>17</b>

Allied Health  
and Public  
Service  
Education

**Early Childhood/Teacher Associate**

Teacher Associate is a concentration under the curriculum title of Early Childhood Associate. This curriculum prepares individuals to work with children from infancy through middle childhood. Students will combine the theories learned in class with practice in elementary school settings under the supervision of certified teachers. Courses include childhood growth and development, physical/nutritional needs of children, guidance of children, professional responsibilities and ethics, and curriculum principles and practices.

Graduates are prepared to work in any elementary school setting, whether public or private. Employment opportunities include teacher assistants in elementary schools, lead teachers in child development programs, Head Start Programs and school age programs.

**Specific Entrance 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.

**Early Childhood/Teacher Associate Associate in Applied Science Degree**

<b>This program consists of:</b>	<b>Credit</b>
<b>Hours</b>	
<b>Major Courses (COE, EDU prefix)</b>	<b>51</b>
<b>Related and General Education courses including:</b>	<b>24</b>
<i>English/Oral Communications</i>	9
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	5
<i>Social Sciences</i>	3
<i>Other</i>	4
<b>PROGRAM TOTAL</b>	<b>75</b>

<b>Weekly Class Hrs.</b>	<b>Weekly Lab Hrs.</b>	<b>Weekly Clinic Hrs.</b>	<b>Weekly Credit Hrs.</b>
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**First Semester (Fall)**

ACA 115	First Year Seminar	0	2	0	1
CIS 110	Introduction to Computers	2	2	0	3
EDU 119	Early Childhood Education	4	0	0	4
EDU 131	Child, Family & Community	3	0	0	3
EDU 144	Child Development I	3	0	0	3
EDU 186	Reading and Writing Methods	3	0	0	3
ENG 111	Expository Writing	3	0	0	3
		<b>18</b>	<b>4</b>	<b>0</b>	<b>20</b>

**Second Semester (Spring)**

Allied Health and Public Service Education	COE 111E	Work Experience I	0	0	10	1
	COE 115	Work Experience I Seminar	1	0	0	1
	EDU 118	Teacher Associate Principles	3	0	0	3
	EDU 145	Child Development II	3	0	0	3
	EDU 151	Creative Activities	3	0	0	3
	EDU 151A	Creative Activities Lab	0	2	0	1
	PSY 150	General Psychology	3	0	0	3
			<b>13</b>	<b>2</b>	<b>10</b>	<b>15</b>

**Third Semester (Summer)**

BIO 143	Field Biology Minicourse	1	2	0	2
EDU 251	Exploration Activities	3	0	0	3
EDU 251A	Exploration Activities Lab	0	2	0	1
	Humanities Elective	3	0	0	3
		<b>7</b>	<b>4</b>	<b>0</b>	<b>9</b>

**Fourth Semester (Fall)**

BIO 226	Local Fall Flora	2	2	0	3
EDU 146	Child Guidance	3	0	0	3
EDU 153	Health, Safety & Nutrition	3	0	0	3
EDU 153A	Health, Safety & Nutrition Lab	0	2	0	1
EDU 275	Effective Teacher Training	2	0	0	2
EDU 280	Literacy Experiences	3	0	0	3
		<b>13</b>	<b>4</b>	<b>0</b>	<b>15</b>

**Fifth Semester (Spring)**

COE 121E	Coop Seminar	0	0	10	1
COM 231	Oral Communications	3	0	0	3
EDU 221	Special Needs	3	0	0	3
EDU 235	School Age Programming	2	0	0	2
EDU 285	Internship Experience-School Age	1	0	0	1
ENG 114	Research & Report Writing	3	0	0	3
PSY 237	Social Psychology	3	0	0	3
		<b>15</b>	<b>0</b>	<b>10</b>	<b>16</b>
<b>Program Totals</b>		<b>66</b>	<b>14</b>	<b>20</b>	<b>75</b>

**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 Entrance Requirements**

1. General college admission requirements.
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.

Allied Health  
and Public  
Service  
Education

## Emergency Medical Science – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (EMS prefix)</b>	<b>53</b>
<b>Related and general education courses including:</b>	<b>23</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	3
<b>PROGRAM TOTAL</b>	<b>76</b>

				Weekly	Weekly	Weekly	Weekly
				Class	Lab	Clinic	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
BIO	168	Anatomy and Physiology I		3	3	0	4
CIS	111	Basic PC Literacy (or CIS 110)		1	2	0	2
EMS	110	EMT-Basic		5	6	0	7
EMS	111	Prehospital Environment		2	2	0	3
EMS	150	Emergency Vehicles and EMS Communication		1	3	0	2
				<b>12</b>	<b>18</b>	<b>0</b>	<b>19</b>
<b>Second Semester (Spring)</b>							
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
				<b>10</b>	<b>11</b>	<b>6</b>	<b>16</b>
<b>Third Semester (Summer)</b>							
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
				<b>3</b>	<b>9</b>	<b>9</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>							
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 and Reporting		3	0	0	3
SOC	225	Social Diversity		3	0	0	3
				<b>10</b>	<b>12</b>	<b>9</b>	<b>17</b>

		<b>Fifth Semester (Spring)</b>				
Allied Health and Public Service Education	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
<b>Program Totals</b>			<b>43</b>	<b>60</b>	<b>33</b>	<b>76</b>

## 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 Entrance 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 – Day and Evening Schedule

Allied Health  
and Public  
Service  
Education

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (EMS prefix)</b>	<b>53</b>
<b>Related and general education courses including:</b>	<b>22</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	8
<i>Social Sciences</i>	3
<i>Other</i>	2
<b>PROGRAM TOTAL</b>	<b>75</b>

				<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
				<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Hrs.</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
BIO	168	Human Anatomy and Physiology I		3	3	0	4
CIS	111	Basic PC Literacy (or CIS 110)		1	2	0	2
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
				<b>9</b>	<b>14</b>	<b>0</b>	<b>14</b>
<b>Second Semester (Spring)</b>							
BIO	169	Human 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
				<b>7</b>	<b>11</b>	<b>0</b>	<b>11</b>
<b>Third Semester (Summer)</b>							
ENG	114	Professional Research and Reporting		3	0	0	3
PHI	240	Introduction to Ethics		3	0	0	3
SOC	225	Social Diversity		3	0	0	3
				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Program Totals</b>				<b>25</b>	<b>25</b>	<b>0</b>	<b>34*</b>

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

## Fire Protection Technology

Allied Health  
and Public  
Service  
Education

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

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (FIP prefix)</b>	<b>51</b>
<b>Minimum of 15 semester hours in Related and general education courses including:</b>	<b>22</b>
<i>English/Oral Communications</i>	9
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Computer Literacy</i>	3
<i>Social Sciences</i>	3
<i>Other</i>	1
<b>PROGRAM TOTAL</b>	<b>73</b>

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
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
			<b>8</b>	<b>4</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
ENG	114	Professional Research and Reporting	3	0	3
FIP	124	Fire Prevention and Public Education	3	0	3
FIP	128	Detection and Investigation	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
FIP	140	Industrial Fire Protection	3	0	3
FIP	228	Local Government Finance	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
FIP	132	Building Construction	3	0	3
FIP	230	Chemistry of Hazardous Materials I	5	0	5
MAT	115	Mathematical Models	2	2	3
			<b>10</b>	<b>2</b>	<b>11</b>

**Fifth Semester (Spring)**

COM	231	Public Speaking	3	0	3
FIP	136	Inspections and Codes	3	0	3
FIP	152	Fire Protection Law	3	0	3
FIP	220	Fire Fighting Strategies	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>

Allied Health  
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Service  
Education

**Sixth Semester (Summer)**

FIP	232	Hydraulics and Water Distribution	2	2	3
FIP	236	Emergency Management	3	0	3
			<b>5</b>	<b>2</b>	<b>6</b>

**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
			<b>10</b>	<b>0</b>	<b>10</b>

**Eighth Semester (Spring)**

FIP	260	Fire Protection Planning	3	0	3
FIP	276	Managing Fire Services	3	0	3
		Humanities Elective	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>

**Program Totals**

**69 8 73**

## Fire Protection Technology Certificate – Day and Evening Schedule

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.

**This program consists of:****Major courses (FIP prefix)****Credit Hrs.****15****Related general education courses****3****PROGRAM TOTAL****18**

**Weekly**  
**Weekly**  
**Class Lab Credit**  
**Hrs. Hrs. Hrs.**

**First Semester (Fall)**

ENG	111	Expository Writing	3	0	3
FIP	132	Building Construction	3	0	3
FIP	276	Managing Fire Services	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>

**Second Semester (Spring)**

FIP	152	Fire Protection Law	3	0	3
FIP	220	Fire Fighting Strategies	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>

**Third Semester (Summer)**

FIP	240	Fire Service Supervision	3	0	3
			<b>3</b>	<b>0</b>	<b>3</b>

**Certificate Totals**

**18 0 18**

## Medical Laboratory Technology

Allied Health  
and Public  
Service  
Education

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.

### Specific Entrance Requirements

1. General college admission requirements.
2. High School units:
  - a. Algebra required.
  - b. Biology, chemistry, and geometry strongly recommended.
3. Three character references.
4. Acceptable reports of medical examinations by first day of Practicum MLT 252.
5. Completion of required immunizations including one dose of Hepatitis B vaccine.
6. Criminal background checks may be required prior to admission to clinical sites.

## Medical Laboratory Technology – Associate in Applied Science Degree

This program consists of:

Major courses (BIO, CHM, MLT prefix)

Related and general education courses

including:

<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Social Sciences</i>	3
<i>Other</i>	3

**PROGRAM TOTAL**

**Credit Hrs.**

**56**

**18**

**74**

<b>WeeklyWeeklyWeekly</b>					
<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>		
<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>		
BIO 163	Basic Anatomy and Physiology	4	2	0	5
CHM 130	General, Organic and Biochemistry	3	0	0	3
CHM 130A	General, Organic and Biochemistry Lab	0	2	0	1
MAT 115	Mathematics Models or MAT 140	2	2	0	3
MLT 110	Introduction to MLT	2	3	0	3
MLT 140	Introduction to Microbiology	2	3	0	3
		<b>13</b>	<b>12</b>	<b>0</b>	<b>18</b>

### First Semester (Fall)

BIO 163	Basic Anatomy and Physiology	4	2	0	5
CHM 130	General, Organic and Biochemistry	3	0	0	3
CHM 130A	General, Organic and Biochemistry Lab	0	2	0	1
MAT 115	Mathematics Models or MAT 140	2	2	0	3
MLT 110	Introduction to MLT	2	3	0	3
MLT 140	Introduction to Microbiology	2	3	0	3
		<b>13</b>	<b>12</b>	<b>0</b>	<b>18</b>

**Second Semester (Spring)**

MLT	120	Hematology/Hemostasis	3	3	0	4
MLT	126	Immunology and Serology	1	2	0	2
MLT	130	Clinical Chemistry	3	3	0	4
MLT	240	Special Clinical Microbiology	2	3	0	3
ENG	111	Expository Writing	3	0	0	3
			<b>12</b>	<b>11</b>	<b>0</b>	<b>16</b>

Allied Health  
and Public  
Service  
Education

**Third Semester (Summer)**

MLT	111	Urinalysis and Body Fluids	1	3	0	2
MLT	127	Transfusion Medicine	2	3	0	3
MLT	252	MLT Practicum I	0	0	6	2
			<b>3</b>	<b>6</b>	<b>6</b>	<b>7</b>

**Fourth Semester (Fall)**

CIS	110	Introduction to Computers	2	2	0	3
SOC	215	Group Processes or PSY 150	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
			<b>5</b>	<b>2</b>	<b>30</b>	<b>16</b>

**Fifth Semester (Spring)**

ENG	114	Professional Research and 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
			<b>7</b>	<b>0</b>	<b>30</b>	<b>17</b>
<b>Program Totals</b>			<b>40</b>	<b>31</b>	<b>66</b>	<b>74</b>

## 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 and find employment in clinics, physicians' offices, mobile services, hospitals, and educational institutions.

**Specific Entrance Requirements**

1. General college admission requirements.
2. High school biology and one unit of high school algebra.
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 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. Completion of an observation in an approved sonography area. Details are available from the medical sonography faculty.
8. Completion of all requirements for sonography published in the current admissions criteria, which is available in the Admissions Office or online at [www.abtech.edu](http://www.abtech.edu).
9. Criminal background checks may be required prior to admission to clinical sites.

## Medical Sonography – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (SON prefix)</b>	<b>54</b>
<b>Related and general education courses including:</b>	<b>22</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social Science</i>	3
<i>Other</i>	7
<b>PROGRAM TOTAL</b>	<b>76</b>

				<b>Weekly</b>			
				<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
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
				<b>13</b>	<b>10</b>	<b>3</b>	<b>18</b>
<b>Second Semester (Spring)</b>							
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
				<b>8</b>	<b>8</b>	<b>15</b>	<b>16</b>
<b>Third Semester (Summer)</b>							
SON	121	SON Clinical Ed II		0	0	15	5
SON	241	Obstetrical Sonography I		2	0	0	2
				<b>2</b>	<b>0</b>	<b>15</b>	<b>7</b>
<b>Fourth Semester (Fall)</b>							
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	225	Case Studies		0	3	0	1
SON	242	Obstetrical Sonography II		2	0	0	2
				<b>7</b>	<b>5</b>	<b>24</b>	<b>17</b>

**Fifth Semester (Spring)**

SON 221	SON Clinical Ed IV	0	0	24	8
SON 250	Vascular Sonography	1	3	0	2
SON 289	Sonographic Topics	2	0	0	2
	Humanities Elective	3	0	0	3
	Social Science Elective	3	0	0	3
<b>Program Totals</b>		<b>9</b>	<b>3</b>	<b>24</b>	<b>18</b>
		<b>39</b>	<b>26</b>	<b>81</b>	<b>76</b>

Allied Health  
and Public  
Service  
Education

**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.

**Specific Entrance Requirements**

- General college admission requirements.
  - Application
  - High school transcript
  - Acceptable reading score on placement test
- Acceptable reports of medical examinations by first day of class.
- Completion of required immunizations including one dose of Hepatitis B vaccine.
- Criminal background checks may be required prior to admission to clinical sites.

**Phlebotomy Certificate**

			Weekly	Weekly	Weekly	Weekly
			Class	Lab	Clinic	Credit
			Hrs.	Hrs.	Hrs.	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		3	0	0	3
<b>Program Totals</b>			<b>8</b>	<b>2</b>	<b>9</b>	<b>12</b>

**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.

**Admission Requirements**

- 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.

2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
4. The North Carolina Board of Nursing requires criminal background checks on all applicants.
5. Criminal background checks may be required prior to admission to clinical sites.

\*\* If your goal is to eventually enroll in the Associate Degree nursing Program, consider the following course substitutions.

<b>Required Course for Practical Nursing</b>	<b>Course Substitution</b>
BIO 163	BIO 168 and BIO 169
ENG 102	ENG 111 and ENG 114 or ENG 111 and COM 231
PSY 110	PSY 241

## Practical Nursing – Diploma

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (BIO, NUR prefix)</b>	<b>41</b>
<b>Related and general education courses including:</b>	<b>6</b>
<i>English/Communications</i>	3
<i>Other</i>	3
<b>PROGRAM TOTAL</b>	<b>47</b>

				<b>Weekly</b>			
				<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
BIO	163	Basic Anatomy and Physiology	4	2	0	5	
NUR	101	Practical Nursing I	7	6	6	11	
PSY	110	Life Span Development	3	0	0	3	
			<b>14</b>	<b>8</b>	<b>6</b>	<b>19</b>	
<b>Second Semester (Spring)</b>							
CIS	110	Introduction to Computers	2	2	0	3	
ENG	102	Applied Communications II	3	0	0	3	
NUR	102	Practical Nursing II	8	0	12	12	
			<b>13</b>	<b>2</b>	<b>12</b>	<b>18</b>	
<b>Third Semester (Summer)</b>							
NUR	103	Practical Nursing III	6	0	12	10	
			<b>6</b>	<b>0</b>	<b>12</b>	<b>10</b>	
<b>Program Totals</b>			<b>33</b>	<b>10</b>	<b>30</b>	<b>47</b>	

## 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 Entrance Requirements

1. General college admission requirements.
2. High school biology and one unit of high school algebra.
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. Completion of a 12-hour observation in the radiology department at one of the clinical affiliates. Details are available in the Admissions Office.
8. Completion of all requirements for radiography published in the current admissions criteria for Radiography which is available in the admissions office or online at [www.abtech.edu](http://www.abtech.edu).
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](http://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, and Marion. All radiography students will 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

Allied Health	<b>This program consists of:</b>			<b>Credit Hrs.</b>
	<b>Major courses (RAD prefix)</b>			<b>53</b>
and Public	<b>Related and general education courses</b>			<b>23</b>
	<b>including:</b>			
Service	<i>English/Communications</i>	6		
	<i>Humanities/Fine Arts</i>	3		
Education	<i>Natural Science/Mathematics</i>	5		
	<i>Social Sciences</i>	3		
	<i>Other</i>	6		
	<b>PROGRAM TOTAL</b>			<b>76</b>

			<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
			<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Hrs.</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
ENG	111	Expository Writing	3	0	0	3
RAD	110	Radiography Introduction and 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
			<b>12</b>	<b>8</b>	<b>12</b>	<b>19</b>
<b>Second Semester (Spring)</b>						
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
			<b>10</b>	<b>8</b>	<b>15</b>	<b>18</b>
<b>Third Semester (Summer)</b>						
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
			<b>2</b>	<b>6</b>	<b>12</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>						
RAD	211	RAD Procedures III	2	3	0	3
RAD	231	Radiographic Physics II	1	3	0	2
RAD	241	Radiation Protection	2	0	0	2
RAD	251	RAD Clinical Education IV Social Science Elective	0	0	21	7
			3	0	0	3
			<b>8</b>	<b>6</b>	<b>21</b>	<b>17</b>
<b>Fifth Semester (Spring)</b>						
PHI	240	Introduction to Ethics	3	0	0	3
RAD	245	Radiographic Analysis	2	3	0	3
RAD	261	RAD Clinical Education V	0	0	21	7
RAD	291	Selected Topics in Radiography	0	3	0	1
			<b>5</b>	<b>6</b>	<b>21</b>	<b>14</b>
<b>Program Totals</b>			<b>37</b>	<b>34</b>	<b>81</b>	<b>76</b>



		<b>Third Semester (Summer)</b>				
Allied Health and Public Service	ENG 114	Professional Research and Reporting	3	0	0	3
	HSE 225	Crisis Intervention	3	0	0	3
	HUM 115	Critical Thinking	3	0	0	3
	PSY 281	Abnormal Psychology	3	0	0	3
	SWK 115	Community Resources	2	2	0	3
		<b>14</b>	<b>2</b>	<b>0</b>	<b>15</b>	
		<b>Fourth Semester (Fall)</b>				
Education	COE 111SS	Co-op Work Experience I	0	0	10	1
	COE 115SS	Work Experience Seminar I	1	0	0	1
	HSE 125	Counseling	2	2	0	3
	SOC 213	Sociology of the Family	3	0	0	3
	SWK 113	Working with Diversity	3	0	0	3
	SWK 214	Social Work Law	3	0	0	3
		<b>12</b>	<b>2</b>	<b>10</b>	<b>14</b>	
		<b>Fifth Semester (Spring)</b>				
	COE 121SS	Co-op Work Experience II	0	0	10	1
	COE 125SS	Work Experience Seminar II	1	0	0	1
	DDT 110	Developmental Disabilities	3	0	0	3
	HSE 210	Human Services Issues	2	0	0	2
	SAB 110	Substance Abuse Overview	3	0	0	3
	SWK 220	Social Work in Client Services	3	0	0	3
		<b>12</b>	<b>0</b>	<b>10</b>	<b>13</b>	
<b>Program Totals</b>		<b>61</b>	<b>18</b>	<b>20</b>	<b>72</b>	

## Human Services Technology/Social Services – Associate in Applied Science Degree – Evening Schedule

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Clinic</b>	<b>Credit</b>
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ACA 115	First-Year Seminar	0	2	0	1
CIS 110	Introduction to Computers	2	2	0	3
HSE 110	Introduction to Human Services	2	2	0	3
HSE 112	Group Process I	1	2	0	2
PSY 150	General Psychology	3	0	0	3
		<b>8</b>	<b>8</b>	<b>0</b>	<b>12</b>
<b>Second Semester (Spring)</b>					
ENG 111	Expository Writing	3	0	0	3
HUM 115	Critical Thinking	3	0	0	3
SOC 210	Introduction to Sociology	3	0	0	3
SWK 110	Introduction to Social Work	3	0	0	3
		<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Third Semester (Summer)</b>					
PSY 281	Abnormal Psychology	3	0	0	3
SWK 115	Community Resources	2	2	0	3
		<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
HSE 123	Interviewing Techniques	2	2	0	3
SOC 213	Sociology of the Family	3	0	0	3
SWK 113	Working with Diversity	3	0	0	3
		<b>8</b>	<b>2</b>	<b>0</b>	<b>9</b>

**Fifth Semester (Spring)**

HSE	225	Crisis Intervention	3	0	0	3
MAT	115	Mathematical Models	2	2	0	3
SWK	220	Social Work in Client Services	3	0	0	3
			<b>8</b>	<b>2</b>	<b>0</b>	<b>9</b>

Allied Health  
and Public  
Service  
Education

**Sixth Semester (Summer)**

ENG	114	Professional Research and Reporting	3	0	0	3
HSE	125	Counseling	2	2	0	3
			<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>

**Seventh Semester (Fall)**

DDT	110	Developmental Disability	3	0	0	3
HSE	220	Case Management	2	2	0	3
SAB	110	Substance Abuse Overview	3	0	0	3
			<b>8</b>	<b>2</b>	<b>0</b>	<b>9</b>

**Eighth Semester (Spring)**

*COE	111SS	Co-op Work Experience I	0	0	10	1
*COE	115SS	Work Experience Seminar I	1	0	0	1
HSE	210	Human Services Issues	2	0	0	2
			<b>3</b>	<b>0</b>	<b>10</b>	<b>4</b>

**Ninth Semester (Summer)**

*COE	121SS	Co-op Work Experience II	0	0	10	1
*COE	125SS	Work Experience Seminar II	1	0	0	1
SWK	214	Social Work Law	3	0	0	3
			<b>4</b>	<b>0</b>	<b>10</b>	<b>5</b>

**Program Totals** **61** **18** **20** **72**

*\*COE courses must be taken during the day schedule.*

## 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 this program will be eligible to apply to take the Liaison Council's Certification Examination for Surgical Technologists. Employment opportunities include labor/delivery/emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

### Specific Entrance Requirements

1. 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.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
4. Clinical agencies and/or credentialing bodies may require criminal background checks prior to admission to clinical sites or issuance of credentials.

## Surgical Technology Diploma

Allied Health	<b>This program consists of:</b>			<b>Credit Hrs.</b>
	<b>Major courses (BIO, SUR)</b>			<b>40</b>
and Public	<b>Related and general education courses</b>			<b>7</b>
Service	<b>including:</b>			
	<i>English/Communications</i>	3		
	<i>Humanities/Fine Arts</i>	0		
Education	<i>Natural Science/Mathematics</i>	3		
	<i>Social Sciences</i>	0		
	<i>Other</i>	1		
	<b>PROGRAM TOTAL</b>			<b>47</b>
			<b>Weekly</b>	<b>Weekly</b>
			<b>Class</b>	<b>Lab</b>
			<b>Hrs.</b>	<b>Hrs.</b>
			<b>Hrs.</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>
	<b>First Semester (Fall)</b>			
ACA	115	First Year Seminar	0	2
BIO	163	Basic Anatomy and Physiology	4	2
ENG	111	Expository Writing	3	0
SUR	110	Introduction to Surgical Technology	3	0
SUR	111	Perioperative Patient Care	5	6
			<b>15</b>	<b>10</b>
			<b>0</b>	<b>0</b>
			<b>19</b>	<b>19</b>
	<b>Second Semester (Spring)</b>			
BIO	175	General Microbiology	2	2
SUR	122	Surgical Procedures I	5	3
SUR	123	Surgical Clinical I	0	0
			<b>7</b>	<b>5</b>
			<b>21</b>	<b>21</b>
			<b>16</b>	<b>16</b>
	<b>Third Semester (Summer)</b>			
CIS	110	Introduction to Computers	2	2
SUR	134	Surgical Procedures II	5	0
SUR	135	Surgical Clinical II	0	0
SUR	137	Professional Success Preparation	1	0
			<b>8</b>	<b>2</b>
			<b>12</b>	<b>12</b>
			<b>13</b>	<b>13</b>
	<b>Program Totals</b>		<b>30</b>	<b>17</b>
			<b>33</b>	<b>48</b>

## Veterinary Medical Technology

The Veterinary Medical Technology curriculum prepares 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.

Coursework includes instruction in veterinary anatomy, nutrition, parasitology, pathology, physiology, radiology, terminology, zoology, office practices, laboratory techniques, dentistry, and small and large animal clinical practices. Students also take courses in English, humanities, psychology, mathematics, chemistry, and computer technology.

### Specific Entrance Requirements

1. General college admission requirements.
2. 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.
3. Satisfactory completion of required immunizations.

4. North Carolina Board for Veterinary Medicine may require criminal background checks on all applicants for initial credentialing.

Allied Health  
and Public  
Service  
Education

## Veterinary Medical Technology – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (VET, CHM)</b>	<b>55</b>
<b>Related and general education courses including:</b>	<b>19</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Social Sciences</i>	3
<i>Other</i>	4
<b>PROGRAM TOTAL</b>	<b>74</b>

				Weekly Class Hrs.	Weekly Lab Hrs.	Weekly Clinic Hrs.	Weekly Credit Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First Year Seminar		0	2	0	1
MAT	121	Algebra/Trigonometry I or MAT 140		2	2	0	3
VET	121	Vet Medical Terminology		3	0	0	3
VET	110	Animal Breeds and Husbandry		2	2	0	3
VET	114	Intro to Veterinary Anatomy and Physiology		1	0	0	1
VET	120	Veterinary Anatomy and Physiology		3	3	0	4
				<b>11</b>	<b>9</b>	<b>0</b>	<b>15</b>
<b>Second Semester (Spring)</b>							
CHM	130	General Organic and Biochemistry		3	0	0	3
CHM	130A	General Organic and Biochemistry Lab		0	2	0	1
CIS	110	Introduction to Computers		2	2	0	3
ENG	111	Expository Writing		3	0	0	3
VET	123	Veterinary Parasitology		2	3	0	3
VET	125	Veterinary Disease I		2	0	0	2
				<b>12</b>	<b>7</b>	<b>0</b>	<b>15</b>
<b>Third Semester (Summer)</b>							
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
				<b>5</b>	<b>8</b>	<b>0</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>							
ENG	114	Professional Research and 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
				<b>13</b>	<b>15</b>	<b>0</b>	<b>18</b>

**Fifth Semester (Spring)**

Allied Health	VET 212	Veterinary Laboratory Techniques III	2	3	0	3
	VET 214	Veterinary Clinical Practices III	1	9	0	4
and Public	VET 217	Large Animal Clinical Practices	2	3	0	3
	VET 237	Animal Nutrition	3	0	0	3
Service		Social Science Elective	3	0	0	3
			<b>11</b>	<b>17</b>	<b>0</b>	<b>16</b>

**Sixth Semester (Summer)**

Education	COE 112	Co-op Work Experience	0	0	20	2
			<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
		<b>Program Totals</b>	<b>52</b>	<b>54</b>	<b>20</b>	<b>74</b>

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# Business and Hospitality Education

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The Business and Hospitality Education Division provides technical postsecondary education for students of business programs, computer technologies, and hospitality education. Programs of study emphasize critical skill development for successful entry into the job market.

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	<b>Accounting*</b>	<b>Baking and Pastry Arts</b>	<b>Business Administration*</b>
Business and Hospitality Education	<b>Recommended High School Courses</b>		
	Keyboarding Accounting English Business electives Algebra	Keyboarding Computer Applications Algebra English Nutrition Food Science Food Service Commercial Foods Sanitation Art	Keyboarding Accounting plus any other Business electives
	<b>A-B Tech Entrance Requirements</b>		
	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Day/Night begins Fall Can take single courses any semester.	Day begins Fall. Can take single courses any semester.	Day/Night begin Fall. Can take single courses any semester.
	<b>Degree</b>		
	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
	<b>Employment Opportunities</b>		
	Accountant Estimator Bookkeeper I	Pastry/Bakery Assistant Assistant Pastry Chef Cake Decorator Baker	Purchasing Agent Sales Manager General Supervisor Operations Officer Loan Officer Office Manager

\* Tech Prep agreements with regional high schools.

Computer Programming	Culinary Technology	Digital Media Technology
<b>Recommended High School Courses</b>		
Keyboarding Computer Applications English	Computer Applications Keyboarding Algebra English Nutrition Food Service Food Science Commercial Foods Sanitation	Keyboarding Computer Applications Algebra English
<b>A-B Tech Entrance Requirements</b>		
Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
<b>Program Schedule</b>		
Day/Night begins Fall. Night begins in even years only. Can take single courses any semester.	Day begins Fall Can take single courses any semester.	Day/Night begins Fall. Night begins in even numbered years. Can take single courses any semester.
<b>Degree</b>		
Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
<b>Employment Opportunities</b>		
Computer Operator Programmer Software Developer	Saute Chef Grill Chef Gardemanger Chef Soup/Sauce Chef Kitchen Manager Catering Banquet Manager Dining Room Manager Food/Beverage Manager Purchasing Agent Steward Food, Beverage and Equipment Purveyor	Graphic Artist/ Designer Multimedia Specialist Web Content Specialist Digital Media Specialist Interface Designer and many new jobs yet to be defined in this expanding field.

Business and  
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 Education

\* Tech Prep agreements with regional high schools.

	<b>Hotel and Restaurant Management*</b>	<b>Human Resources Management</b>	<b>Information Systems</b>
Business and Hospitality Education	<b>Recommended High School Courses</b>		
	Computer Applications Keyboarding Algebra Oral Communication English Food Service Accounting Marketing Sanitation	Keyboarding Accounting English Business Electives	Keyboarding Computer Applications Algebra English
	<b>A-B Tech Entrance Requirements</b>		
	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Day begins Fall Can take single courses any semester.	Night begins Fall. Can take single courses any semester.	Day/Night begins Fall. Night begins in even years only. Can take single courses any semester.
	<b>Degree</b>		
	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
	<b>Employment Opportunities</b>		
	Catering Manager Management Trainee Restaurant Manager Director of Food Services Reservations Manager Front Office Manager Country Club Manager Food/Beverage Manager	HR Technician HR Specialist HR Manager Payroll Officer Benefits Administrator Team Leadership Training and Development Facilitator General Supervisor	PC Support Network Support Computer Trainer

\* Tech Prep agreements with regional high schools.

Marketing and Retailing*	Medical Office Administration	Medical Transcription
<b>Recommended High School Courses</b>		
Keyboarding Accounting Plus any other business electives	Advanced Key-boarding Computer Applications Courses in Health Occupations	Advanced Key-boarding Computer Applications Courses in Health Occupations Anatomy/Physiology
<b>A-B Tech Entrance Requirements</b>		
Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
<b>Program Schedule</b>		
Day/Night begin Fall. Can take single courses any semester.	Day/Night begins Fall. Night begins in even years only. Can take single courses any semester.	Day/Night begins Fall. Night begins in even years only. Can take single courses any semester.
<b>Degree</b>		
Associate in Applied Science	Diploma	Diploma
<b>Employment Opportunities</b>		
Assistant Manager Department Manager Sales Representative Salesperson Retail Buyer	Medical Office Administration in: Medical and Dental Offices Hospitals Insurance Companies	Medical Transcription in: Medical Office, Critical Care Facility, or for Transportation Service Provider

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\* Tech Prep agreements with regional high schools.

	<b>Networking Technology</b>	<b>Office Systems Technology*</b>
Business and Hospitality Education	<b>Recommended High School Courses</b>	
	Keyboarding Computer Applications Algebra English	Keyboarding Computer Applications Accounting plus any other Business electives
	<b>A-B Tech Entrance Requirements</b>	
	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>	
	Day/Night begins Fall. Night begins in even years only. Can take single courses any semester.	Day begins Fall. Can take single courses any semester.
	<b>Degree</b>	
	Associate in Applied Science	Associate in Applied Science or Diploma
	<b>Employment Opportunities</b>	
	Network: Managers Operators Analysis Technicians	Administrative Assistant Office Manager Word Processor Information Processing Specialist Administrative Support

\* Tech Prep agreements with regional high schools.

# Business and Hospitality Education

The Business and Hospitality Education Division provides technical postsecondary education in the academic departments of Hospitality Education, Business Administration and Computer Technologies. 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.

## 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 Programming
- Culinary Technology
- Digital Media Technology
- Hotel and Restaurant Management
- Human Resources Management
- Information Systems
- Marketing and Retailing
- Networking Technology
- Office Systems Technology

All degree programs in the Division of Business and Hospitality Education are five semesters in duration and will require from 20 to 30 hours per week of course work. If a student elects to enroll in the Business and Hospitality Division through the evening program, the time required for completion will be extended.

**Diplomas Awarded**

Medical Office Administration  
 Medical Transcription  
 Office Systems Technology

Business and

**Certificates Awarded**

Accounting  
 Bed and Breakfast/Inn Management  
 Cake Designs  
 Cisco Academy  
 Database Management  
 Hospitality Management  
 Medical Coding  
 Medical Terminology  
 Microcomputer Applications  
 Networking  
 Networking Security  
 Open Source Operating Systems  
 PC Installation and Maintenance  
 Real Estate  
 Real Estate Appraisal  
 Restaurant Desserts  
 Word Processing and Desktop Publishing

Hospitality

Education

**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" and technology resources, accountants assemble, analyze, process, and communicate 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**

<b>This program consists of</b>	<b>Credit Hrs.</b>
<b>Major courses (ACC, BUS, ECO, MKT prefix)</b>	<b>52</b>
<b>Related and general education courses</b>	<b>22</b>
<b>including:</b>	
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Science</i>	3
<i>Other</i>	7
<b>PROGRAM TOTAL</b>	<b>74</b>

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
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	2	2	3
			<b>10</b>	<b>8</b>	<b>14</b>
<b>Second Semester (Spring)</b>					
ACC	121	Principles of Managerial Accounting	3	2	4
BUS	137	Principles of Management	3	0	3
CIS	120	Spreadsheet I	2	2	3
MKT	120	Principles of Marketing	3	0	3
		Humanities Elective	3	0	3
			<b>14</b>	<b>4</b>	<b>16</b>
<b>Third Semester (Summer)</b>					
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
			<b>13</b>	<b>2</b>	<b>14</b>
<b>Fourth Semester (Fall)</b>					
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
			<b>11</b>	<b>8</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>					
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
			<b>14</b>	<b>2</b>	<b>15</b>
<b>Program Totals</b>			<b>62</b>	<b>24</b>	<b>74</b>

\*Related Electives: ACC 131, BUS 151, BUS 240, BUS 260.

## Accounting – Associate in Applied Science Degree – Evening Schedule

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
ACC	120	Principles of Financial Accounting	3	2	4
ENG	111	Expository Writing	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>

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		<b>Second Semester (Spring)</b>				
	ACC	121	Principles of Managerial Accounting	3	2	4
	CIS	110	Introduction to Computers	2	2	3
Business and	MAT	115	Mathematical Models	2	2	3
				<b>7</b>	<b>6</b>	<b>10</b>
Hospitality			<b>Third Semester (Summer)</b>			
Education	ACC	240	Government and Not-for-Profit Accounting	3	0	3
	BUS	137	Principles of Management Humanities Elective	3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
			<b>Fourth Semester (Fall)</b>			
	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
				<b>11</b>	<b>2</b>	<b>12</b>
			<b>Fifth Semester (Spring)</b>			
	ACC	130	Business Income Taxes	2	2	3
	CIS	120	Spreadsheet I	2	2	3
	ECO	252	Principles of Macroeconomics Related Elective*	3	0	3
				<b>10</b>	<b>4</b>	<b>12</b>
			<b>Sixth Semester (Summer)</b>			
	ACC	150	Accounting Software Applications	1	2	2
	BUS	225	Business Finance	2	2	3
				<b>3</b>	<b>4</b>	<b>5</b>
			<b>Seventh Semester (Fall)</b>			
	ACC	140	Payroll Accounting	1	2	2
	ACC	220	Intermediate Accounting I	3	2	4
	BUS	147	Business Insurance	3	0	3
				<b>7</b>	<b>4</b>	<b>9</b>
			<b>Eighth Semester (Spring)</b>			
	ACC	180	Practices in Bookkeeping	3	0	3
	ACC	269	Auditing	3	0	3
	COM	231	Public Speaking	3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
			<b>Program Totals</b>	<b>62</b>	<b>24</b>	<b>74</b>

\*Related Electives: ACC 131, BUS 151, BUS 240, BUS 260.

## Accounting – Certificate

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.

## Level I

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

## Level II

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

## Baking and Pastry Arts

The Baking and Pastry Arts curriculum provides the training required to prepare students to assume positions as baking/pastry professionals in a variety of foodservice settings 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 Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

## Baking and Pastry Arts – Associate in Applied Science Degree

		This program consists of:					Credit Hrs.
Business and		<b>Major courses (BPA, CUL, HRM, COE prefix)</b>					<b>55</b>
Hospitality		<b>Related and general education courses including:</b>					<b>19</b>
Education		<i>English/Communications</i>	6				
		<i>Humanities/Fine Arts</i>	3				
		<i>Natural Sciences/Mathematics</i>	3				
		<i>Social Science</i>	3				
		<i>Other</i>	4				
		<b>PROGRAM TOTAL</b>					<b>74</b>
			<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	
			<b>Class</b>	<b>Lab</b>	<b>Work</b>	<b>Credit</b>	
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
		<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	0	1	
CUL	290	Competition Fundamentals or BPA 165 Hot and Cold Desserts	1	4	0	3	
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	150	Food Science	1	2	0	2	
CUL	160	Baking I	1	4	0	3	
MAT	115	Mathematical Models	2	2	0	3	
			<b>9</b>	<b>18</b>	<b>0</b>	<b>18</b>	
		<b>Second Semester (Spring)</b>					
BPA	120	Petit Fours and Pastries	1	4	0	3	
BPA	130	European Cakes and Tortes	1	4	0	3	
BPA	150	Artisan and Specialty Breads	1	6	0	4	
COM	231	Public Speaking	3	0	0	3	
CUL	120	Purchasing	2	0	0	2	
HRM	220	Food and Beverage Controls	3	0	0	3	
			<b>11</b>	<b>14</b>	<b>0</b>	<b>18</b>	
		<b>Third Semester (Summer)</b>					
COE	112BP	Co-op Work Experience	0	0	20	2	
		<b>Fourth Semester (Fall)</b>					
BPA	210	Cake Design and Decorating	1	4	0	3	
BPA	240	Plated Desserts	1	4	0	3	
BPA	250	Dessert and Bread Production	1	8	0	5	
ENG	111	Expository Writing	3	0	0	3	
HRM	145	Hospitality Supervision	3	0	0	3	
			<b>9</b>	<b>16</b>	<b>0</b>	<b>17</b>	
		<b>Fifth Semester (Spring)</b>					
BPA	220	Confection Artistry	1	6	0	4	
BPA	230	Chocolate Artistry	1	4	0	3	
BPA	260	Pastry and 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	
			<b>13</b>	<b>12</b>	<b>0</b>	<b>19</b>	
		<b>Program Totals</b>	<b>42</b>	<b>60</b>	<b>20</b>	<b>74</b>	

## Cake Designs – Certificate – Day Schedule

The Cake Designs certificate program focuses on the techniques of cake preparation and decoration. Through extensive hands-on training, students will learn fundamental and advanced skills associated with high quality, European and specialty cakes/tortes. Many restaurants, pastry shops and high volume foodservice facilities require the expertise of cake designers for weddings and other special occasion events.

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### Specific Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
BPA	210	Cake Design and Decorating	1	4	3
CUL	110	Sanitation and Safety	2	0	2
CUL	160	Baking I	1	4	3
			<b>4</b>	<b>8</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
BPA	130	European Cakes and Tortes	1	4	3
BPA	220	Confection Artistry	1	6	4
BPA	230	Chocolate Artistry	1	4	3
			<b>3</b>	<b>14</b>	<b>10</b>
<b>Certificate Totals</b>			<b>7</b>	<b>22</b>	<b>18</b>

## Restaurant Desserts Certificate\*

The Restaurant Desserts certificate addresses the art of pastry and baking as it relates to the professional kitchen. Students will learn to prepare and plate various hot and cold desserts and pastries that can be utilized in restaurant kitchens, bake shops, and in high-volume facilities.

\* Offered day only.

### Specific Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
BPA	165	Hot and Cold Desserts	1	4	3
CUL	110	Sanitation and Safety	2	0	2
CUL	160	Baking I	1	4	3
			<b>4</b>	<b>8</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
BPA	120	Petit Fours and Pastries	1	4	3
BPA	250	Dessert and Bread Production	1	8	5
			<b>2</b>	<b>12</b>	<b>8</b>
<b>Certificate Totals</b>			<b>6</b>	<b>20</b>	<b>16</b>

## Business Administration

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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

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (ACC, BUS, ECO, MKT prefix)</b>	<b>52</b>
<b>Related and general education courses including:</b>	<b>24</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematic</i>	3
<i>Social/Behavioral Science</i>	3
<i>Other</i>	9
<b>PROGRAM TOTAL</b>	<b>76</b>

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
ACC	120	Principles of Accounting I	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
			<b>10</b>	<b>8</b>	<b>14</b>
<b>Second Semester (Spring)</b>					
ACC	121	Principles of Accounting II	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
OST	136	Word Processing	1	2	2
			<b>13</b>	<b>4</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
BUS	115	Business Law I	3	0	3
BUS	153	Human Resource Management	3	0	3
ECO	251	Principles of Microeconomics	3	0	3
		Humanities Elective	3	0	3
		Related Elective*	3	0	3
			<b>15</b>	<b>0</b>	<b>15</b>

**Fourth Semester (Fall)**

ACC	129	Individual Income Taxes	2	2	3
BUS	135	Principles of Supervision	3	0	3
BUS	225	Business Finance	2	2	3
CIS	120	Spreadsheet I	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
			<b>12</b>	<b>6</b>	<b>15</b>

**Fifth Semester (Spring)**

BUS	147	Business Insurance	3	0	3
BUS	230	Small Business Management	3	0	3
BUS	239	Business Applications Seminar	1	2	2
COM	231	Public Speaking	3	0	3
		Related Electives*	6	0	6
			<b>16</b>	<b>2</b>	<b>17</b>

**Program Totals****66 20 76**

\*Related Electives: BUS 116, BUS 240, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 221, MKT 224.

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## Business Administration – Associate in Applied Science – Evening Schedule

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
ACC	120	Principles of Accounting I	3	2	4
BUS	110	Introduction to Business	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ACC	121	Principles of Accounting II	3	2	4
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
			<b>8</b>	<b>4</b>	<b>10</b>
<b>Third Semester (Summer)</b>					
BUS	137	Principles of Management	3	0	3
OST	136	Word Processing	1	2	2
		Humanities Elective	3	0	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>					
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
			<b>11</b>	<b>2</b>	<b>12</b>
<b>Fifth Semester (Spring)</b>					
BUS	135	Principles of Supervision	3	0	3
BUS	153	Human Resource Management	3	0	3
CIS	120	Spreadsheet I	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>

<b>Sixth Semester (Summer)</b>					
Business and	BUS 225	Business Finance	2	2	3
		Related Elective*	3	0	3
			<b>5</b>	<b>2</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>					
Hospitality	ACC 129	Individual Income Taxes	2	2	3
	BUS 147	Business Insurance	3	0	3
Education	BUS 230	Small Business Management	3	0	3
		Related Elective*	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>
<b>Eighth Semester (Spring)</b>					
	BUS 239	Business Applications Seminar I	1	2	2
	COM 231	Public Speaking	3	0	3
		Related Elective*	3	0	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Program Totals</b>			<b>66</b>	<b>20</b>	<b>76</b>

\*Related Electives: BUS 116, BUS 240, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 221, MKT 224.

## Computer Programming

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

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

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

## Computer Programming – Associate in Applied Science Degree – Day Schedule

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (CIS, COE, CSC, ITN, NET prefix)</b>		<b>57</b>
<b>Related and general education courses including:</b>		<b>16</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Sciences/Mathematics</i>	3	
<i>Social Science</i>	3	
<i>Other</i>	1	
<b>PROGRAM TOTAL</b>		<b>73</b>

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
CIS	115	Introduction to Programming and Logic	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I	2	2	3
		Social/Behavioral Sciences Elective	3	0	3
			<b>12</b>	<b>8</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
CIS	130	Survey of Operating Systems	2	3	3
CIS	152	Database Concepts and Applications	2	2	3
CSC	139	Visual Basic Programming	2	3	3
NET	110	Data Communications and Networking	2	2	3
		Humanities Elective	3	0	3
			<b>11</b>	<b>10</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
CIS	155	Database Theory/Analysis	2	2	3
COM	231	Public Speaking	3	0	3
CSC	239	Advanced Visual Basic	2	3	3
ITN	160	Principles of Web Design	2	2	3
			<b>9</b>	<b>7</b>	<b>12</b>
<b>Fourth Semester (Fall)</b>					
CIS	143	XML Technology	2	2	3
CIS	157	Database Programming I	2	2	3
CIS	286	Systems Analysis and Design	3	0	3
CSC	148	JAVA Programming	2	3	3
		Major Elective 1*	2	2	3
			<b>11</b>	<b>9</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>					
CSC	248	Advanced Internet Programming	2	3	3
CSC	285	Programming Project	2	2	3
CSC	292	Selected Topics in Computer Programming	1	3	2
ITN	170	Introduction to Internet Database	2	2	3
		Major Elective 2*	2	2	3
			<b>9</b>	<b>12</b>	<b>14</b>
<b>Program Totals</b>			<b>52</b>	<b>46</b>	<b>72</b>

*Major Elective 1*

*\*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 125, CIS 145, CIS 170, CIS 236, CIS 254, CIS 256, COE 212IS, COE 215IS, DME 116, ITN 120, NET 112.*

*Major Elective 2*

*\*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 215, CSC 120, CSC 130, CSC 134.*

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# Computer Programming – Associate in Applied Science Degree – Evening Schedule

*(Begins in even years only)*

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			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I	2	2	3
			<b>7</b>	<b>6</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
CIS	115	Introduction to Programming and Logic	2	2	3
CIS	152	Database Concepts and Applications	2	2	3
COM	231	Public Speaking	3	0	3
			<b>7</b>	<b>4</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
CIS	130	Survey of Operating Systems	2	3	3
CSC	139	Visual Basic Programming	2	3	3
			<b>4</b>	<b>6</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
CSC	239	Advanced Visual Basic	2	3	3
		Humanities Elective	3	0	3
		Social/Behavioral Sciences Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
CIS	143	XML Technology	2	2	3
ITN	160	Principles of Web Design	2	2	3
		Major Elective 2*	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>					
CIS	155	Database Theory/Analysis	2	2	3
ITN	170	Introduction to Internet Database	2	2	3
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>					
CIS	157	Database Programming I	2	2	3
CSC	148	JAVA Programming	2	3	3
NET	110	Data Communications and Networking	2	2	3
			<b>6</b>	<b>7</b>	<b>9</b>
<b>Eighth Semester (Spring)</b>					
CIS	286	Systems Analysis and Design	3	0	3
CSC	248	Advanced Internet Programming	2	3	3
		Major Elective 1*	2	2	3
			<b>7</b>	<b>5</b>	<b>9</b>
<b>Ninth Semester (Summer)</b>					
CSC	285	Programming Project	2	2	3
CSC	292	Selected Topics in Computer Programming	1	3	2
			<b>3</b>	<b>5</b>	<b>5</b>
<b>Program Totals</b>			<b>52</b>	<b>46</b>	<b>72</b>

*Major Elective 1*

\*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 125, CIS 145, CIS 170, CIS 236, CIS 254, CIS 256, COE 212IS, COE 215IS, DME 110, ITN 120, NET 112.

*Major Elective 2*

\*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 215, CSC 120, CSC 130, CSC 134.

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## JAVA Programming Certificate

Students completing this certificate will receive a strong grounding in JAVA Programming (applications and applets), object oriented programming and design, online application development and XML technologies.

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.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
CIS	115	Introduction to Programming and Logic	2	2	3
CIS	143	XML Technology	2	2	3
CSC	148	JAVA Programming	2	3	3
CSC	248	Advanced Internet Programming	2	3	3
<b>Certificate Totals</b>			<b>8</b>	<b>10</b>	<b>12</b>

## 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 provide the critical competencies to successfully meet industry demands. Courses 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 is available to graduates. With experience, graduates may advance to positions such as sous chef, executive chef, or food service manager.

### Specific Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

## Culinary Technology – Associate in Applied Science Degree

Business and	<b>This program consists of:</b>		<b>Credit Hrs.</b>
Hospitality	<b>Major courses (COE, CUL, and HRM prefix)</b>		<b>58</b>
Education	<b>Related and general education courses including:</b>		<b>18</b>
	<i>English/Communications</i>	6	
	<i>Humanities/Fine Arts</i>	3	
	<i>Natural Sciences/Mathematics</i>	3	
	<i>Social Science</i>	3	
	<i>Other</i>	3	
	<b>PROGRAM TOTAL</b>		<b>76</b>

				<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
				<b>Class</b>	<b>Lab</b>	<b>Work</b>	<b>Hrs.</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>							
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
				<b>12</b>	<b>14</b>	<b>0</b>	<b>19</b>
<b>Second Semester (Spring)</b>							
CUL	120	Purchasing		2	0	0	2
CUL	160	Baking I		1	4	0	3
CUL	170	Gardemanger 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
				<b>8</b>	<b>19</b>	<b>0</b>	<b>17</b>
<b>Third Semester (Summer)</b>							
COE	112CU	Co-op Work Experience I		0	0	20	2
<b>Fourth Semester (Fall)</b>							
COM	231	Public Speaking		3	0	0	3
CUL	130	Menu Design		2	0	0	2
CUL	180	International/American Regional Cuisine		1	8	0	5
CUL	290	Competition Fundamentals or CUL 260 Baking II		1	4	0	3
CUL	270	Gardemanger II		1	4	0	3
HRM	145	Hospitality Supervision		3	0	0	3
				<b>11</b>	<b>16</b>	<b>0</b>	<b>19</b>

**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
<b>Program Totals</b>			<b>13</b>	<b>12</b>	<b>0</b>	<b>19</b>
			<b>44</b>	<b>61</b>	<b>20</b>	<b>76</b>

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**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.

Through a combination of technical and general education courses, 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 Digital Media program develops technical skills through practical applications that employ current and emerging standards and technologies.

Graduates of the Digital Media program will be prepared for employment in business, industry, and government organizations as web designers, graphic artists, graphic designers, multimedia consultants, multimedia specialists, web developers, web application developers, web content engineers, web content specialists, media specialists, new media specialists, information specialists, digital media specialists, web architect/designers, animation specialists, interface designers, and many new jobs yet to be defined in this expanding field.

**Digital Media Technology – Associate in Applied Science Degree – Day Schedule**

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (DME prefix)</b>		<b>60</b>
<b>Related and general education courses including:</b>		<b>16</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Sciences/Mathematics</i>	3	
<i>Social Science</i>	3	
<i>Other</i>	1	
<b>PROGRAM TOTAL</b>		<b>76</b>

			Weekly Class Hrs.	Weekly Lab Hrs.	Weekly Credit Hrs.
<b>First Semester (Fall)</b>					
Business and	ACA 115	First-Year Seminar	0	2	1
Hospitality	ART 171	Computer Art I	2	6	3
	CIS 110	Introduction to Computers	2	2	3
Education	DME 110	Introduction to Digital Media	2	2	3
	ENG 111	Expository Writing	3	0	3
	MAT 115	Mathematical Models	2	2	3
			<b>9</b>	<b>14</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
	ART 271	Computer Art II	0	6	3
	CIS 115	Introduction to Programming & Logic	2	2	3
	DME 120	Introduction to Multimedia Applications	2	2	3
	ITN 160	Principles of Web Design	2	2	3
	PSY 118	Interpersonal Psychology or PSY 150 General Psychology	3	0	3
			<b>9</b>	<b>6</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
	COM 231	Public Speaking	3	0	3
	DME 130	Digital Animation I	2	2	3
	DME 140	Introduction to Audio/Video media Major Elective #1	2	2	3
			<b>8</b>	<b>8</b>	<b>12</b>
<b>Fourth Semester (Fall)</b>					
	CIS 152	Database Concepts and Applications	2	2	3
	DME 210	User Interface Design	2	2	3
	DME 230	Digital Animation II Major Elective #2 Major Elective #3	2 2 2	2 2 2	3 3 3
			<b>6</b>	<b>6</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>					
	DME 260	Emerging Technologies in Digital Media	2	2	3
	DME 270	Professional Practices in Digital Media	2	2	3
	DME 285	Systems Project Major Elective #4 Major Elective #5 Humanities Elective	2 2 2 3	2 2 2 0	3 3 3 3
			<b>13</b>	<b>10</b>	<b>18</b>
			<b>45</b>	<b>44</b>	<b>76</b>

*\*Suggested Electives for Web/Multimedia programming track: ITN 170, CSC 148, CIS 143, DME 220, and Co-op Work Experience or CSC 248.*

*\*Suggested Electives for Graphic Artists/Designers/Animation track: DME 115, ART 131 or ART 121, ART 264, ART 265, and Co-op Work Experience or Art course approved by advisor.*

# Digital Media Technology – Associate in Applied Science Degree – Evening Schedule

*(Begins in Even Years Only)*

Business and

Hospitality

Education

			Weekly	Weekly	Weekly
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
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	2	2	3
			<b>7</b>	<b>6</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
ART	171	Computer Art I	0	6	3
CIS	115	Introduction to Programming & Logic	2	2	3
DME	110	Introduction to Digital Media	2	2	3
			<b>4</b>	<b>10</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
DME	120	Introduction to Multimedia Applications	2	2	3
PSY	118	Interpersonal Psychology or PSY 150 General Psychology	3	0	3
			<b>5</b>	<b>2</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
ART	271	Computer Art II	0	6	3
COM	231	Public Speaking	3	0	3
ITN	160	Principles of Web Design	2	2	3
			<b>5</b>	<b>8</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
DME	130	Digital Animation I	2	2	3
DME	140	Introduction to Audio/Video media Major Elective #1	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>					
Major Elective #2			2	2	3
Major Elective #3			2	2	3
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>					
CIS	152	Database Concepts and Applications	2	2	3
DME	210	User Interface Design	2	2	3
DME	230	Digital Animation II Humanities Elective	2	2	3
			3	0	3
			<b>9</b>	<b>6</b>	<b>12</b>
<b>Eight Semester (Spring)</b>					
DME	260	Emerging Technologies in Digital Media	2	2	3
DME	270	Professional Practices in Digital Media Major Elective #3	2	2	3
			2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

**Ninth Semester (Summer)**

DME 285	System Project	2	2	3
	Major Elective #5	2	2	3
		<b>4</b>	<b>4</b>	<b>6</b>
		<b>50</b>	<b>52</b>	<b>76</b>

Business and

Hospitality

Education

*\*Suggested Electives for Web/Multimedia programming track: ITN 170, CSC 148, CIS 143, DME 220, and Co-op Work Experience or CSC 248.*

*\*Suggested Electives for Graphic Artists/Designers/Animation track: DME 115, ART 131 or ART 121, ART 264, ART 265, and Co-op Work Experience or Art course approved by advisor.*

## 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 Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

## Hotel and Restaurant Management – Associate in Applied Science Degree

This program consists of:		Credit Hrs.
<b>Major courses (ACC, COE, CUL, and HRM prefix)</b>		<b>55</b>
<b>Related and general education courses including:</b>		<b>19</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Sciences/Mathematics</i>	3	
<i>Social Science</i>	3	
<i>Other</i>	4	
<b>PROGRAM TOTAL</b>		<b>74</b>

				Weekly	Weekly	Weekly		
				Class	Lab	Work	Credit	
				Hrs.	Hrs.	Hrs.	Hrs.	
<b>First Semester (Fall)</b>								
ACA	115	First-Year Seminar		0	2	0	1	Business and
CUL	110	Sanitation and Safety		2	0	0	2	Hospitality
CUL	110A	Sanitation and Safety Lab		0	2	0	1	
CUL	142	Fundamentals of Food		2	6	0	5	Education
HRM	110	Introduction to Hospitality		2	0	0	2	
HRM	192	Selected Topics in Dining Room Management		1	2	0	2	
MAT	115	Mathematical Models		2	2	0	3	
				<b>9</b>	<b>14</b>	<b>0</b>	<b>16</b>	
<b>Second Semester (Spring)</b>								
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	
				<b>16</b>	<b>6</b>	<b>0</b>	<b>19</b>	
<b>Third Semester (Summer)</b>								
COE	112HR	Co-op Work Experience I		0	0	20	2	
<b>Fourth Semester (Fall)</b>								
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	145	Hospitality Supervision		3	0	0	3	
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	
				<b>17</b>	<b>4</b>	<b>0</b>	<b>19</b>	
<b>Fifth Semester (Spring)</b>								
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	
				<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>	
<b>Program Totals</b>				<b>60</b>	<b>24</b>	<b>20</b>	<b>74</b>	

## Bed and Breakfast/Inn Management – Certificate\*

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 Entrance Requirements

1. General college admission requirements.
2. Completion of required immunizations by the first day of class, including TB test and first dose of Hepatitis A vaccine.

\* Offered day with some evening opportunities.

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACC 120	Principles of Accounting I		3	2	4
CUL 110	Sanitation and Safety		2	0	2
CUL 160	Baking I		1	4	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Second Semester (Spring)</b>					
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		3	0	3
(OR HRM 210 Meetings and Conventions)					
(OR HRM 240 Hospitality Marketing)					
			<b>8</b>	<b>2</b>	<b>9</b>
<b>Certificate Totals</b>			<b>14</b>	<b>8</b>	<b>18</b>

## Hospitality Management Certificate – Day and Evening Schedule

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.

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CUL 110	Sanitation and Safety		2	0	2
HRM 140	Hospitality Tourism Law		3	0	3
HRM 145	Hospitality Supervision		3	0	3
HRM 220	Food and Beverage Controls		3	0	3
HRM 240	Hospitality Marketing		3	0	3
<b>Certificate Totals</b>			<b>14</b>	<b>0</b>	<b>14</b>

## 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 lifelong learning. Students will be prepared for employment opportunities in personnel, training, and other human resources development areas.

Business and  
Hospitality  
Education

## Human Resources Management – Associate in Applied Science Degree – Evening Schedule

<b>This program consists of</b>		<b>Credit Hrs.</b>
<b>Major courses (ACC, BUS, CIS, ECO, MKT prefix)</b>		<b>60</b>
<b>Related and general education courses including:</b>		<b>16</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Sciences/Mathematics</i>	3	
<i>Social/Behavioral Sciences</i>	3	
<i>Other</i>	1	
<b>PROGRAM TOTAL</b>		<b>76</b>

*\*Related Electives: BUS 110, BUS 116, BUS 260, BUS 270.*

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
ACC	120	Principles of Financial Accounting	3	2	4
BUS	151	People Skills	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ACC	121	Principles of Managerial Accounting	3	2	4
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
			<b>8</b>	<b>4</b>	<b>10</b>
<b>Third Semester (Summer)</b>					
ACC	140	Payroll Accounting	1	2	2
BUS	137	Principles of Management	3	0	3
OST	136	Word Processing	1	2	2
			<b>5</b>	<b>4</b>	<b>7</b>

	<b>Fourth Semester (Fall)</b>					
	BUS	115	Business Law I	3	0	3
Business and Hospitality	BUS	256	Recruitment, Selection, and Personnel Planning	3	0	3
	MAT	115	Mathematical Models	2	2	3
	MKT	120	Principles of Marketing	3	0	3
				<b>11</b>	<b>2</b>	<b>12</b>
Education	<b>Fifth Semester (Spring)</b>					
	BUS	135	Principles of Supervision	3	0	3
	BUS	217	Employment Laws and Regulations	3	0	3
	BUS	240	Business Ethics	3	0	3
	CIS	120	Spreadsheet I	2	2	3
				<b>11</b>	<b>2</b>	<b>12</b>
	<b>Sixth Semester (Summer)</b>					
	COM	231	Public Speaking	3	0	3
			Humanities Elective	3	0	3
			Related Elective*	3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
	<b>Seventh Semester (Fall)</b>					
	ECO	251	Principles of Microeconomics	3	0	3
	BUS	234	Training and Development	3	0	3
	BUS	258	Compensation and Benefits	3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
	<b>Eighth Semester (Spring)</b>					
	BUS	147	Business Insurance	3	0	3
	BUS	259	HRM Applications	3	0	3
	ECO	252	Principles of Macroeconomics	3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
	<b>Program Totals</b>			<b>67</b>	<b>14</b>	<b>76</b>

\*Related Electives: BUS 116, BUS 260, BUS 270.

## Information Systems

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

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

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

Students have the opportunity to pursue different tracks within the Information Systems curriculum: Web Technologies, Database Management, Technology Services, and Multimedia. Due to the sequencing of courses, it is *critical* for students to meet regularly with their advisor in the Business Computer Technologies department to ensure that prerequisites are met for each track.

# Information Systems – Associate in Applied Science Degree – Day Schedule

<b>This program consists of</b>		<b>Credit Hrs.</b>	
<b>Major courses (BUS, CIS, ITN, NET prefix)</b>		<b>59</b>	Business and
<b>Related and general education courses including:</b>		<b>16</b>	Hospitality
	<i>English/Communications</i>	6	
	<i>Humanities/Fine Arts</i>	3	Education
	<i>Natural Sciences/Mathematics</i>	3	
	<i>Social Sciences</i>	3	
	<i>Other</i>	1	
<b>PROGRAM TOTAL</b>		<b>75</b>	

			<b>Weekly</b>	<b>Weekly</b>	
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
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	2	2	3
		Humanities Elective*	3	0	3
			<b>13</b>	<b>6</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
CIS	115	Introduction to Programming and Logic	2	2	3
CIS	125	CORE Integrated Software	2	2	3
CIS	130	Survey of Operating Systems	2	3	3
CIS	152	Database Concepts and Applications	2	2	3
ITN	160	Principles of Web Design	2	2	3
			<b>10</b>	<b>11</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
CIS	143	XML Technology	2	2	3
CIS	165	Desktop Publishing I	2	2	3
COM	231	Public Speaking	3	0	3
		Social/Behavioral Science Elective	3	0	3
		Major Elective 1	2	2	3
			<b>12</b>	<b>6</b>	<b>15</b>
<b>Fourth Semester (Fall)</b>					
CIS	215	Hardware Installation and Maintenance	2	3	3
CIS	286	Systems Analysis and Design	3	0	3
NET	110	Data Communications and Networking	2	2	3
		Major Elective 2	2	2	3
		Major Elective 3	2	2	3
			<b>11</b>	<b>9</b>	<b>15</b>

**Fifth Semester (Spring)**

	CIS	288	Systems Project	1	4	3
Business and	CIS	292	Selected Topics in Information Systems	1	3	2
	NET	112	Security Fundamentals and Policies	2	2	3
Hospitality			Major Elective 4	2	2	3
Education			Major Elective 5	2	2	3
				<b>8</b>	<b>13</b>	<b>14</b>

**Program Totals**

<b>54</b>	<b>45</b>	<b>75</b>
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*Major Elective 1 – CIS 155, DME 110, ITN 110*

*Major Elective 2 – CIS 157, CIS 217, GIS 111, ITN 120*

*Major Elective 3 – CIS 163, CIS 170, ITN 170*

*Major Elective 4 – CIS 236, CIS 254, ITN 220, ITN 260*

*Major Elective 5 – CIS 256, COE 212IS, COE 215IS, ITN 270, ITN 285, NET 120*

*\* If you are interested in the Multimedia track of the IS curriculum, it is highly recommended that you take an ART class recommended by your advisor as your Humanities elective.*

## Information Systems – Associate in Applied Science Degree – Evening Schedule

*(Begins in even years only)*

				Weekly		
				Class	Lab	Credit
				Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>						
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		2	2	3
				<b>7</b>	<b>6</b>	<b>10</b>
<b>Second Semester (Spring)</b>						
CIS	115	Introduction to Programming and Logic		2	2	3
CIS	130	Survey of Operating Systems		2	3	3
ITN	160	Principles of Web Design		2	2	3
				<b>6</b>	<b>7</b>	<b>9</b>
<b>Third Semester (Summer)</b>						
CIS	152	Database Concepts and Applications		2	2	3
COM	231	Public Speaking		3	0	3
		Humanities Elective*		3	0	3
				<b>8</b>	<b>2</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>						
CIS	125	CORE Integrated Software		2	2	3
CIS	143	XML Technology		2	2	3
		Major Elective 1		2	2	3
				<b>6</b>	<b>6</b>	<b>9</b>

**Fifth Semester (Spring)**

CIS	165	Desktop Publishing I	2	2	3
		Major Elective 2	2	2	3
		Major Elective 3	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

**Sixth Semester (Summer)**

BUS	110	Introduction to Business	3	0	3
CIS	215	Hardware Installation and Maintenance	2	3	3
		Social/Behavioral Science Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>

**Seventh Semester (Fall)**

CIS	292	Selected Topics in Information Systems	1	3	2
NET	110	Data Communications and Networking	2	2	3
NET	112	Security Fundamentals and Policies	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>

**Eighth Semester (Spring)**

CIS	286	Systems Analysis and Design	3	0	3
		Major Elective 4	2	2	3
		Major Elective 5	2	2	3
			<b>7</b>	<b>4</b>	<b>9</b>

**Ninth Semester (Summer)**

CIS	288	Systems Project	1	4	3
			<b>1</b>	<b>4</b>	<b>3</b>
<b>Program Totals</b>			<b>54</b>	<b>45</b>	<b>75</b>

*Major Elective 1 – CIS 155, DME 110, ITN 110*

*Major Elective 2 – CIS 157, CIS 217, GIS 111, ITN 120*

*Major Elective 3 – CIS 170, ITN 170*

*Major Elective 4 – CIS 236, CIS 254, ITN 220, ITN 260*

*Major Elective 5 – CIS 256, COE 212IS, COE 215IS, ITN 270, ITN 285, NET 120*

*\* If you are interested in the Multimedia track of the IS curriculum, it is highly recommended that you take an ART class recommended by your advisor as your Humanities elective.*

## Database Management Certificate

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.

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.

Business and  
Hospitality  
Education

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
Business and	CIS 152	Database Concepts and Applications	2	2	3
	CIS 155	Database Theory/Analysis	2	2	3
Hospitality	CIS 157	Database Programming I	2	2	3
	CIS 254	Database Administrative Issues	2	2	3
Education	<b>Certificate Totals</b>		<b>8</b>	<b>8</b>	<b>12</b>

## Microcomputer Applications Certificate

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.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>Required Courses:</b>					
CIS 110	Introduction to Computers		2	2	3
CIS 120	Spreadsheet I		2	2	3
CIS 130	Survey of Operating Systems		2	3	3
Choose two electives:					
CIS 152	Database Concepts and Applications		2	2	3
CIS 165	Desktop Publishing I		2	2	3
OST 136	Word Processing		1	2	2
	<b>Certificate Totals</b>		<b>9/10</b>	<b>11</b>	<b>14/15</b>

## PC Installation and Maintenance Certificate

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 the PC Installation and Maintenance Certificate program. Success as a PC technician requires essential knowledge and skills that may be tested by the internationally recognized A+ certification exam.

Many computer hardware and software vendors, distributors, and resellers who must manage and support large hardware and software inventories seek PC installation and maintenance specialists who are A+ certified. A+ certification is a measure of competency as defined by experts across the industry.

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	Lab	Credit
			Hrs.	Hrs.	Hrs.
CIS 110	Introduction to Computers		2	2	3
CIS 130	Survey of Operating Systems		2	3	3
CIS 215	Hardware Installation and Maintenance		2	3	3
CIS 236	A+ Certification Prep		2	2	3
	<b>Certificate Totals</b>		<b>8</b>	<b>10</b>	<b>12</b>

## Web Technologies Certificate

The Web Technologies Certificate provides training in multiple aspects of Internet-related technologies, including: Web site design, development, and maintenance; Internet-related programming/database accessibility; interactive multimedia; and multimedia and graphics.

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.

Business and  
Hospitality  
Education

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CIS	143	XML Technology	2	2	3
ITN	110	Introduction to Web Graphics	2	2	3
ITN	120	Introduction to Multimedia	2	2	3
ITN	160	Principles of Web Design	2	2	3
ITN	170	Introduction to Internet Database	2	2	3
<b>Certificate Totals</b>			<b>10</b>	<b>10</b>	<b>15</b>

## 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

<b>This program consists of</b>		<b>Credit Hrs.</b>
<b>Major courses (ACC, BUS, ECO, MKT prefix)</b>		<b>53</b>
<b>Related and general education courses</b>		<b>23</b>
<b>including:</b>		
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Sciences/Mathematics</i>	3	
<i>Social/Behavioral Science</i>	3	
<i>Other</i>	8	
<b>PROGRAM TOTAL</b>		<b>76</b>

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACC	120	Principles of Accounting I	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
			<b>13</b>	<b>6</b>	<b>16</b>

		<b>Second Semester (Spring)</b>			
Business and Hospitality	ACC 121	Principles of Accounting II	3	2	4
	BUS 137	Principles of Management	3	0	3
	MKT 120	Principles of Marketing	3	0	3
	OST 136	Word Processing Humanities Elective	1 3	2 0	2 3
		<b>13</b>	<b>4</b>	<b>15</b>	
Education	<b>Third Semester (Summer)</b>				
	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 Related Elective*	3 3	0 0	3 3
		<b>15</b>	<b>0</b>	<b>15</b>	
		<b>Fourth Semester (Fall)</b>			
CIS 120	Spreadsheet I	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	
		<b>14</b>	<b>2</b>	<b>15</b>	
		<b>Fifth Semester (Spring)</b>			
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 Related Elective*	3 3	0 0	3 3	
		<b>15</b>	<b>0</b>	<b>15</b>	
<b>Program Totals</b>		<b>70</b>	<b>12</b>	<b>76</b>	

*\*Related Electives: BUS 116, BUS 135, BUS 147, BUS 153, BUS 225, BUS 230, BUS 240, BUS 260, BUS 270, CIS 165.*

## Marketing and Retailing – Associate in Applied Science Degree – Evening Schedule

		<b>Weekly</b>		
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>				
ACC 120	Principles of Accounting I	3	2	4
BUS 110	Introduction to Business	3	0	3
ENG 111	Expository Writing	3	0	3
		<b>9</b>	<b>2</b>	<b>10</b>
<b>Second Semester (Spring)</b>				
ACC 121	Principles of Accounting II	3	2	4
CIS 110	Introduction to Computers	2	2	3
MAT 115	Mathematical Models	2	2	3
		<b>7</b>	<b>6</b>	<b>10</b>
<b>Third Semester (Summer)</b>				
BUS 137	Principles of Management	3	0	3
OST 136	Word Processing Humanities Elective	1 3	2 0	2 3
		<b>7</b>	<b>2</b>	<b>8</b>

**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
			<b>12</b>	<b>0</b>	<b>12</b>

Business and  
Hospitality**Fifth Semester (Spring)**

CIS	120	Spreadsheet I	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
MKT	121	Retailing	3	0	3
MKT	220	Advertising and Sales Promotion	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>

Education

**Sixth Semester (Summer)**

MKT	122	Visual Merchandising	3	0	3
MKT	221	Consumer Behavior	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>

**Seventh Semester (Fall)**

COM	231	Public Speaking	3	0	3
MKT	123	Fundamentals of Selling	3	0	3
		Related Elective*	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>

**Eighth Semester (Spring)**

MKT	224	International Marketing	3	0	3
MKT	225	Marketing Research	3	0	3
MKT	227	Marketing Applications	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>

**Program Totals****71 10 76**

\*Related Electives: BUS 116, BUS 135, BUS 147, BUS 153, BUS 225, BUS 230, BUS 240, BUS 260, BUS 270, CIS 165.

**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**

<b>This program consists of</b>	<b>Credit Hrs.</b>
<b>Major courses (BUS, CIS, MED, OST prefix)</b>	<b>40</b>
<b>Related and general education courses including:</b>	<b>8</b>
<i>English/Communications</i>	3
<i>Natural Sciences/Mathematics</i>	5
<b>PROGRAM TOTAL</b>	<b>48</b>

Entrance requirements: keyboarding placement test into OST 134 and college English placement test.

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
Business and	BIO 163	Basic Anatomy and Physiology	4	2	5
Hospitality	CIS 110	Introduction to Computers	2	2	3
	ENG 111	Expository Writing	3	0	3
Education	MED 121	Medical Terminology I	3	0	3
	OST 164	Text Editing Applications	3	0	3
			<b>15</b>	<b>4</b>	<b>17</b>
<b>Second Semester (Spring)</b>					
	MED 122	Medical Terminology II	3	0	3
	OST 134	Text Entry and Formatting	2	2	3
	OST 136	Word Processing	1	2	2
	OST 148	Medical Coding, Billing, and Insurance	3	0	3
	OST 184	Records Management	1	2	2
	OST 201	Medical Transcription I	3	2	4
			<b>13</b>	<b>8</b>	<b>17</b>
<b>Third Semester (Summer)</b>					
	BUS 135	Principles of Supervision	3	0	3
	OST 132	Keyboard Skill Building	1	2	2
	OST 149	Medical Legal Issues	3	0	3
	OST 289	Office Systems Management	2	2	3
		Major Electives*	3	0	3
			<b>12</b>	<b>4</b>	<b>14</b>
<b>Program Totals</b>			<b>40</b>	<b>16</b>	<b>48</b>

\*Major Electives: ACC 120, ACC 140, CIS 120, CIS 152, NET 110, OST 233, OST 286, SPA 111.

## Medical Office Administration – Diploma – Evening Schedule

(Begins in even years only)

Entrance requirements: Keyboarding placement test into OST 134 and college English placement test.

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
	BIO 163	Basic Anatomy and Physiology	4	2	5
	CIS 110	Introduction to Computers	2	2	3
	OST 164	Text Editing Applications	3	0	3
			<b>9</b>	<b>4</b>	<b>11</b>
<b>Second Semester (Spring)</b>					
	MED 121	Medical Terminology I	3	0	3
	OST 134	Text Entry and Formatting	2	2	3
	OST 136	Word Processing	1	2	2
			<b>6</b>	<b>4</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
	ENG 111	Expository Writing	3	0	3
	MED 122	Medical Terminology II	3	0	3
	OST 132	Keyboard Skill Building	1	2	2
			<b>7</b>	<b>2</b>	<b>8</b>

**Fourth Semester (Fall)**

OST	184	Records Management	1	2	2
OST	201	Medical Transcription I	3	2	4
OST	289	Office Systems Management	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

Business and

Hospitality

Education

**Fifth Semester (Spring)**

BUS	135	Principles of Supervision	3	0	3
OST	148	Medical Coding, Billing, and Insurance	3	0	3
OST	149	Medical Legal Issues	3	0	3
		Major Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>
			<b>40</b>	<b>16</b>	<b>48</b>

**Program Totals**

\*Major Electives: ACC 120, ACC 140, CIS 120, NET 110, OST 233, OST 286, SPA 111.

**Medical Coding Certificate – Evening Schedule***(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 98 with 80 percent accuracy (or CIS 110 or CIS 111.)

Weekly		
Class	Lab	Credit
Hrs.	Hrs.	Hrs.

**First Semester (Fall)**

BIO	163	Basic Anatomy and Physiology	4	2	5
MED	121	Medical Terminology I	3	0	3
			<b>7</b>	<b>2</b>	<b>8</b>

**Second Semester (Spring)**

MED	122	Medical Terminology II	3	0	3
OST	148	Medical Coding, Billing, and Insurance	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>

**Third Semester (Summer)**

OST	247	CPT Coding in the Medical Office	1	2	2
OST	248	Diagnostic Coding	1	2	2
			<b>2</b>	<b>4</b>	<b>4</b>

**Certificate Totals**

<b>15</b>	<b>6</b>	<b>18</b>
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## 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.

## Medical Transcription Diploma

<b>This program consists of</b>					<b>Credit Hrs.</b>	
<b>Major courses (CIS, COE, MED, OST prefix)</b>					<b>36</b>	
<b>Related and general education courses including:</b>					<b>8</b>	
	<i>English/Communications</i>	3				
	<i>Natural Sciences/Mathematics</i>	5				
<b>PROGRAM TOTAL</b>					<b>44</b>	
		<b>Weekly</b>				
		<b>Class</b>	<b>Lab</b>	<b>Work</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
CIS	110	Introduction to Computers	2	2	0	3
MED	121	Medical Terminology I	3	0	0	3
OST	134	Text Entry and Formatting	2	2	0	3
OST	164	Text Editing Applications	3	0	0	3
			<b>14</b>	<b>6</b>	<b>0</b>	<b>17</b>
<b>Second Semester (Spring)</b>						
ENG	111	Expository Writing	3	0	0	3
MED	122	Medical Terminology II	3	0	0	3
OST	132	Keyboard Skill Building	1	2	0	2
OST	136	Word Processing	1	2	0	2
OST	201	Medical Transcription I	3	2	0	4
			<b>11</b>	<b>6</b>	<b>0</b>	<b>14</b>
<b>Third Semester (Summer)</b>						
OST	149	Medical Legal Issues	3	0	0	3
OST	184	Records Management	1	2	0	2
OST	202	Medical Transcription II	3	2	0	4
OST	286	Professional Development	3	0	0	3
			<b>10</b>	<b>4</b>	<b>0</b>	<b>12</b>
<b>Fourth Semester (Fall)</b>						
COE	111MT	Co-op Work Experience	0	0	10	1
<b>Program Totals</b>			<b>35</b>	<b>16</b>	<b>10</b>	<b>44</b>

*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

(Begins in even years only)

				Weekly	Weekly	Weekly	Weekly	
				Class	Lab	Work	Credit	
				Hrs.	Hrs.	Hrs.	Hrs.	
<b>First Semester (Fall)</b>								
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	
				<b>9</b>	<b>4</b>	<b>0</b>	<b>11</b>	
<b>Second Semester (Spring)</b>								
MED	121	Medical Terminology I		3	0	0	3	
OST	134	Text Entry and Formatting		2	2	0	3	
OST	136	Word Processing		1	2	0	2	
				<b>6</b>	<b>4</b>	<b>0</b>	<b>8</b>	
<b>Third Semester (Summer)</b>								
MED	122	Medical Terminology II		3	0	0	3	
OST	132	Keyboard Skill Building		1	2	0	2	
OST	286	Professional Development		3	0	0	3	
				<b>7</b>	<b>2</b>	<b>0</b>	<b>8</b>	
<b>Fourth Semester (Fall)</b>								
ENG	111	Expository Writing		3	0	0	3	
OST	184	Records Management		1	2	0	2	
OST	201	Medical Transcription I		3	2	0	4	
				<b>7</b>	<b>4</b>	<b>0</b>	<b>9</b>	
<b>Fifth Semester (Spring)</b>								
OST	149	Medical Legal Issues		3	0	0	3	
OST	202	Medical Transcription II		3	2	0	4	
				<b>6</b>	<b>2</b>	<b>0</b>	<b>7</b>	
<b>Sixth Semester (Summer)</b>								
COE	111MT	Co-op Work Experience		0	0	10	1	
<b>Program Totals</b>				<b>35</b>	<b>16</b>	<b>10</b>	<b>44</b>	

*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 local- and wide-area networks. Students will learn how to use technologies to provide for data, voice, image, and video communications in business, industry, and education.

Course work includes design, installation, configuration, and management of local- and wide-area network hardware and software. Emphasis is placed on developing proficiency in the use of network management software and the use of hardware such as bridges and routers.

Graduates may find employment in entry-level jobs as local area network managers, network operators, network analysts, and network technicians. Graduates may also be qualified to take certification examinations for various network products, depending on their local program.

Business and  
Hospitality  
Education

# Networking Technology – Associate in Applied Science Degree

Business and	<b>This program consists of:</b>		<b>Credit Hrs.</b>
Hospitality	<b>Major courses (CIS, COE, CSC, NET prefix)</b>		<b>57</b>
Education	<b>Related and general education courses including:</b>		<b>17</b>
	<i>English/Communications</i>	6	
	<i>Humanities/Fine Arts</i>	3	
	<i>Natural Sciences/Mathematics</i>	4	
	<i>Social Science</i>	3	
	<i>Other</i>	1	
	<b>PROGRAM TOTAL</b>		<b>74</b>

			Weekly	Weekly	
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
CIS	245	Operating Systems/Multi-User	2	3	3
ENG	111	Expository Writing	3	0	3
MAT	171	Pre-Calculus Algebra	3	0	3
MAT	171A	Pre-Calculus Algebra Lab	0	2	1
NET	110	Data Communications/Networking	2	2	3
			<b>12</b>	<b>11</b>	<b>17</b>
<b>Second Semester (Spring)</b>					
NET	112	Security Fundamentals and Policies	3	0	3
NET	120	Network Install/Admin I	2	2	3
NET	125	Routing and Switching I	1	4	3
NET	145	Introduction to Linux	2	2	3
		Social/Behavioral Science Elective	3	0	3
			<b>11</b>	<b>8</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
NET	126	Routing and Switching II	1	4	3
NET	220	Network Install/Admin II	2	2	3
NET	230	Wide Area Networking	2	2	3
		Humanities Elective	3	0	3
			<b>8</b>	<b>8</b>	<b>12</b>
<b>Fourth Semester (Fall)</b>					
CIS	115	Introduction to Programming and Logic	2	2	3
COM	231	Public Speaking	3	0	3
NET	240	Network Design	3	0	3
NET	250	Advanced Networks I	2	2	3
		Major Elective 1	2	2	3
			<b>12</b>	<b>6</b>	<b>15</b>

**Fifth Semester (Spring)**

CIS	215	Hardware Installation and Maintenance	2	3	3
NET	251	Advanced Networks II	2	2	3
NET	260	Internet Development & Support	3	0	3
NET	280	Network Project Major Elective	1	4	3
			2	2	3
			<b>10</b>	<b>11</b>	<b>15</b>
			<b>53</b>	<b>44</b>	<b>74</b>

Business and  
Hospitality  
Education

**Program Totals**

*\*The hour totals include a minimum of twelve credit hours of major electives to be selected from: NET 155, NET 165, NET 222, NET 225, NET 226, NET 232, NET 270, NET 271, NET 272, NET 273.*

## Networking Technology – Associate in Applied Science Degree – Evening Schedule

*(Begins in even years only)*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
MAT	171	Pre-Calculus Algebra	3	0	3
MAT	171A	Pre-Calculus Algebra Lab	0	2	1
			<b>5</b>	<b>6</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
CIS	245	Operating Systems/Multi-User	2	3	3
ENG	111	Expository Writing	3	0	3
NET	110	Data Communications/Networking	2	2	3
			<b>7</b>	<b>5</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
COM	231	Public Speaking	3	0	3
NET	120	Network Install/Admin I	2	2	3
NET	145	Introduction to Linux Humanities Elective	2	2	3
			3	0	3
			<b>10</b>	<b>4</b>	<b>12</b>
<b>Fourth Semester (Fall)</b>					
CIS	215	Hardware Installation and Maintenance	2	3	3
NET	112	Security Fundamentals and Policies	3	0	3
NET	220	Network Install/Admin II	2	2	3
			<b>7</b>	<b>5</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
NET	125	Routing and Switching I	1	4	3
NET	230	Wide Area Networking Social/Behavioral Science Elective	2	2	3
			3	0	3
			<b>6</b>	<b>6</b>	<b>9</b>

**Sixth Semester (Summer)**

	CIS	115	Introduction to Programming and Logic	2	2	3
Business and	NET	126	Routing and Switching II	1	4	3
				<b>3</b>	<b>6</b>	<b>6</b>

Hospitality

**Seventh Semester (Fall)**

	NET	240	Network Design	3	0	3
Education	NET	250	Advanced Networks I	2	2	3
	NET	260	Internet Development and Support Major Elective 1	3	0	3
				2	2	3
				<b>10</b>	<b>4</b>	<b>12</b>

**Eighth Semester (Spring)**

	NET	251	Advanced Networks II	2	2	3
	NET	280	Network Project Major Elective 2	1	4	3
				2	2	3
				<b>5</b>	<b>8</b>	<b>9</b>

**Program Totals****53 44 74**

*\*The hour totals include a minimum of twelve credit hours of major electives to be selected from: NET 155, NET 165, NET 222, NET 225, NET 226, NET 232, NET 270, NET 271, NET 272, NET 273*

**Cisco Certified Network Associate**

This certificate is designed to 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 completion of the four course sequence, students will have the experience they need to pass the test required to achieve CCNA status. Applicants must have earned a high school diploma or GED or receive permission from the department chairperson. Satisfactory score on a placement examination may also be required.

				<b>WeeklyWeekly</b>		
				<b>Class</b>	<b>Lab</b>	<b>Credit</b>
				<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
	NET	125	Routing and Switching I	1	4	3
	NET	126	Routing and Switching II	1	4	3
	NET	225	Advanced Routing and Switching I	1	4	3
	NET	226	Advanced Routing and Switching II	1	4	3
				<b>4</b>	<b>16</b>	<b>12</b>

**Cisco Certified Network Professional Certificate**

Students will learn advanced internetworking concepts. Topics will include multi-layer switching, fault tolerance, remote access, controlling overhead, advanced routed protocols, WAN troubleshooting. Upon completion students should be able to work in an advanced internetworking environment. Students will also gain knowledge necessary for the CCNP certification exam. Applicants must have earned a high school diploma or GED and currently be certified as a CCNA or have the permission of the department chairperson. Satisfactory score on a placement exam may also be required.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
NET	270	Scalable Networks Design	1	4	3
NET	271	Multi-Layer Networks	1	4	3
NET	272	Remote Access Networks	1	4	3
NET	273	Internetworking Support	1	4	3
<b>Certificate Totals</b>			<b>4</b>	<b>16</b>	<b>12</b>

Business and  
Hospitality  
Education

## Networking Certificate

Students learn the basics of computer networks including system administration and file management. Networking software such as Novell and Windows NT will be used. Internet usage will be presented. Applicants must have earned a high school diploma or GED to apply for this certificate program.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>Required Courses:</b>					
CIS	110	Introduction to Computers	2	2	3
NET	110	Data Communications/Networking	2	2	3
NET	120	Networking Installation & Administration I	2	2	3
NET	220	Networking Installation & Administration II	2	2	3
<b>Certificate Totals</b>			<b>8</b>	<b>8</b>	<b>12</b>

## Networking Security Certificate

Students learn basic and advanced concepts in networking security. Issues related to networking operating systems, remote access, traffic analysis, attack patterns, and TCP/IP concepts will be presented. Upon completion students should have a fundamental knowledge of data network security and be able to implement a functional security plan. Applicants must have earned a high school diploma or GED. Applicants must have completed NET 225 or equivalent or hold current CCNA certification or permission of department chairperson. Satisfactory score on a placement exam may also be required.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
NET	112	Security Fundamentals and Policies	3	0	3
NET	145	Introduction to Linux	2	2	3
NET	222	Security Administration I	2	2	3
NET	232	Security Administration II	2	2	3
<b>Certificate Totals</b>			<b>9</b>	<b>6</b>	<b>12</b>

## Open Source Operating Systems Certificate

Students will learn concepts related to administration of open source operating systems. Sun UNIX and several versions of Linux will be used in this program. Topics will include hardware management, system configuration, client configuration, scripting, Gnome, KDE, server-side setup, and security administration. Upon completion students should be able to setup and administer a server or client machine utilizing an open source operating system. Applicants must have earned a high school diploma or GED and successfully completed NET 110 or have the permission of the department chairperson. Satisfactory score on a placement exam may also be required.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
NET	125	Routing and Switching I	1	4	3
NET	145	Introduction to Linux	2	2	3
NET	155	Linux System Administration	2	2	3
NET	165	Linux Networking/Security	2	2	3
<b>Certificate Totals</b>			<b>7</b>	<b>10</b>	<b>12</b>

## Office Systems Technology

The Office Systems Technology curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace. Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

Graduates should qualify for employment in a variety of positions in business, government, and industry. Job classifications range from entry-level to supervisor to middle management.

## Office Systems Technology – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (ACC, BUS, CIS, COE, ITN, NET, OST prefix)</b>	<b>56</b>
<b>Related and general education courses including:</b>	<b>16</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social Science</i>	3
<i>Other</i>	1
<b>PROGRAM TOTAL</b>	<b>72</b>

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	1	Business and Hospitality  Education
ACC	120	Principles of Accounting I	3	2	4	
OST	286	Professional Development	3	0	3	
CIS	110	Introduction to Computers	2	2	3	
ENG	111	Expository Writing	3	0	3	
OST	131	Keyboarding	1	2	2	
			<b>12</b>	<b>8</b>	<b>16</b>	
<b>Second Semester (Spring)</b>						
CIS	120	Spreadsheet I	2	2	3	
MAT	115	Mathematical Models	2	2	3	
OST	134	Text Entry and Formatting	2	2	3	
OST	136	Word Processing	1	2	2	
OST	164	Text Editing Applications	3	0	3	
OST	184	Records Management	1	2	2	
			<b>11</b>	<b>10</b>	<b>16</b>	
<b>Third Semester (Summer)</b>						
ACC	140	Payroll Accounting	1	2	2	
OST	289	Office Systems Management	2	2	3	
COM	231	Public Speaking	3	0	3	
OST	132	Keyboard Skill Building	1	2	2	
PSY	150	General Psychology	3	0	3	
			<b>10</b>	<b>6</b>	<b>13</b>	
<b>Fourth Semester (Fall)</b>						
BUS	260	Business Communications	3	0	3	
OST	137	Office Systems Applications	1	2	2	
OST	233	Office Publications Design	2	2	3	
ITN	160	Principles of Web Design	2	2	3	
		Major Electives*	3	0	3	
			<b>11</b>	<b>6</b>	<b>14</b>	
<b>Fifth Semester (Spring)</b>						
CIS	152	Database Concepts and Application	1	2	3	
CIS	292	Special Topics				
		in Information Systems	1	3	2	
		Humanities Elective	3	0	3	
		Major Elective*	5	0	5	
			<b>10</b>	<b>5</b>	<b>13</b>	
<b>Program Totals</b>			<b>54</b>	<b>35</b>	<b>72*</b>	

\*The hour totals include a minimum of six credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 116, BUS 137, BUS 153, BUS 230, BUS 240, COE 211OS, MED 121, SPA 111.

## Office Systems Technology Diploma

This program consists of:		Credit Hrs.
Major courses (BUS, CIS, OST prefix)		29
Related and general education courses including:		12
English/Communications	6	
Other	6	
<b>PROGRAM TOTAL</b>		<b>41</b>

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
Business and	ACC 120	Principles of Accounting I	3	2	4
Hospitality	OST 286	Professional Development	3	0	3
	CIS 110	Introduction to Computers	2	2	3
Education	ENG 111	Expository Writing	3	0	3
	OST 131	Keyboarding	1	2	2
			<b>12</b>	<b>6</b>	<b>15</b>
<b>Second Semester (Spring)</b>					
	CIS 120	Spreadsheet I	2	2	3
	OST 134	Text Entry and Formatting	2	2	3
	OST 136	Word Processing	1	2	2
	OST 164	Text Editing Applications	3	0	3
	OST 184	Records Management	1	2	2
			<b>9</b>	<b>8</b>	<b>13</b>
<b>Third Semester (Summer)</b>					
	ACC 140	Payroll Accounting	1	2	2
	OST 289	Office Systems Management	2	2	3
	COM 231	Public Speaking	3	0	3
	OST 132	Keyboard Skill Building	1	2	2
		Major Elective*	3	0	3
			<b>10</b>	<b>6</b>	<b>13</b>
<b>Program Totals</b>			<b>31</b>	<b>20</b>	<b>41*</b>

\*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, BUS 240, CIS 152, NET 110, SPA 111.

## Word Processing/Desktop Publishing Certificate – Day and Evening Schedule

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.

			WeeklyWeekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
	CIS 110	Introduction to Computers	2	2	3
	CIS 165	Desktop Publishing I	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	1	2	2
<b>Certificate Totals</b>			<b>8</b>	<b>10</b>	<b>13</b>

## Real Estate

The Real Estate curriculum provides the prelicensing education required by the North Carolina Real Estate Commission, prepares individuals to enter the profession, and offers additional education to meet professional development needs.

Course work includes the practices and principles of real estate, emphasizing financial and legal applications, property development, and property values.

Graduates should qualify for North Carolina Real Estate Sales and Broker examinations. They should be able to enter apprenticeship training and to provide real estate services to consumers in a competent manner.

Business and  
Hospitality  
Education

## Real Estate Certificate

*(Evening only)*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
RLS	112	Real Estate Fundamentals	5	0	5
RLS	113	Real Estate Mathematics	2	0	2
			<b>7</b>	<b>0</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
RLS	117	Real Estate Broker	4	0	4
RLS	192	Selected Topics in Real Estate	2	0	2
			<b>6</b>	<b>0</b>	<b>6</b>
<b>Certificate Totals</b>			<b>13</b>	<b>0</b>	<b>13</b>

## Real Estate Appraisal Certificate

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 Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice. Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

## Real Estate Appraisal Certificate

*(Evening only)*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
REA	101	Introduction to Real Estate Appraisal R-1	2	0	2
REA	102	Valuation Principles and Practices R-2	2	0	2
			<b>4</b>	<b>0</b>	<b>4</b>

**Second Semester (Spring)**

	REA 103	Applied Residential Property Valuation R-3	1	0	1
Business and	REA 104	USPAP R-4	1	0	1
Hospitality	REA 201	Intro to Income Property Appraisal G-1	2	0	2
			<b>4</b>	<b>0</b>	<b>4</b>

Education

**Third Semester (Fall)**

	REA 202	Adv. Income Capitalization Procedures G-2	2	0	2
	REA 203	Applied Income Property Valuation G-3	2	0	2
			<b>4</b>	<b>0</b>	<b>4</b>
			<b>12</b>	<b>0</b>	<b>12</b>

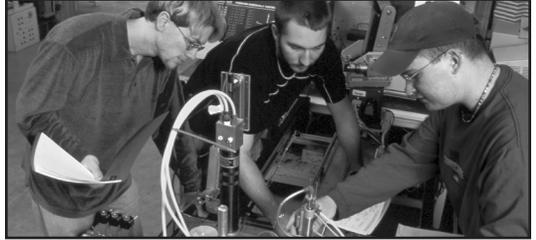
**Certificate Totals**

*Note: Courses must be taken in sequence. State licensure or certification requires an examination and a substantial experience component. Please contact the Real Estate Program Coordinator for additional information before enrolling.*

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# Engineering and Applied Technology

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The Engineering and Applied Technology Division offers a variety of Associate in Applied Science degree and diploma programs in engineering technologies and applied technologies. Degree-level students are provided an appropriate blend of engineering, scientific, and mathematical theories with applications. Diploma-level students are provided training that is closely related to the industrial work environments. Appropriate related and general education courses are provided in support of these programs.

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	<b>Air Conditioning, Heating, and Refrigeration Technology</b>	<b>Automotive Systems Technology*</b>	<b>Carpentry</b>
Engineering and Applied Technology	<b>Recommended High School Courses</b>		
	Electricity Electronics	Applied Mathematics Physics Electronics	Practical Mathematics Drafting Woodworking courses
	<b>A-B Tech Entrance Requirements</b>		
	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Mathematics (2 units, including Algebra)  Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Day/Night begins Fall. Can take some single courses any semester.	Day/Night begins Fall of even years and Spring of odd years.	Day/Night begins Fall.
	<b>Degree</b>		
	Associate in Applied Science or Diploma	Associate in Applied Science or Diploma	Diploma
	<b>Employment Opportunities</b>		
	Maintenance Technician Climate Control Technician Service Technician Systems Engineer Refrigeration Technician Estimator	General Automotive Technician Specialized Technician Shop Supervisor	Contractors as Carpenters or Estimators In Cabinet Shop as Cabinetmakers or Installers

\* Tech Prep agreements with regional high schools.

Civil Engineering Technology	Computer-Aided Drafting Technology*	Computer Engineering Technology*
<b>Recommended High School Courses</b>		
Trigonometry Drafting	Algebra Geometry Drafting	Trigonometry
<b>A-B Tech Entrance Requirements</b>		
Algebra I & II or Algebra I and Plane Geometry  Acceptable scores on SAT, ACT, or Read- ing Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Com- puterized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry  Acceptable scores on SAT, ACT or Read- ing Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Com- puterized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry  Acceptable scores on SAT, ACT, or Read- ing Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Com- puterized Placement Tests (CPT).
<b>Program Schedule</b>		
Day/Night begins Fall. Night begins in odd numbered years. Can take single courses any semester	Day/Night begins Fall. Night begins in odd numbered years only.	Day/Night begins Fall.
<b>Degree</b>		
Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
<b>Employment Opportunities</b>		
Construction Technician Materials Testing Technician Construction Inspector Engineering Technician	Mechanical Design Product Design Manufacturing Design CAD Operator	Computer and Network Service Technician Systems Integration Technician Automation Specialist Integrated Manufac- turing Technician Systems Support Engineer Controls Engineer

Engineering  
and Applied  
Technology

\* Tech Prep  
agreements  
with regional  
high schools.

	<b>Construction Management Technology</b>	<b>Electrical/Electronics Technology*</b>	<b>Electronics Engineering Technology*</b>
Engineering and Applied Technology	<b>Recommended High School Courses</b>		
	Trigonometry Drafting	Trigonometry	Trigonometry
	<b>A-B Tech Entrance Requirements</b>		
	Algebra I & II or Algebra I and Plane Geometry	Algebra I & II or Algebra I and Plane Geometry	Algebra I & II or Algebra I and Plane Geometry
	Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Night begins Fall.	Night begins Fall.	Day/Night begins Fall.
	<b>Degree</b>		
	Associate in Applied Science	Associate in Applied Science or Diploma	Associate in Applied Science
	<b>Employment Opportunities</b>		
	Entry level position in the field of Construction Management	Industrial Maintenance Technician Industrial Electrician Facilities Technician Electrical License Apprentice	Electronics Engineering Technician Electronics Maintenance Technician Control Systems Technician

\* Tech Prep agreements with regional high schools.

Heavy Equipment and Transport Technology	Machining Technology*	Mechanical Engineering Technology
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Recommended High School Courses		
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Applied Mathematics Electronics Electricity	Applied Mathematics Drafting Blueprint Reading	Trigonometry Physics
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Engineering  
and Applied  
Technology

A-B Tech Entrance Requirements		
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Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry
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Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).

Program Schedule		
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Day begins Fall AAS Degree Night begins Fall.	Day/Night begins Fall. Will also offer afternoon schedule on demand.	Day begins Fall. Night begins in even numbered years. Can take single courses any semester.
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Degree		
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Associate in Applied Science or Diploma	Associate in Applied Science or Diploma	Associate in Applied Science
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Employment Opportunities		
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Diesel Mechanic Fuel Injection Servicer Repairer Heavy Tractor Mechanic Help	For Manufacturers as Machinist Machine or CNC Set-Up Operator Quality Control Technician	Manufacturing Engineer Quality Control Technician Mechanical Designer Maintenance Engineering Technician Controls Engineering Technician
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\* Tech Prep agreements with regional high schools.

	Surveying Technology	Welding Technology*
Engineering and Applied Technology	<b>Recommended High School Courses</b>	
	Trigonometry Drafting Algebra I & II and Plane Geometry	Practical Arithmetic Blueprint Reading Drafting
	<b>A-B Tech Entrance Requirements</b>	
	Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>	
	Day begins Fall. Night begins in odd numbered years. Can take single courses any semester.	Day/Night begins Fall. Can take single courses any semester.
	<b>Degree</b>	
	Associate in Applied Science	Diploma
	<b>Employment Opportunities</b>	
	Construction Layout Technician Land Surveyor Mapper	Arc Welder Arc Welder-Machine Operator Gas Welder-Machine Operator Combination Welder Pipe Welder

\* Tech Prep agreements with regional high schools.

# 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.

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

- Air Conditioning, Heating, and Refrigeration Technology
- Automotive Systems Technology
- Computer-Aided Drafting Technology
- Civil Engineering Technology
- Computer Engineering Technology
- Construction Management Technology
- Electrical/Electronics Technology
- Electronics Engineering Technology
- Heavy Equipment and Transport Technology
- Machining Technology
- Mechanical Engineering Technology
- Surveying Technology

## **Diplomas Awarded**

- Air Conditioning, Heating, and Refrigeration Technology
- Automotive Systems Technology
- Carpentry
- Electrical/Electronics Technology
- Heavy Equipment and Transport Technology
- Machining Technology
- Welding Technology

## **Certificates**

- Air Conditioning & Heating – Basic
- Air Conditioning & Heating – Intermediate
- Air Conditioning & Heating – Advanced
- Automation/Robotics
- Automotive
- CNC Programming
- Computer-Aided Drafting Technology
- Construction Management Technology
- Heavy Equipment and Transport Technology
- Industrial HVAC Maintenance
- Machining Technology - Basic
- Personal Computer and Network Maintenance
- Welding

## 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 A.A.S. 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. A.A.S. degree graduates should be able to demonstrate an understanding of system selection and balance, and advanced systems.

## Air Conditioning, Heating and Refrigeration Technology – Associate in Applied Science Degree – Evening Schedule

*(Evening Program Only)*

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (AHR, ELC, WLD, BPR prefix)</b>		<b>51</b>
<b>Related and general education courses</b>		<b>19</b>
<b>including:</b>		
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Science/Mathematics</i>	4	
<i>Social Science</i>	3	
<i>Other</i>	14	
<b>PROGRAM TOTAL</b>		<b>70</b>

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ACA 115	First-Year Seminar		0	2	1
AHR 112	Heating Technology		2	4	4
ELC 111	Introduction to Electricity		2	2	3
			<b>4</b>	<b>8</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
AHR 120	HVACR Maintenance		1	3	2
AHR 130	HVAC Controls		2	2	3
ELC 132	Electrical Drawings		1	3	2
WLD 111	Oxy Fuel Welding		1	3	2
			<b>5</b>	<b>11</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
AHR 110	Introduction to Refrigeration		2	6	5
<b>Fourth Semester (Fall)</b>					
AHR 113	Comfort Cooling		2	4	4
AHR 125	HVAC Electronics		1	3	2
BPR 135	Schematics and Diagrams		2	0	2
			<b>5</b>	<b>7</b>	<b>8</b>

**Fifth Semester (Spring)**

AHR	115	Refrigeration Systems	1	3	2
ENG	111	Expository Writing	3	0	3
PHY	122	Applied Physics II	3	2	4
			<b>7</b>	<b>5</b>	<b>9</b>

Engineering  
and Applied  
Technology

**Sixth Semester (Summer)**

AHR	114	Heat Pump Technology	2	4	4
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**Seventh Semester (Fall)**

AHR	211	Residential Systems Design	2	2	3
CIS	111	Basic PC Literacy	1	2	2
COM	231	Public Speaking	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>

**Eighth Semester (Spring)**

AHR	212A	Advanced Comfort Systems	1	3	2
ELC	128	Introduction to PLC (or ELC 113)	2	3	3
		Social/Behavioral Science Elective	3	0	3
			<b>6</b>	<b>6</b>	<b>8</b>

**Ninth Semester (Summer)**

AHR	210	Residential Building Code/HVAC	1	2	2
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**Tenth Semester (Fall)**

AHR	212B	Advanced Comfort Systems	1	3	2
ELC	117	Motors and Controls	2	6	4
		Humanities/Fine Arts Elective	3	0	3
			<b>6</b>	<b>9</b>	<b>9</b>

**Program Totals**

**44    61    70**

## Air Conditioning, Heating and Refrigeration Technology – Diploma

This program consists of:

**Major courses (AHR prefix)**

**Credit Hrs.**

**29**

**Related and general education courses**

**14**

**including:**

*English/Communications*

3

*Natural Science/Mathematics*

4

*Other*

7

**PROGRAM TOTAL**

**43**

**WeeklyWeekly**

**Class    Lab    Credit  
Hrs.    Hrs.    Hrs.**

**First Semester (Fall)**

ACA	115	First-Year Seminar	0	2	1
AHR	112	Heating	2	4	4
AHR	120	HVACR Maintenance	1	3	2
ELC	111	Introduction to Electricity	2	2	3
ELC	132	Electrical Drawings	1	3	2
ENG	111	Expository Writing (or ENG 102)	3	0	3
PHY	122	Applied Physics II	3	2	4
			<b>12</b>	<b>16</b>	<b>19</b>

		<b>Second Semester (Spring)</b>			
Engineering and Applied Technology	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 111	Oxy-Fuel Welding	1	3	2
		<b>8</b>	<b>18</b>	<b>16</b>	
		<b>Third Semester (Summer)</b>			
	AHR 114	Heat Pump Technology	2	4	4
	AHR 115	Refrigeration Systems	1	3	2
	BPR 135	Schematics and Diagrams	2	0	2
		<b>5</b>	<b>7</b>	<b>8</b>	
<b>Program Totals</b>		<b>25</b>	<b>41</b>	<b>43</b>	

*The Associate in Applied Science Degree program may be taken in the evening upon completion of day or evening Diploma program.*

## **Air Conditioning, Heating and Refrigeration Technology – Diploma – Evening Schedule**

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>					
	ACA 115	First-Year Seminar	0	2	1
	AHR 112	Heating Technology	2	4	4
	ELC 111	Introduction to Electricity	2	2	3
		<b>4</b>	<b>8</b>	<b>8</b>	
<b>Second Semester (Spring)</b>					
	AHR 120	HVACR Maintenance	1	3	2
	AHR 130	HVAC Controls	2	2	3
	ELC 132	Electrical Drawings	1	3	2
	WLD 112	Basic Welding Processes	1	3	2
		<b>5</b>	<b>11</b>	<b>9</b>	
<b>Third Semester (Summer)</b>					
	AHR 110	Introduction to Refrigeration	2	6	5
<b>Fourth Semester (Fall)</b>					
	AHR 113	Comfort Cooling	2	4	4
	AHR 125	HVAC Electronics	1	3	2
	BPR 135	Schematics and Diagrams	2	0	2
		<b>5</b>	<b>7</b>	<b>8</b>	
<b>Fifth Semester (Spring)</b>					
	AHR 115	Refrigeration Systems	1	3	2
	ENG 111	Expository Writing (or ENG 102)	3	0	3
	PHY 122	Applied Physics II	3	2	4
		<b>7</b>	<b>5</b>	<b>9</b>	
<b>Sixth Semester (Summer)</b>					
	AHR 114	Heat Pump Technology	2	4	4
<b>Program Totals</b>		<b>25</b>	<b>41</b>	<b>43</b>	

*The Associate in Applied Science Degree program may be taken in the evening upon completion of day or evening Diploma program.*

## Air Conditioning and Heating – Basic Certificate

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.

Engineering  
and Applied  
Technology

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
AHR	112	Heating	2	4	4
AHR	120	HVACR Maintenance	1	3	2
ELC	111	Introduction to Electricity	2	2	3
ELC	132	Electrical Drawings	<u>1</u>	<u>3</u>	<u>2</u>
			<b>6</b>	<b>12</b>	<b>11</b>
<b>Second Semester (Spring)</b>					
AHR	110	Introduction to Refrigeration	2	6	5
<b>Certificate Totals</b>			<b>8</b>	<b>18</b>	<b>16</b>

## Air Conditioning and Heating – Basic Certificate – Evening Schedule

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	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
AHR	112	Heating	2	4	4
ELC	111	Introduction to Electricity	<u>2</u>	<u>2</u>	<u>3</u>
			<b>4</b>	<b>6</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
AHR	120	HVACR Maintenance	1	3	2
ELC	132	Electrical Drawings	<u>1</u>	<u>3</u>	<u>2</u>
			<b>2</b>	<b>6</b>	<b>4</b>
<b>Third Semester (Summer)</b>					
AHR	110	Introduction to Refrigeration	2	6	5
<b>Program Totals</b>			<b>8</b>	<b>18</b>	<b>16</b>

## Air Conditioning and Heating – Intermediate Certificate

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	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
Engineering and Applied Technology	<b>Second Semester (Spring)</b>					
	AHR	113	Introduction to Cooling	2	4	4
	AHR	125	HVAC Electronics	1	3	2
	AHR	130	HVAC Controls	2	2	3
	WLD	111	Oxy-Fuel Welding	1	3	2
				<b>6</b>	<b>12</b>	<b>11</b>
	<b>Third Semester (Summer)</b>					
	AHR	115	Refrigeration Systems	1	3	2
	BPR	135	Schematics and Diagrams	2	0	2
				<b>3</b>	<b>3</b>	<b>4</b>
<b>Certificate Totals</b>			<b>9</b>	<b>15</b>	<b>15</b>	

## Air Conditioning and Heating – Intermediate Certificate – Evening Schedule

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 E.P.A.'s C.F.C. license will be covered, and the exam for this will be given during the program.

The Basic Air Conditioning and Heating program must be completed before beginning this program.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
WLD	111	Oxy-Fuel Welding	1	3	2
<b>Second Semester (Spring)</b>					
AHR	130	HVAC Controls	2	2	3
<b>Fourth Semester (Fall)</b>					
AHR	113	Introduction to Cooling	2	4	4
AHR	125	HVAC Electronics	1	3	2
BPR	135	Schematics and Diagrams	2	0	2
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>					
AHR	115	Refrigeration Systems	1	3	2
<b>Program Totals</b>			<b>9</b>	<b>15</b>	<b>15</b>

## Air Conditioning and Heating – Advanced Certificate – Evening Schedule

*(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.

Engineering  
and Applied  
Technology

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>Sixth Semester (Summer)</b>					
AHR	114	Heat Pump Technology	2	4	4
<b>Seventh Semester (Fall)</b>					
AHR	211	Residential Systems Design	2	2	3
CIS	111	Basic PC Literacy	1	2	2
			<b>3</b>	<b>4</b>	<b>5</b>
<b>Eighth Semester (Spring)</b>					
AHR	212A	Advanced Comfort Systems I	1	3	2
<b>Ninth Semester (Summer)</b>					
AHR	210	Residential Building Code-HVAC	1	2	2
<b>Tenth Semester (Fall)</b>					
AHR	212B	Advanced Comfort Systems II	1	3	2
<b>Program Totals</b>			<b>8</b>	<b>16</b>	<b>15</b>

## **Industrial HVAC Maintenance Technology Certificate – Evening Schedule**

A certificate in Industrial HVAC Maintenance Technology will prepare a student for a career in the maintenance departments of hospitals, education systems, hotels, and manufacturing plants. Local heating and cooling service companies that specialize in commercial and industrial maintenance will also have positions for technicians who have this certificate. This certificate requires completion of Air Conditioning and Heating Basic and Intermediate Certification as a prerequisite.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Summer)</b>					
AHR	114	Heat Pump Technology	2	2	4
<b>Second Semester (Spring)</b>					
AHR	212A	Advanced Comfort Systems Pt. 1	1	3	2
<b>Third Semester (Fall)</b>					
AHR	212B	Advanced Comfort Systems Pt. 2	1	3	2
CIS	111	Basic PC Literacy	1	2	2
			<b>2</b>	<b>5</b>	<b>4</b>
<b>Fourth Semester (Spring)</b>					
ELC	117	Motors and Controls	2	6	4
ELC	128	Introduction to PLC (or ELC 113)	2	3	3
			<b>4</b>	<b>9</b>	<b>7</b>
<b>Certificate Totals</b>			<b>9</b>	<b>19</b>	<b>17</b>

## 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

<b>This program consists of:</b>				<b>Credit Hrs.</b>		
<b>Major courses (AUT, COE prefix)</b>				<b>41</b>		
<b>Related and general education courses including:</b>				<b>25</b>		
	<i>English/Communications</i>		6			
	<i>Humanities/Fine Arts</i>		3			
	<i>Natural Science/Mathematics</i>		3			
	<i>Social Science</i>		3			
	<i>Other</i>		10			
<b>PROGRAM TOTAL</b>				<b>66</b>		
		<b>Weekly</b>	<b>Weekly</b>	<b>Weekly</b>		
		<b>Class</b>	<b>Lab</b>	<b>Work</b>		
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>		
				<b>Credit</b>		
				<b>Hrs.</b>		
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	0	1
AUT	110	Introduction to Automotive Technology	2	2	0	3
AUT	115	Engine Fundamentals	2	3	0	3
AUT	151	Brake Systems	2	2	0	3
AUT	152	Brake Systems Lab	0	2	0	1
AUT	161	Electrical Systems	2	6	0	4
			<b>8</b>	<b>17</b>	<b>0</b>	<b>15</b>
<b>Second Semester (Spring)</b>						
AUT	162A	Chassis Electrical/Electronics	1	1	0	1.5
AUT	163A	Chassis Electrical/Electronics Lab	0	1	0	0.5
AUT	183	Engine Performance Fuels	2	3	0	3
AUT	184	Engine Performance Fuels Lab	0	3	0	1
CIS	113	Computer Basics	0	2	0	1
COE	113A1	Co-op Work Experience II	0	0	15	1.5
ENG	111	Expository Writing	3	0	0	3
			<b>6</b>	<b>10</b>	<b>15</b>	<b>11.5</b>
<b>Third Semester (Summer)</b>						
COE	112A	Co-operative Work Experience	0	0	20	2

**Fourth Semester (Fall)**

AUT	162B	Chassis Electrical/Electronics	1	1	0	1.5
AUT	163B	Chassis Electrical/Electronics Lab	0	1	0	0.5
AUT	171	Heating and Air Conditioning Systems	2	3	0	3
COE	113A2	Co-operative Work Experience	0	0	15	1.5
COM	231	Public Speaking	3	0	0	3
			<b>6</b>	<b>5</b>	<b>15</b>	<b>9.5</b>

Engineering  
and Applied  
Technology

**Fifth Semester (Spring)**

AUT	141A	Suspension and Steering Systems	1	2	0	2
AUT	181	Engine Performance Electrical	2	3	0	3
AUT	182	Engine Performance Electronics Lab	0	3	0	1
COE	123A1	Co-operative Work Experience	0	0	15	1.5
HUM	115	Critical Thinking	3	0	0	3
			<b>6</b>	<b>8</b>	<b>15</b>	<b>10.5</b>

**Sixth Semester (Summer)**

AUT	141B	Suspension and Steering Systems	1	2	0	2
AUT	231	Manual Drive Trans/Axles	2	3	0	3
AUT	232	Manual Drive Trans/Axles Lab	0	3	0	1
MAT	121	Algebra/Trigonometry I (or PHY 122)	2	2	0	3
			<b>5</b>	<b>10</b>	<b>0</b>	<b>9</b>

**Seventh Semester (Fall)**

AUT	221	Automotive Transmissions	2	6	0	4
COE	123A2	Co-operative Work Experience	0	0	15	1.5
SOC	215	Group Processes	3	0	0	3
			<b>5</b>	<b>6</b>	<b>15</b>	<b>8.5</b>
<b>Program Totals</b>			<b>36</b>	<b>56</b>	<b>80</b>	<b>66</b>

## Automotive Systems Technology – Diploma\* – Evening Schedule

*(Evening Program Only)*

**This program consists of**

**Major courses (AUT, COE prefix)**

**Credit Hrs.**

**30**

**Related and general education courses  
including:**

**6**

*Communications*

3

*Natural Science/Mathematics*

3

**PROGRAM TOTAL**

**36**

**Weekly**

**Class Lab Credit  
Hrs. Hrs. Hrs.**

**First Semester (Fall)**

AUT	115	Engine Fundamentals	2	3	3
ENG	102	Applied Communications II (or ENG 111)	3	0	3
MAT	101	Applied Math I (or MAT 121 or PHY 122)	2	2	3
			<b>7</b>	<b>5</b>	<b>9</b>

**Second Semester (Spring)**

AUT	161	Electrical Systems	2	6	4
AUT	171	Heating and Air Conditioning	2	3	3
			<b>4</b>	<b>9</b>	<b>7</b>

**Third Semester (Summer)**

AUT	183	Engine Performance - Fuel	2	3	3
AUT	184	Engine Performance - Fuel Lab	0	3	1
			<b>2</b>	<b>6</b>	<b>4</b>

		<b>Fourth Semester (Fall)</b>			
Engineering and Applied Technology	AUT 151	Brakes	2	2	3
	AUT 152	Brake Systems Lab	0	2	1
	AUT 181A	Engine Performance - Electrical	1	1.5	1.5
	AUT 182A	Engine Performance - Electrical Lab	0	1.5	0.5
			<b>3</b>	<b>7</b>	<b>6</b>
		<b>Fifth Semester (Spring)</b>			
	AUT 141	Suspension and Steering	2	4	4
	AUT 181B	Engine Performance - Electrical	1	1.5	1.5
	AUT 182B	Engine Performance - Electrical Lab	0	1.5	0.5
			<b>3</b>	<b>7</b>	<b>6</b>
		<b>Sixth Semester (Summer)</b>			
	AUT 231	Manual Drive Trains/Axles	2	3	3
	AUT 232	Manual Drive Trains/Axles	0	3	1
			<b>2</b>	<b>6</b>	<b>4</b>
<b>Program Totals</b>			<b>21</b>	<b>40</b>	<b>36</b>

*\*Students may take Cooperative Work Experience, (COE 112A, COE 113A and COE 123A) during the day for transfer into the Degree program in Automotive Systems Technology.*

## Automotive Certificate

The Automotive Certificate offers state-of-the-art automotive training in the repair of all automobiles. You will learn about the internal combustion engine, automotive fuel and electrical systems, chassis and suspension systems, braking systems, and automotive air conditioning and electronic control systems.

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>					
	AUT 115	Engine Fundamentals	2	3	3
	AUT 151	Brake Systems	2	2	3
	AUT 152	Brake Systems Lab	0	2	1
			<b>4</b>	<b>7</b>	<b>7</b>
<b>Second Semester (Fall)</b>					
	AUT 171	Heating and Air Conditioning Systems	2	3	3
<b>Third Semester (Spring)</b>					
	AUT 141	Suspension and Steering Systems	2	4	4
	AUT 181	Engine Performance Electrical	2	3	3
	AUT 182	Engine Performance Electrical Lab	0	3	1
			<b>4</b>	<b>10</b>	<b>8</b>
<b>Certificate Totals</b>			<b>10</b>	<b>20</b>	<b>18</b>

## 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

This program consists of:

Major courses (CAB, CAR prefix)

Related and general education courses

including:

*English/Communications*

*Natural Science/Mathematics*

*Other*

**PROGRAM TOTAL**

**Credit Hrs.**

**34**

**12**

**46**

Engineering

and Applied

Technology

**WeeklyWeekly**

**Class Lab Credit  
Hrs. Hrs. 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
DFT	115	Architectural Drafting	1	2	2
MAT	101	Applied Mathematics I or PHY 122, MAT 121	2	2	3

**9 21 17**

### Second Semester (Spring)

CAR	112	Carpentry II	3	15	8
ENG	102	Applied Communications I or ENG 111	3	0	3
CAB	111A	Cabinetmaking I	4	3	5

**10 18 16**

### Third Semester (Fall)

CAR	113	Carpentry III	3	9	6
CAB	111B	Cabinetmaking I	0	6	2
CAR	115	Residential Planning/Estimating	3	0	3
DFT	115	Architectural Drafting	1	2	2

**7 17 13**

**Program Totals**

**26 56 46**

## Carpentry – Diploma – Evening Schedule

*(Begins in odd years only)*

**WeeklyWeekly**

**Class Lab Credit  
Hrs. Hrs. Hrs.**

### First Semester (Fall)

CAR	110A	Introduction to Carpentry	1	0	1
CAR	111A	Carpentry I	2	12	4
BPR	130	Blueprint Reading/Construction	1	2	2

**4 14 7**

### Second Semester (Spring)

CAR	111B	Carpentry I	1	9	4
CAB	111A	Cabinetmaking I	4	3	5

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	<b>Third Semester (Summer)</b>					
	ENG 102	Applied Communication I or ENG 111	3	0	3	
Engineering	MAT 101	Applied Mathematics I or PHY 122, MAT 121	2	2	3	
and Applied			<b>5</b>	<b>2</b>	<b>6</b>	
Technology	<b>Fourth Semester (Fall)</b>					
	CAR 110B	Introduction to Carpentry	1	0	1	
	CAR 112A	Carpentry II	2	3	3	
	CAB 111B	Cabinetmaking I	0	6	2	
			<b>3</b>	<b>9</b>	<b>6</b>	
	<b>Fifth Semester (Spring)</b>					
	CAR 112B	Carpentry II	1	12	5	
	CAR 115	Residential Planning and Estimating	3	0	3	
			<b>4</b>	<b>12</b>	<b>8</b>	
	<b>Sixth Semester (Summer)</b>					
	DFT 115	Architectural Drafting	1	2	2	
	DFT 119	Basic CAD	1	2	2	
			<b>2</b>	<b>4</b>	<b>4</b>	
	<b>Seventh Semester (Fall)</b>					
	CAR 113	Carpentry III	3	9	6	
	<b>Program Totals</b>		<b>26</b>	<b>62</b>	<b>46</b>	

## 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

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (CIV, SRV prefix)</b>		<b>44</b>
<b>Related and general education courses</b>		<b>30</b>
<b>including:</b>		
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Science/Mathematics</i>	10	
<i>Social Science</i>	3	
<i>Other</i>	8	
<b>PROGRAM TOTAL</b>		<b>74</b>

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
<b>First Semester (Fall)</b>						
EGR	110	Introduction to Engineering	2	0	2	Engineering
EGR	115	Introduction to Engineering Technology	2	3	3	and Applied
EGR	115A	Intro to Technology Lab	0	3	1	Technology
EGR	125	Application Software for Technology	1	2	2	
ENG	111	Expository Writing	3	0	3	
MAT	121	Algebra/Trigonometry I (or MAT171 & 171A)	2	2	3	
			<b>10</b>	<b>10</b>	<b>14</b>	
<b>Second Semester (Spring)</b>						
CIV	110	Statics/Strength of Materials	2	6	4	
ENG	114	Professional Research and Reporting	3	0	3	
MAT	122	Algebra/Trigonometry II (or MAT172 & 172A)	2	2	3	
PHY	131	Physics-Mechanics	3	2	4	
SRV	110	Surveying I	2	6	4	
			<b>12</b>	<b>16</b>	<b>18</b>	
<b>Third Semester (Summer)</b>						
CIV	125	Civil/Surveying CAD	1	6	3	
CIV	211	Hydraulics and Hydrology	2	3	3	
SRV	111	Surveying II	2	6	4	
			<b>5</b>	<b>15</b>	<b>10</b>	
<b>Fourth Semester (Fall)</b>						
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	
		Social/Behavioral Sciences Elective	3	0	3	
			<b>10</b>	<b>15</b>	<b>15</b>	
<b>Fifth Semester (Spring)</b>						
CIV	212	Environmental Planning	2	3	3	
CIV	221	Steel and Timber Design	2	3	3	
CIV	222	Reinforced Concrete	2	3	3	
CIV	240	Project Management	2	3	3	
CIV	250	Civil Engineering Technology Project	1	3	2	
		Humanities/Fine Arts Elective	3	0	3	
			<b>12</b>	<b>15</b>	<b>17</b>	
<b>Program Totals</b>			<b>49</b>	<b>71</b>	<b>74</b>	

# Civil Engineering Technology – Associate in Applied Science Degree – Evening Schedule

*(Begins in odd years only)*

Engineering  
and Applied  
Technology

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
EGR	115	Introduction to Engineering Technology	2	3	3
EGR	115A	Intro to Technology Lab	0	3	1
EGR	125	Application Software for Tech	1	2	2
MAT	121	Algebra/Trigonometry I (or MAT 171/171 A)	2	2	3
			<b>5</b>	<b>10</b>	<b>9</b>
<b>Second Semester (Spring)</b>					
EGR	110	Introduction to Engineering	2	0	2
ENG	111	Expository Writing	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT 172/172 A)	2	2	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
SRV	110	Surveying I	2	6	4
<b>Fourth Semester (Fall)</b>					
CIV	110	Statics/Strength of Materials	2	6	4
SRV	111	Surveying II	2	6	4
			<b>4</b>	<b>12</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>					
CIV	111	Soils and Foundations	2	3	3
CIV	210	Engineering Materials	1	3	2
ENG	114	Project Research and Reporting	3	0	3
			<b>6</b>	<b>6</b>	<b>8</b>
<b>Sixth Semester (Summer)</b>					
CIV	211	Hydraulics and Hydrology	2	3	3
PHY	131	Physics - Mechanics	3	2	4
			<b>5</b>	<b>5</b>	<b>7</b>
<b>Seventh Semester (Fall)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
CIV	215	Highway Technology	1	3	2
CIV	220	Basic Structure Concepts	1	3	2
			<b>3</b>	<b>12</b>	<b>7</b>
<b>Eighth Semester (Spring)</b>					
CIV	212	Environmental Planning	2	3	3
CIV	221	Steel and Timber Design	2	3	3
CIV	230	Construction Estimates	2	3	3
			<b>6</b>	<b>9</b>	<b>9</b>
<b>Ninth Semester (Summer)</b>					
CIV	240	Project Management	2	3	3
CIV	250	Civil Engineering Technology Project	1	3	2
			<b>3</b>	<b>6</b>	<b>5</b>

**Tenth Semester (Fall)**

CIV	222	Reinforced Concrete	2	3	3
		Humanities/Fine Arts Elective	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>
<b>Program Totals</b>			<b>49</b>	<b>71</b>	<b>74</b>

Engineering

and Applied

Technology

**Computer-Aided Drafting Technology**

The Computer-Aided Drafting (CAD) Technology curriculum will prepare individuals for careers as CAD technicians in a wide variety of applications, primarily those related to architecture and construction. Emphasis is placed on developing the student's ability to interface with computer hardware and software in a CAD office.

Students will use CAD work stations to create and manage 2D drawings and 3D models for a wide variety of fields. Students will also link CAD documents to other applications such as a database, GIS maps, spreadsheets, and word processing. Course work includes the study of drafting, computer hardware and operating systems, 2D and 3D computer models, solid modeling, rendering, and engineering systems for construction and architecture.

Graduates of this program will 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/designer and detail drafter.

**Computer-Aided Drafting Technology – Associate in Applied Science Degree**

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (DFT, DDF Prefix)</b>		<b>21</b>
<b>Related and general education courses including:</b>		<b>51</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Science/Mathematics</i>	3	
<i>Social Science</i>	3	
<i>Other</i>	36	
<b>PROGRAM TOTAL</b>		<b>72</b>

<b>Weekly</b>		
<b>Class</b>	<b>Lab</b>	<b>Credit</b>
<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>

**First Semester (Fall)**

ACA	115	Freshman Seminar	0	2	1
ARC	111	Intro to Architecture Technology	1	6	3
BPR	111	Blueprint Reading	1	2	2
CIS	110	Introduction to Computers	2	2	3
DFT	151	CAD I	2	3	3
MAC	114	Introduction to Metrology or MEC 161	2	0	2
			<b>8</b>	<b>15</b>	<b>14</b>

		<b>Second Semester (Spring)</b>			
Engineering and Applied Technology	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 or MAT 171/171A	3	2	4
		<b>11</b>	<b>16</b>	<b>17</b>	
		<b>Third Semester (Summer)</b>			
	BPR 121	Blueprint Reading: Mechanical	1	2	2
	DFT 153	CAD III	2	3	3
	DFT 192	Selected Topics in CAD (as a Technical Elective*)	1	2	2
	ENG 111	Expository Writing	3	0	3
		<b>7</b>	<b>7</b>	<b>10</b>	
		<b>Fourth Semester (Fall)</b>			
	ARC 230	Environmental Systems	3	3	4
	CIS 152	Database Concepts and Applications	2	2	3
	DFT 251	Customizing CAD Software	2	2	3
	DFT 252	Solid Models and Rendering	2	3	4
		Humanities/Fine Arts Elective	3	0	3
		<b>12</b>	<b>10</b>	<b>17</b>	
		<b>Fifth Semester (Spring)</b>			
	COM 231	Public Speaking or ENG 114	3	0	3
	DFT 253	CAD Data Management	2	2	3
	EGR 285	Design Project	0	4	2
	MEC 110	Introduction to CAD/CAM	1	2	2
		Sociology Elective	3	0	3
		Technical Elective*	0-3	0-6	1-3
		<b>9-12</b>	<b>8-14</b>	<b>14-16</b>	
<b>Program Totals</b>		<b>47-50</b>	<b>56-62</b>	<b>72-74*</b>	

\*Total Program Credit Hours includes four hours of electives to be selected from the following list. Technical Electives - 4 SHC selected from the following courses: ARC 119, ARC 131, ART 121, ART 171, BUS 230, CET 211, CIS 115, COE 111CA, and DFT 192.

## Computer-Aided Drafting Technology – Associate in Applied Science Degree – Evening Schedule

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>					
	ACA 115	Freshman Seminar	0	2	1
	ARC 111	Intro to Architecture Technology	1	6	3
	CIS 110	Introduction to Computers	2	2	3
		<b>3</b>	<b>10</b>	<b>7</b>	
<b>Second Semester (Spring)</b>					
	BPR 111	Blueprint Reading	1	2	2
	DFT 151	CAD I	2	3	3
	MAC 114	Introduction to Metrology or MEC 161	2	0	2
		<b>5</b>	<b>5</b>	<b>7</b>	

**Third Semester (Summer)**

CET	111	Computer Upgrade/Repair I	2	3	3
BPR	121	Blueprint Reading: Mechanical	1	2	2
ENG	111	Expository Writing	3	0	3
			<b>6</b>	<b>5</b>	<b>8</b>

**Fourth Semester (Fall)**

ARC	112	Construction Materials and Methods	3	2	4
DFT	152	CAD II	2	3	3
			<b>5</b>	<b>5</b>	<b>7</b>

**Fifth Semester (Spring)**

ARC	113	Residential Architecture Technology	1	6	3
		MAT 121 or MAT 171/171A	3	2	4
			<b>4</b>	<b>8</b>	<b>7</b>

**Sixth Semester (Summer)**

DFT	153	CAD III	2	3	3
DFT	192	Selected Topics in CAD (as a Technical Elective*)	1	2	2
			<b>3</b>	<b>5</b>	<b>5</b>

**Seventh Semester (Fall)**

ARC	230	Environmental Systems	3	3	4
DFT	251	Customizing CAD Software Humanities/Fine Arts Elective	2	2	3
			3	0	3
			<b>8</b>	<b>5</b>	<b>10</b>

**Eighth Semester (Spring)**

CIS	152	Database Concepts and Applications	2	2	3
DDF	252	Solid Models and Rendering Technical Elective*	2	3	4
			0-3	0-6	1-3
			<b>4-7</b>	<b>5-11</b>	<b>8-10</b>

**Ninth Semester (Summer)**

COM	231	Public Speaking or ENG 114	3	0	3
DFT	253	CAD Data Management	2	2	3
			<b>5</b>	<b>2</b>	<b>6</b>

**Tenth Semester (Fall)**

EGR	285	Design Project	0	4	2
MEC	110	Introduction to CAD/CAM Social Science Elective	1	2	2
			3	0	3
			<b>4</b>	<b>6</b>	<b>7</b>

**Program Totals****47-50 56-72 72-74\***

*\*Total Program Credit Hours includes four hours of electives to be selected from the following list. Technical Electives - 4 SHC selected from the following courses: ARC 119, ARC 131, ART 121, ART 171, BUS 230, CET 211, CIS 115, COE 111CA, and DFT 192.*

**Computer-Aided Drafting Certificate**

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. Students may choose the fourth CAD course from the following options.

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
Engineering and Applied Technology	<b>First Semester (Fall)</b>					
	DFT	151	CAD I	2	3	3
	<b>Second Semester (Spring)</b>					
	DFT	152	CAD II	2	3	3
	<b>Third Semester (Summer)</b>					
	DFT	153	CAD III	2	3	3
	<b>Fourth Semester (Fall)</b>					
	DFT	251	Customizing CAD Software	2	2	3
			or DDF 252 Solid Models/Rendering	(2	3	4)
				<b>2</b>	<b>2(3)</b>	<b>3(4)</b>
	<b>Certificate Totals</b>			<b>8</b>	<b>11(12)</b>	<b>12(13)</b>

## Computer Engineering Technology

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

This program consists of:		Credit Hrs.
<b>Major courses (CET, CIS, CSC, EGR, ELC, ELN prefix)</b>		<b>54</b>
<b>Related and general education courses including:</b>		<b>22</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Science/Mathematics</i>	10	
<i>Social Science</i>	3	
<i>Other</i>	0	
<b>PROGRAM TOTAL</b>		<b>76</b>

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
EGR	125	Application Software for Technology	1	2	2
EGR	110	Introduction to Engineering	2	0	2
ELC	131	DC/AC Circuit Analysis	4	3	5
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (MAT 171 & 171A)	2	2	3
			<b>14</b>	<b>10</b>	<b>18</b>

**Second Semester (Spring)**

CET	211	Computer Upgrade/Repair II	2	3	3
CIS	115	Introduction to Programming and Logic	2	2	3
ELN	131	Electrical Devices	3	3	4
MAT	122	Algebra/Trigonometry II (MAT 172 & 172A)	2	2	3
HUM		Humanities Electives	3	0	3
			<b>12</b>	<b>10</b>	<b>16</b>

Engineering  
and Applied  
Technology

**Third Semester (Summer)**

ELC	117	Motors and Controls	2	6	4
ELN	237	Local Area Networks (1st Mini-mester)	2	3	3
ELN	238	Advanced LANs (2nd Mini-mester)	2	3	3
PHY	131	Physics-Mechanics (PHY 151)	3	2	4
			<b>9</b>	<b>14</b>	<b>14</b>

**Fourth Semester (Fall)**

CSC	139	Visual Basic Programming	2	3	3
ELC	128	Introduction to PLCs	2	3	3
ELN	133	Digital Electronics	3	3	4
ELN	154	Introduction to Data Communications	2	3	3
			<b>9</b>	<b>12</b>	<b>13</b>

**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
		Social/Behavioral Science Elective	3	0	3
			<b>10</b>	<b>6</b>	<b>12</b>

**Program Totals**

**54    52    76\***

*\*The credit hours total includes a minimum of three credit hours to be selected from the following: ELC 213, ELC 228, MAT 151, MAT 271, PHY 152.*

## Computer Engineering Technology – Associate in Applied Science Degree – Evening Schedule

			Weekly	Weekly	Weekly
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
EGR	110	Introduction to Engineering	2	0	2
MAT	121	Algebra/Trigonometry I (MAT 171 & 171A)	2	2	3
			<b>6</b>	<b>5</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
CET	211	Computer Upgrade/Repair II	2	3	3
ELC	131	DC/AC Circuit Analysis	4	3	5
MAT	122	Algebra/Trigonometry II (MAT 172 & 172A)	2	2	3
			<b>8</b>	<b>8</b>	<b>11</b>
<b>Third Semester (Summer)</b>					
ELN	131	Electronic Devices	3	3	4
ENG	111	Expository Writing	3	0	3
PHY	131	Physics-Mechanics (PHY 151)	3	2	4
			<b>9</b>	<b>5</b>	<b>11</b>

		<b>Fourth Semester (Fall)</b>			
Engineering	EGR 125	Application Software for Technology	1	2	2
	CIS 115	Introduction to Programming and Logic	2	2	3
	ELN 237	Local Area Networks	2	3	3
			<b>5</b>	<b>7</b>	<b>8</b>
		<b>Fifth Semester (Spring)</b>			
and Applied	ELN 133	Digital Electronics	3	3	4
	ELN 238	Advanced LANs	2	3	3
			<b>5</b>	<b>6</b>	<b>7</b>
		<b>Sixth Semester (Summer)</b>			
Technology	CSC 139	Visual BASIC Programming	2	3	3
		Humanities Elective	3	0	3
		Social/Behaviorial Science Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>
		<b>Seventh Semester (Fall)</b>			
	ELC 117	Motors and Controls	2	6	4
	ELN 154	Introduction to Data Communications	2	3	3
			<b>4</b>	<b>9</b>	<b>7</b>
		<b>Eighth Semester (Spring)</b>			
	ELC 128	Introduction to PLC	2	3	3
	ELN 232	Introduction to Microprocessors	3	3	4
			<b>5</b>	<b>6</b>	<b>7</b>
		<b>Ninth Semester (Summer)</b>			
	CET 212	Integrated Manufacturing Systems	1	3	2
	ENG 114	Professional Research and Report Writing	3	0	3
			<b>4</b>	<b>3</b>	<b>5</b>
		<b>Program Totals</b>	<b>54</b>	<b>52</b>	<b>76*</b>

\*The credit hours total includes a minimum of three credit hours to be selected from the following: ELC 213, ELC 228, MAT 151, MAT 271, PHY 152.

## Personal Computer and Network Maintenance Certificate

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.

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
		<b>First Semester (Fall)</b>			
	CET 111	Computer Upgrade/Repair I	2	3	3
		<b>Second Semester (Spring)</b>			
	CET 211	Computer Upgrade/Repair II	2	3	3

**Third Semester (Summer)**

ELN 237	Local Area Networks (1st Mini-mester)	2	3	3
ELN 238	Advanced LANs (2nd Mini-mester)	2	3	3
<b>Certificate Totals</b>		<b>4</b>	<b>6</b>	<b>6</b>
		<b>8</b>	<b>12</b>	<b>12</b>

Engineering  
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Technology

## Personal Computer and Network Maintenance Certificate – Evening Schedule

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. The program combines the theory of computer and networking 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.

		<b>Weekly</b>	<b>Weekly</b>	
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>				
CET 111	Computer Upgrade/Repair I	2	3	3
<b>Second Semester (Spring)</b>				
CET 211	Computer Upgrade/Repair II	2	3	3
<b>Third Semester (Summer)</b>				
ELN 237	Local Area Networks	2	3	3
<b>Fourth Semester (Spring)</b>				
ELN 238	Advanced LANs	2	3	3
<b>Program Totals</b>		<b>8</b>	<b>12</b>	<b>12</b>

## 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.



**Ninth Semester (Summer)**

COE 111CM	Co-op Work Experience	0	0	10	1
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**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	2	0	3
		<b>10</b>	<b>4</b>	<b>0</b>	<b>10</b>

Engineering  
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**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	Algebra/Trigonometry I)	(2)	(2)	(0)	(3)
(or MAT 171	Precalculus Algebra)	(3)	(0)	(0)	(3)
		<b>8-9</b>	<b>0-2</b>	<b>0</b>	<b>9</b>

Estimation/Code Electives:

Students must take one course selected from: AHR 210, CAR 114, ARC 131, and ELC 118 (PLU 140 taken at another institution in the North Carolina Community College System will be accepted).

And either:

CAR 115 or ELC 121 (PLU 160 taken at another institution in the North Carolina Community College System will be accepted).

Technical Electives:

12-17 Semester Hours Credit selected from one of the following areas of specialization:

AHR 110, AHR 111, AHR 112, AHR 113, AHR 114, AHR 115, AHR 120, AHR 125, AHR 130

or

CAR 110, CAR 111, CAR 112, CAR 113

or

EGR 115, CIV 110, CIV 125, CIV 211, SRV 110

or

ELC 112 or ELC 113, ELC 115, ELC 117, ELC 119, ELC 128, ELC 132, ELC 213, ELC 127

or

WLD 111, WLD 112, WLD 115, WLD 116, WLD 141, WLD 215

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.

\* Unless approved by the department chairperson, students can select courses from only one specialty area.

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.

## Construction Management Technology – Certificate – Evening Schedule

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. These courses may be counted toward the Carolina's Association of General Contractor's Project SUPERVISION® certification.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CMT	210	Professional Construction Supervision	3	0	3
CMT	214	Planning and Scheduling	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>
<b>Second Semester (Spring)</b>					
BPR	130	Blueprint Reading/Construction	1	2	2
CMT	212	Total Safety Performance	3	0	3
CMT	216	Costs and Productivity	3	0	3
CMT	218	Human Relations Issues	3	0	3
			<b>10</b>	<b>2</b>	<b>11</b>
<b>Certificate Totals</b>			<b>16</b>	<b>2</b>	<b>17</b>

## 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

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (ELC, ELN prefix)</b>	<b>42</b>
<b>Related and general education courses including:</b>	<b>29</b>
<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	10
<i>Social Science</i>	3
<i>Other</i>	7
<b>PROGRAM TOTAL</b>	<b>71</b>

			Weekly	Weekly	
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
EGR	110	Introduction to Engineering	2	0	2
ELN	152	Fabrication Techniques	1	3	2
MAT	121	Algebra/Trigonometry	2	2	3
			<b>5</b>	<b>5</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
ELC	112	DC/AC Electricity	3	6	5
		MAT 122	2	2	3
		or Natural/Science Mathematics Elective			
			<b>5</b>	<b>8</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
ELN	131	Electronic Devices	3	3	4
PHY	131	Physics-Mechanics	3	2	4
			<b>6</b>	<b>5</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>					
EGR	125	Application Software for Tech	1	2	2
ELC	113	Basic Wiring I	2	6	4
ENG	111	Expository Writing	3	0	3
			<b>6</b>	<b>8</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
ELC	115	Industrial Wiring	2	6	4
ENG	114	Professional Research and Report Writing	3	0	3
			<b>5</b>	<b>6</b>	<b>7</b>
<b>Sixth Semester (Summer)</b>					
ELC	118	National Electrical Code	1	2	2
ELC	213	Instrumentation	3	2	4
HYD	110	Hydraulics/Pneumatics	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Seventh Semester (Fall)</b>					
ELC	117	Motors and Controls	2	6	4
		Social Science Elective	3	0	3
		Humanities Elective	3	0	3
			<b>8</b>	<b>6</b>	<b>10</b>
<b>Eight Semester (Spring)</b>					
ELC	128	Introduction to PLC	2	3	3
ELN	133	Digital Electronics	3	3	4
			<b>5</b>	<b>6</b>	<b>7</b>
<b>Ninth Semester (Summer)</b>					
ELC	228	PLC Applications	2	6	4
ELC	229	Application Project	1	3	2
			<b>3</b>	<b>9</b>	<b>6</b>
<b>Program Totals</b>			<b>49</b>	<b>59</b>	<b>71</b>

Engineering  
and Applied  
Technology

*Refer to applicable sections of this catalog for courses available for Natural Science/Mathematics, Social Science and Humanities Requirements.*

*\*All courses except ELC 113, 115 and 118 are offered day and evening.*

# Electrical/Electronics Technology – Diploma – Evening Schedule

*(Evening Program Only)*

Engineering  
and Applied  
Technology

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (ELC, ELN prefix)</b>	<b>28</b>
<b>Related and general education courses including:</b>	<b>11</b>
<i>Communications</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Other</i>	5
<b>PROGRAM TOTAL</b>	<b>39</b>

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ELN	152	Fabrication Techniques	1	3	2
ENG	102	Applied Communications II (or ENG 111)*	3	0	3
MAT	101	Applied Mathematics I (or MAT 121)*	2	2	3
			<b>6</b>	<b>5</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ELC	112	DC/AC Electricity (or ELC 131)*	3	6	5
EGR	125	Application Software for Tech	1	2	2
			<b>4</b>	<b>8</b>	<b>7</b>
<b>Third Semester (Summer)</b>					
HYD	110	Hydraulics/Pneumatics I	2	3	3
<b>Fourth Semester (Fall)</b>					
ELC	113	Basic Wiring I	2	6	4
ELC	117	Motors and Controls	2	6	4
			<b>4</b>	<b>12</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>					
ELC	115	Industrial Wiring	2	6	4
ELC	128	Introduction to PLC	2	3	3
			<b>4</b>	<b>9</b>	<b>7</b>
<b>Sixth Semester (Summer)</b>					
ELC	118	National Electrical Code	1	2	2
ELC	213	Instrumentation	3	2	4
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Program Totals</b>			<b>24</b>	<b>41</b>	<b>39</b>

\*Students wishing to continue into the A.A.S. degree program should take these courses.

\*\*All courses except ELC 113, ELC 115 and ELC 119 are offered during the day.

## Electronics Engineering Technology

The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, trouble-shoot, 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.

Engineering  
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Technology

## Electronics Engineering Technology – Associate in Applied Science Degree

This program consists of:

Major courses (ELC, ELN prefix)

Credit Hrs.

36

Related and general education courses including:

36

<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	10
<i>Social Science</i>	3
<i>Other</i>	10
<i>Electives</i>	4

**PROGRAM TOTAL**

**72**

**Weekly**

**Class Lab Credit**

**Hrs. Hrs. Hrs.**

### First Semester (Fall)

CET 111	Computer Upgrade/Repair I	2	3	3
ELC 131	DC/AC Circuit Analysis	4	3	5
EGR 110	Introduction to Engineering Technology	2	0	2
ENG 111	Expository Writing	3	0	3
MAT 121	Algebra/Trigonometry I (or MAT171 & 171A)	2	2	3
		<b>13</b>	<b>8</b>	<b>16</b>

### Second Semester (Spring)

DFT 151	CAD I	2	3	3
EGR 125	Application Software for Tech	1	2	2
ELN 131	Electronic Devices	3	3	4
ELN 152	Fabrication Techniques	1	3	2
MAT 122	Algebra/Trigonometry II (or MAT172 & 172A)	2	2	3
		<b>9</b>	<b>13</b>	<b>14</b>

### Third Semester (Summer)

ELC 117	Motors and Controls	2	6	4
ELN 132	Linear IC Applications	3	3	4
PHY 131	Physics-Mechanics (or PHY 151)	3	2	4
	Humanities Elective	3	0	3
		<b>11</b>	<b>11</b>	<b>15</b>

### Fourth Semester (Fall)

ELC 128	Introduction to PLC	2	3	3
ELN 133	Digital Electronics	3	3	4
ELN 234	Communications Systems	3	3	4
ENG 114	Professional Research and Report Writing	3	0	3
		<b>11</b>	<b>9</b>	<b>14</b>

**Fifth Semester (Spring)**

ELN 232	Introduction to Microprocessors	3	3	4
ELN 275	Troubleshooting	1	2	2
	Social/Behaviorial Science Elective	3	0	3

Engineering  
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**7 5 9**
**Program Totals**


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**51 46 72\***

*\*The credit hours total includes a minimum of four credit hours of major electives to be selected from the following: CET 211, CET 212, CHM 121/121A, CIS 115, CIS 152, DFT 152, DFT 153, ELC 113, ELC 115, ELC 118, ELC 131A, ELC 213, ELC 228, ELC 229, ELN 237, HYD 110, MAT 151, MAT 151A, MAT 271, MEC 161 (with 161A), MEC 250, PHY 152.*

## Electronics Engineering Technology – Associate in Applied Science Degree – Evening Schedule

**Weekly**

Class Hrs.	Lab Hrs.	Credit Hrs.
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**First Semester (Fall)**

EGR 110	Introduction to Engineering Technology	2	0	2
ELN 152	Fabrication Techniques	1	3	2
MAT 121	Algebra/Trigonometry I (or MAT 171& 171A)	2	2	3
		<b>5</b>	<b>5</b>	<b>7</b>

**Second Semester (Spring)**

ELC 131	DC/AC Circuit Analysis	4	3	5
MAT 122	Algebra/Trigonometry II (or MAT 172 & 172A)	2	2	3
		<b>6</b>	<b>5</b>	<b>8</b>

**Third Semester (Summer)**

CET 111	Computer Upgrade/Repair I	2	3	3
ELN 131	Electronic Devices	3	3	4
ENG 111	Expository Writing	3	0	3
		<b>8</b>	<b>6</b>	<b>10</b>

**Fourth Semester (Fall)**

ELN 132	Linear IC Applications	3	3	4
PHY 131	Physics - Mechanics (or PHY 151)	3	2	4
		<b>6</b>	<b>5</b>	<b>8</b>

**Fifth Semester (Spring)**

DFT 151	CAD I	2	3	3
EGR 125	Application Software for Tech	1	2	2
ELN 133	Digital Electronics	3	3	4
		<b>6</b>	<b>8</b>	<b>9</b>

**Sixth Semester (Summer)**

ELN 234	Communication Systems	3	3	4
	Social/Behaviorial Science Elective	3	0	3
		<b>6</b>	<b>3</b>	<b>7</b>

**Seventh Semester (Fall)**

ELC 117	Motors and Controls	2	6	4
ELC 128	Introduction to PLC	2	3	3
		<b>4</b>	<b>9</b>	<b>7</b>

**Eighth Semester (Spring)**

ELN	232	Introduction to Microprocessors	3	3	4
ENG	114	Professional Research and Report Writing	3	0	3
			<b>6</b>	<b>3</b>	<b>7</b>

**Ninth Semester (Summer)**

ELN	275	Troubleshooting	1	2	2
		Humanities Elective	3	0	3
			<b>4</b>	<b>2</b>	<b>5</b>

**Program Totals**

			<b>51</b>	<b>46</b>	<b>72*</b>
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\*Includes a minimum of four hours of major electives to be selected from: CET 211, CET 212, CHM 121/121A, CIS 111, CIS 115, CIS 152, DFT 152, DFT 153, ELC 113, ELC 115, ELC 118, ELC 213, ELC 228, ELC 229, ELC 131 A, ELN 237, HYD 110, MAT 151, MAT 151A, MAT 271, MEC 161 (with 161A), MEC 250, PHY 152.

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**Heavy Equipment and Transport Technology**

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 – Associate in Applied Science – Evening Schedule**

(Evening Only Program)

To be taken after completion of Diploma (day) program

**This program consists of**

**Major courses (HET, COE)**

**Related and general education courses**

**including:**

<i>English/Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Social Sciences</i>	3
<i>Other</i>	13

**PROGRAM TOTAL**

**Credit Hrs.**

**40**

**25**

**65**

**WeeklyWeeklyWeekly**

<b>Class</b>	<b>Lab</b>	<b>Work</b>	<b>Credit</b>
<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>

**First Semester (Fall)**

ACA	115	First-Year Seminar	0	2	0	1
HET	110	Engines	3	9	0	6
HET	118	Mechanical Orientation	2	0	0	2
HET	125	Preventative Maintenance	1	3	0	2
HYD	112	Hydraulics Medium/Heavy Duty	1	2	0	2
MAT	101	Applied Mathematics I (or PHY 122)	2	2	0	3
			<b>9</b>	<b>18</b>	<b>0</b>	<b>16</b>

		<b>Second Semester (Spring)</b>				
Engineering and Applied Technology	ENG 111	Expository Writing	3	0	0	3
	HET 112	Diesel Electrical System	3	6	0	5
	HET 115	Electronic Engines	2	3	0	3
	HET 119	Mechanical Transmissions	2	2	0	3
	WLD 112	Basic Welding Processes	1	3	0	2
		<b>11</b>	<b>14</b>	<b>0</b>	<b>16</b>	
		<b>Third Semester (Summer)</b>				
	CIS 110	Intro to Computers	2	2	0	3
	HET 116	A/C/Diesel Equipment	1	2	0	2
	HET 231	Medium Heavy Duty Brake Systems	1	3	0	2
	HET 233	Suspension and Steering	2	4	0	4
	MAC 118	Machine Shop Basic	1	3	0	2
		<b>7</b>	<b>14</b>	<b>0</b>	<b>13</b>	
		<b>Fourth Semester (Fall)</b>				
	COE 112HE	Co-op Work Experience I	0	0	20	2
	HET 114A	Powertrains	2	3	0	3
	SOC 215	Group Processes	3	0	0	3
		<b>5</b>	<b>3</b>	<b>20</b>	<b>8</b>	
		<b>Fifth Semester (Spring)</b>				
	COE 122HE	Co-op Work Experience II	0	0	20	2
	COM 231	Public Speaking	3	0	0	3
	HET 114B	Powertrains	1	3	0	2
	HET 128	Medium/Heavy Duty Tune-Up	1	2	0	2
	HUM 115	Critical Thinking	3	0	0	3
		<b>8</b>	<b>5</b>	<b>20</b>	<b>12</b>	
<b>Program Totals</b>		<b>40</b>	<b>54</b>	<b>40</b>	<b>65</b>	

## Heavy Equipment and Transport Technology – Diploma

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (HET, HYD, WLD, MAC)</b>	<b>35</b>
<b>Related and general education courses including:</b>	<b>10</b>
<i>English/Communications</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Other</i>	4
<b>PROGRAM TOTAL</b>	<b>45</b>

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>					
	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
	MAT 101	Applied Mathematics I (or PHY 122)	2	2	3
		<b>9</b>	<b>18</b>	<b>16</b>	

**Second Semester (Spring)**

ENG	102	Applied Communications II (or ENG 111)	3	0	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
			<b>11</b>	<b>14</b>	<b>16</b>

Engineering  
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**Third Semester (Summer)**

CIS	110	Intro to Computers	2	2	3
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
			<b>5</b>	<b>14</b>	<b>11</b>
<b>Program Totals</b>			<b>27</b>	<b>46</b>	<b>45</b>

*The Associate in Applied Science Degree program may be taken in the evening upon completion of the day Diploma program.*

## Heavy Equipment and Transport Technology – Certificate

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
HET	110	Engines	3	9	6
HET	118	Mechanical Orientation	2	0	2
HET	125	Preventative Maintenance	1	3	2
			<b>6</b>	<b>12</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
HET	112	Diesel Electrical Systems	3	6	5
<b>Third Semester (Summer)</b>					
HET	231	Med/Heavy Brake Systems	1	3	2
<b>Program Totals</b>			<b>10</b>	<b>21</b>	<b>17</b>

## 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 – Day Schedule

Engineering and Applied Technology	<b>This program consists of:</b>					<b>Credit Hrs.</b>
	<b>Major courses (MAC prefix)</b>					<b>49</b>
	<b>Related and general education courses including:</b>					<b>25</b>
		<i>English/Communications</i>		6		
		<i>Humanities/Fine Arts</i>		3		
		<i>Natural Science/Mathematics</i>		3		
		<i>Social Science</i>		3		
		<i>Other</i>		10		
		<b>PROGRAM TOTAL</b>				<b>74</b>
				<b>Weekly</b>	<b>Weekly</b>	<b>Credit</b>
			<b>Class</b>	<b>Lab</b>	<b>Hrs.</b>	
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>						
ACA	115	Freshman 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	
			<b>9</b>	<b>18</b>	<b>16</b>	
<b>Second Semester (Spring)</b>						
BPR	121	Blueprint Reading II	1	2	2	
COM	231	Public Speaking or COM 120	3	0	3	
ENG	111	Expository Writing	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	
			<b>11</b>	<b>20</b>	<b>18</b>	
<b>Third Semester (Summer)</b>						
MAC	113	Machining Technology III	2	12	6	
MAC	152	Advanced Machining Calculations	1	2	2	
			<b>3</b>	<b>14</b>	<b>8</b>	
<b>Fourth Semester (Fall)</b>						
HUM	115	Critical Thinking	3	0	3	
MAC	226	CNC EDM Machining	1	3	2	
MAT	121	Algebra/Trigonometry or PHY 122	2	2	3	
MEC	231	CAM I	1	4	3	
			<b>7</b>	<b>9</b>	<b>11</b>	
<b>Fifth Semester (Spring)</b>						
MAC	224	Advanced CNC Milling	1	3	2	
MAC	245	Mold Construction I	2	6	4	
MAC	222	Advanced CNC Turning	1	3	2	
MAC	247	Production Tooling	2	0	2	
MEC	232	CAM II	1	4	3	
			<b>7</b>	<b>16</b>	<b>13</b>	

**Sixth Semester (Summer)**

MAC 241	Jigs and Fixtures I	2	6	4
MAC 246	Mold Construction II	2	6	4
		<b>4</b>	<b>12</b>	<b>8</b>
<b>Program Totals</b>		<b>39</b>	<b>89</b>	<b>74</b>

The credit hours total includes an elective chosen from either COE 112MA or MAC 229.

Engineering  
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## Machining Technology – Associate in Applied Science Degree – Evening Schedule

(Evening Only Program)

**This program consists of:**

**Major courses (MAC prefix)**

**Credit Hrs.**

**49**

**Related and general education courses including:**

**25**

<i>Communications</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	3
<i>Social Science</i>	3
<i>Other</i>	10

**PROGRAM TOTAL**

**74**

**WeeklyWeekly**

**Class Lab Credit  
Hrs. Hrs. Hrs.**

**First Semester (Fall)**

BPR 111	Blueprint Reading I	1	2	2
MAC 111A	Machining Technology I	1	6	3
MAC 151	Machining Calculations	1	2	2
		<b>3</b>	<b>10</b>	<b>7</b>

**Second Semester (Spring)**

BPR 121	Blueprint Reading II	1	2	2
COM 231	Public Speaking or COM 120	3	0	3
MAC 111B	Machining Technology I	1	6	3
		<b>5</b>	<b>8</b>	<b>8</b>

**Third Semester (Summer)**

ACA 115	First-Year Seminar	0	2	1
MAC 112A	Machining Technology II	1	4	2
MAC 121	Introduction to CNC	2	0	2
		<b>3</b>	<b>6</b>	<b>5</b>

**Fourth Semester (Fall)**

MAC 112B	Machining Technology II	1	8	4
MAC 124	CNC Milling	1	3	2
MAC 152	Advanced Machining Calculations	1	2	2
		<b>3</b>	<b>13</b>	<b>8</b>

**Fifth Semester (Spring)**

ENG 111	Expository Writing	3	0	3
MAC 113A	Machining Technology III	1	8	4
MAC 122	CNC Turning	1	3	2
		<b>5</b>	<b>11</b>	<b>9</b>

	<b>Sixth Semester (Summer)</b>					
	MAC 113B	Machining Technology III	1	4	2	
	SOC 215	Group Processes	3	0	3	
Engineering			<b>4</b>	<b>4</b>	<b>5</b>	
	<b>Seventh Semester (Fall)</b>					
and Applied	MAC 245	Mold Construction I	2	6	4	
Technology	<b>Eighth Semester (Spring)</b>					
	MAC 246	Mold Construction II	2	6	4	
	MAC 226	CNC EDM	1	3	2	
			<b>3</b>	<b>9</b>	<b>6</b>	
	<b>Ninth Semester (Summer)</b>					
	MAC 224	Advanced CNC Milling	1	3	2	
	<b>Tenth Semester (Fall)</b>					
	MAT 121	Algebra/Trigonometry (or PHY 122)	2	2	3	
	MEC 231	CAM I	1	4	3	
			<b>3</b>	<b>6</b>	<b>6</b>	
	<b>Eleventh Semester (Spring)</b>					
	MEC 232	CAM II	1	4	3	
		Humanities Elective	3	0	3	
			<b>4</b>	<b>4</b>	<b>6</b>	
	<b>Twelfth Semester (Summer)</b>					
	MAC 222	Advanced CNC Turning	1	3	2	
	MAC 241	Jigs and Fixtures I	2	6	4	
			<b>3</b>	<b>9</b>	<b>6</b>	
	<b>Program Totals</b>		<b>39</b>	<b>89</b>	<b>74</b>	

*The credit hours total includes an elective chosen from either COE 112MA or MAC 229.*

## Machining Technology – Diploma

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (MAC prefix)</b>		<b>26</b>
<b>Related and general education courses including:</b>		<b>16</b>
<i>English/Communications</i>	6	
<i>Social Science</i>	3	
<i>Other</i>	7	
<b>PROGRAM TOTAL</b>		<b>42</b>
	<b>Weekly</b>	<b>Weekly</b>
	<b>Class</b>	<b>Lab</b>
	<b>Hrs.</b>	<b>Hrs.</b>
	<b>Credit</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>		
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
		<b>9 18 16</b>

**Second Semester (Spring)**

BPR	121	Blueprint Reading II	1	2	2
COM	231	Public Speaking	3	0	3
ENG	111	Expository Writing	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
			<b>11</b>	<b>20</b>	<b>18</b>

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**Third Semester (Summer)**

MAC	113	Machining Technology III	2	12	6
MAC	152	Advanced Machining Calculations	1	2	2
			<b>3</b>	<b>14</b>	<b>8</b>

**Program Totals**

**23 52 42**

**Machining Technology – Diploma – Evening Schedule**

WeeklyWeekly  
Class Lab Credit  
Hrs. Hrs. Hrs.

**First Semester (Fall)**

BPR	111	Blueprint Reading I	1	2	2
MAC	111A	Machining Technology I	1	6	3
MAC	151	Machining Calculations	1	2	2
			<b>3</b>	<b>10</b>	<b>7</b>

**Second Semester (Spring)**

BPR	121	Blueprint Reading II	1	2	2
COM	231	Public Speaking	3	0	3
MAC	111B	Machining Technology I	1	6	3
			<b>5</b>	<b>8</b>	<b>8</b>

**Third Semester (Summer)**

ACA	115	First-Year Seminar	0	2	1
MAC	112A	Machining Technology II	1	4	2
MAC	121	Introduction to CNC	2	0	2
			<b>3</b>	<b>6</b>	<b>5</b>

**Fourth Semester (Fall)**

MAC	112B	Machining Technology II	1	8	4
MAC	124	CNC Milling	1	3	2
MAC	152	Advanced Machining Calculations	1	2	2
			<b>3</b>	<b>13</b>	<b>8</b>

**Fifth Semester (Spring)**

ENG	111	Expository Writing	3	0	3
MAC	113A	Machining Technology III	1	8	4
MAC	122	CNC Turning	1	3	2
			<b>5</b>	<b>11</b>	<b>9</b>

**Sixth Semester (Summer)**

MAC	113B	Machining Technology III	1	4	2
SOC	215	Group Processes	3	0	3
			<b>4</b>	<b>4</b>	<b>5</b>

**Program Total**

**23 52 42**

## Machining Technology – Basic Certificate – Day Schedule

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	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
MAC	111	Machining Technology	2	12	6
BPR	111	Blueprint Reading I	1	2	2
			<b>3</b>	<b>14</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
MAC	121	Introduction to CNC	2	0	2
MAC	124	CNC Milling	1	3	2
			<b>3</b>	<b>3</b>	<b>4</b>
<b>Certificate Totals</b>			<b>6</b>	<b>17</b>	<b>12</b>

## Machining Technology – Basic Certificate – Evening Schedule

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
MAC	111	Machining Technology	2	12	6
<b>Second Semester (Spring)</b>					
BPR	111	Blueprint Reading I	1	2	2
MAC	121	Introduction to CNC	2	0	2
MAC	124	CNC Milling	1	3	2
			<b>4</b>	<b>5</b>	<b>6</b>
<b>Certificate Totals</b>			<b>6</b>	<b>17</b>	<b>12</b>

## CNC Programming Certificate – Day Schedule

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 axes and 3 axis machining. The student will make the parts they design.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
MAC	226	CNC EDM	1	3	2
MEC	231	CAM I	1	4	3
			<b>2</b>	<b>7</b>	<b>5</b>

**Second Semester (Spring)**

MAC 122	CNC Turning	1	3	2
MAC 124	CNC Milling	1	3	2
MEC 232	CAM II	1	4	3
<b>Certificate Totals</b>		<b>3</b>	<b>10</b>	<b>7</b>
		<b>5</b>	<b>17</b>	<b>12</b>

Engineering  
and Applied  
Technology

**CNC Programming Certificate – Evening Schedule**

		Weekly		
		Class	Lab	Credit
		Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>				
MAC 124	CNC Milling	1	3	2
MAC 226	CNC EDM	1	3	2
MEC 231	CAM I	1	4	3
		<b>3</b>	<b>10</b>	<b>7</b>
<b>Second Semester (Spring)</b>				
MAC 122	CNC Turning	1	3	2
MEC 232	CAM II	1	4	3
		<b>2</b>	<b>7</b>	<b>5</b>
<b>Certificate Totals</b>		<b>5</b>	<b>17</b>	<b>12</b>

**Mechanical Engineering Technology**

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. Typical assignments would include assisting in the design, development, testing and repair of mechanical equipment. Emphasis is placed on the integration of theory and mechanical principles.

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**

<b>This program consists of:</b>		<b>Credit Hrs.</b>
<b>Major courses (ATR, EGR, HYD, MEC prefix)</b>		<b>43</b>
<b>Related and general education courses including:</b>		<b>33</b>
<i>English/Communications</i>	6	
<i>Humanities/Fine Arts</i>	3	
<i>Natural Science/Mathematics</i>	10	
<i>Social Science</i>	3	
<i>Other</i>	6	
<i>Major Electives</i>	5	
<b>PROGRAM TOTAL</b>		<b>76</b>

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>Engineering and Applied Technology</b>					
<b>First Semester (Fall)</b>					
ATR	112	Introduction to Automation	2	3	3
EGR	110	Introduction to Engineering Technology or EGR 150	1	2	2
EGR	120	Engineering & Design Graphics	2	3	3
EGR	125	Application Software for Technicians	1	2	2
MAT	121	Algebra/Trigonometry I (or MAT 171 & 171A)**	2	2	3
MEC	180	Engineering Materials	2	3	3
			<b>10</b>	<b>15</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
ATR	280	Robotics Fundamentals	3	2	4
MEC	265	Fluid Mechanics	2	2	3
MAT	122	Algebra/Trigonometry II (or MAT 172 & 172A)**	2	2	3
PHY	131	Physics - Mechanics or PHY 151	3	2	4
			<b>10</b>	<b>8</b>	<b>14</b>
<b>Third Semester (Summer)</b>					
ELC	111	Introduction to Electricity	2	2	3
ISC	121	Environmental Health & Safety	3	0	3
MEC	161	Manufacturing Processes I	3	0	3
			<b>8</b>	<b>2</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>					
EGR	130	Engineering Cost Control	2	2	3
ENG	111	Expository Writing	3	0	3
MEC	210	Applied Mechanics	2	2	3
MEC	237	Instrumentation & Control Systems	3	2	4
		Social/Behavioral Science Elective	3	0	3
			<b>13</b>	<b>6</b>	<b>16</b>
<b>Fifth Semester (Spring)</b>					
ATR	281	Automation Robotics	3	2	4
EGR	280	Tech Project Documentation	0	3	1
EGR	285	Design Project	0	4	2
ENG	114	Professional Research and Reporting or ENG 112	3	0	3
MEC	260	Fundamentals of Machine Design	2	3	3
		Humanities Elective	3	0	3
			<b>11</b>	<b>12</b>	<b>16</b>
<b>Program Totals</b>			<b>52</b>	<b>43</b>	<b>76*</b>

\*The credit hours total includes a minimum of five credit hours of major electives to be selected from: COE 122ME, COE 132ME, COE 212ME, ELC 128, ELC 213, ELN 237, MAT 271, MEC 267, MEC 288, MEC 293, PLA 110.

\*\*These courses are recommended for students who wish to pursue the Bachelor of Science degree following the A.A.S. degree.

This program is also offered in the evening schedule. See Evening Program listing.

# Mechanical Engineering Technology – Associate in Applied Science Degree – Evening Schedule

(Begins in even years only)

Engineering  
and Applied  
Technology

			Weekly	Weekly	Weekly
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ATR	112	Introduction to Automation	2	3	3
EGR	110	Introduction to Engineering or EGR 150**	1	2	2
MAT	121	Algebra/Trigonometry I or MAT 171 & 171A**	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ATR	280	Robotics Fundamentals	3	2	4
MAT	122	Algebra/Trigonometry II or MAT 172 & 172A**	2	2	3
			<b>5</b>	<b>4</b>	<b>7</b>
<b>Third Semester (Summer)</b>					
EGR	125	Application Software for Technicians	1	2	2
ISC	121	Environmental Health & Safety	3	0	3
MEC	161	Manufacturing Processes I	3	0	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>					
EGR	120	Engineering & Design Graphics	2	3	3
MEC	180	Engineering Materials	2	3	3
			<b>4</b>	<b>6</b>	<b>6</b>
<b>Fifth Semester (Spring)</b>					
MEC	265	Fluid Mechanics	2	2	3
PHY	131	Physics-Mechanics or PHY 151	3	2	4
			<b>5</b>	<b>4</b>	<b>7</b>
<b>Sixth Semester (Summer)</b>					
ELC	111	Introduction to Electricity	2	2	3
EGR	130	Engineering Cost Control	2	2	3
MEC	260	Fundamentals of Machine Design	2	3	3
			<b>6</b>	<b>7</b>	<b>9</b>
<b>Seventh Semester (Fall)</b>					
MEC	210	Applied Mechanics	2	2	3
MEC	237	Instrumentation & Control Systems	3	2	4
			<b>5</b>	<b>4</b>	<b>7</b>
<b>Eighth Semester (Spring)</b>					
Social/Behavioral Sciences Elective			3	0	3
<b>Ninth Semester (Summer)</b>					
ENG	111	Expository Writing Humanities Elective	3	0	3
			<b>3</b>	<b>0</b>	<b>3</b>
<b>Tenth Semester (Fall)</b>					
ENG	114	Professional Research and Reporting	3	0	3

Engineering and Applied Technology	<b>Eleventh Semester (Spring)</b>					
	ATR 281	Automation Robotics	3	2	4	
	EGR 280	Tech Project Documentation	0	3	1	
	EGR 285	Design Project	0	4	2	
	<b>Program Totals</b>			<b>3</b>	<b>9</b>	<b>7</b>
			<b>52</b>	<b>43</b>	<b>71*</b>	
	*The credit hours total includes a minimum of five credit hours of major electives to be selected from: COE 122ME, COE 132ME, COE 212ME, ELC 128, ELC 213, ELN 237, MAT 271, MEC 267, MEC 288, MEC 293, PLA 110.					
	**These courses are recommended for students who wish to pursue the Bachelor of Science degree following the A.A.S. degree.					

## Automation/Robotics Certificate

<b>This program consists of:</b>			<b>Credit Hrs.</b>		
<b>Major courses (ATR, HYD, MEC Prefix)</b>			<b>17</b>		
<b>Related and general education courses</b>			<b>0</b>		
			<b>WeeklyWeekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ATR 112	Introduction to Automation	2	3	3	
ELC 111	Introduction to Electricity	2	2	3	
MEC 237	Instrumentation & Control Systems	3	2	4	
		<b>7</b>	<b>7</b>	<b>10</b>	
<b>Second Semester (Spring)</b>					
ATR 280	Robotic Fundamentals	3	2	4	
MEC 265	Fluid Mechanics	2	2	3	
		<b>5</b>	<b>4</b>	<b>7</b>	
<b>Program Totals</b>			<b>12</b>	<b>11</b>	<b>17</b>

*This program is also offered in the evening schedule. See Evening Program listing.*

## Automation/Robotics Certificate – Evening Schedule

*(begins in even years only)*

			<b>WeeklyWeekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>					
ATR 112	Introduction to Automation	2	3	3	
ELC 111	Introduction to Electricity	2	2	3	
MEC 237	Instrumentation & Control Systems	3	2	4	
		<b>7</b>	<b>7</b>	<b>10</b>	
<b>Second Semester (Spring)</b>					
ATR 280	Robotics Fundamentals	3	2	4	
<b>Third Semester (Spring)</b>					
MEC 265	Fluid Mechanics	2	2	3	
<b>Program Totals</b>			<b>12</b>	<b>11</b>	<b>17</b>

## 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.

Engineering  
and Applied  
Technology

## Surveying Technology – Associate in Applied Science Degree

This program consists of:

**Major courses (CIV, SRV prefix)**

**Credit Hrs.**

**43**

**Related and general education courses**

**30**

**including:**

*English/Communications*

6

*Humanities/Fine Arts*

3

*Natural Science/Mathematics*

10

*Social Science*

3

*Other*

8

**PROGRAM TOTAL**

**73**

**Weekly**

**Class Lab Credit**

**Hrs.**

**Hrs.**

**Hrs.**

### First Semester (Fall)

EGR	110	Introduction to Engineering	2	0	2
EGR	115	Introduction to Engineering Technology	2	3	3
EGR	115A	Intro to Tech Lab	0	3	1
EGR	125	Application Software for Tech	1	2	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT 171 & 171A)	2	2	3
			<b>10</b>	<b>10</b>	<b>14</b>

### Second Semester (Spring)

CIV	110	Statics/Strength of Materials	2	6	4
ENG	114	Professional Research and Reporting	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT 172 & 172A)	2	2	3
PHY	131	Physics - Mechanics	3	2	4
SRV	110	Surveying I	2	6	4
			<b>12</b>	<b>16</b>	<b>18</b>

### Third Semester (Summer)

CIV	125	Civil/Surveying CAD	1	6	3
CIV	211	Hydraulics and Hydrology	2	3	3
SRV	111	Surveying II	2	6	4
			<b>5</b>	<b>15</b>	<b>10</b>

		<b>Fourth Semester (Fall)</b>			
Engineering and Applied Technology	CIV 111	Soils and Foundations	2	3	3
	CIV 215	Highway Technology	1	3	2
	SRV 210	Surveying III	2	6	4
	SRV 240	Topographic/Site Surveying	2	6	4
		Social/Behaviorial Science Elective	3	0	3
		<b>10</b>	<b>18</b>	<b>16</b>	
		<b>Fifth Semester (Spring)</b>			
		Humanities/Fine Arts Elective	3	0	3
SRV 220	Surveying Law	2	2	3	
SRV 230	Subdivision Planning	1	6	3	
SRV 250	Advanced Surveying	2	6	4	
SRV 260	Field and Office Practices	1	3	2	
		<b>9</b>	<b>17</b>	<b>15</b>	
<b>Program Totals</b>		<b>46</b>	<b>76</b>	<b>73</b>	

## Surveying Technology – Associate in Applied Science Degree – Evening Schedule

*(Begins in odd years only)*

		<b>Weekly</b>		
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
<b>First Semester (Fall)</b>				
EGR 115	Introduction to Engineering Technology	2	3	3
EGR 115A	Intro to Tech Lab	0	3	1
EGR 125	Application Software for Tech	1	2	2
MAT 121	Algebra/Trigonometry I (or MAT 171 & 171A)	2	2	3
		<b>5</b>	<b>10</b>	<b>9</b>
<b>Second Semester (Spring)</b>				
EGR 110	Introduction to Engineering	2	0	2
ENG 111	Expository Writing	3	0	3
MAT 122	Algebra/Trigonometry II (or MAT 172 & 172A)	2	2	3
		<b>7</b>	<b>2</b>	<b>8</b>
<b>Third Semester (Summer)</b>				
PHY 131	Physics - Mechanics	3	2	4
SRV 110	Surveying I	2	6	4
		<b>5</b>	<b>8</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>				
CIV 110	Statics/Strength of Materials	2	6	4
SRV 111	Surveying II	2	6	4
		<b>4</b>	<b>12</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>				
CIV 111	Soils and Foundations	2	3	3
ENG 114	Project Research and Reporting	3	0	3
SRV 210	Surveying III	2	6	4
		<b>7</b>	<b>9</b>	<b>10</b>
<b>Sixth Semester (Summer)</b>				
CIV 211	Hydraulics and Hydrology	2	3	3

**Seventh Semester (Fall)**

CIV	125	Civil/Surveying CAD	1	6	3
CIV	215	Highway Technology	1	3	2
SRV	220	Surveying Law	2	2	3
			<b>4</b>	<b>11</b>	<b>8</b>

**Eighth Semester (Spring)**

SRV	240	Topographic/Site Surveying	2	6	4
SRV	260	Field and Office Practices	1	3	2
		Social/Behavioral Science Elective	3	0	3
			<b>6</b>	<b>9</b>	<b>9</b>

**Ninth Semester (Summer)**

SRV	230	Subdivision Planning	1	6	3
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**Tenth Semester (Fall)**

HUM	115	Critical Thinking	3	0	3
SRV	250	Advanced Surveying	2	6	4

**Program Totals**

<b>5</b>	<b>6</b>	<b>7</b>
<b>46</b>	<b>76</b>	<b>73</b>

Engineering  
and Applied  
Technology

## 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 – Diploma – Day Schedule

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (WLD prefix)</b>	<b>32</b>
<b>Related and general education courses including:</b>	<b>9</b>
<i>English/Communications</i>	3
<i>Natural Science/Mathematics</i>	3
<b>PROGRAM TOTAL</b>	<b>41</b>

<b>Weekly</b>	<b>Weekly</b>	
<b>Class Hrs.</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>

**First Semester (Fall)**

ACA	115	Freshman Seminar	0	2	1
MAC	118	Machine Shop Basic	1	3	2
MAT	101	Applied Mathematics I	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
			<b>8</b>	<b>25</b>	<b>17</b>

		<b>Second Semester (Spring)</b>			
Engineering and Applied Technology	ENG 102	Applied Communications II (or ENG 111)	3	0	3
	WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
	WLD 131	GTAW (TIG) Pipe	2	6	4
	WLD 141	Symbols and Specifications	2	2	3
		<b>8</b>	<b>17</b>	<b>14</b>	
		<b>Third Semester (Summer)</b>			
	WLD 132	GTAW (TIG) Pipe	1	6	3
	WLD 215	SMAW (Stick) Pipe	1	9	4
	WLD 262	Inspection and Testing	2	2	3
		<b>4</b>	<b>17</b>	<b>10</b>	
<b>Program Totals</b>		<b>20</b>	<b>59</b>	<b>41</b>	

## **Welding Technology – Diploma – Evening Schedule**

		<b>Weekly</b>			
		<b>Class</b>	<b>Lab</b>	<b>Credit</b>	
		<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>	
<b>First Semester (Fall)</b>					
	ACA 115	Freshman Seminar	0	2	1
	WLD 110	Cutting Processes	1	3	2
	WLD 115	SMAW (Stick) Plate	2	9	5
		<b>3</b>	<b>14</b>	<b>8</b>	
<b>Second Semester (Spring)</b>					
	ENG 102	Applied Communications II (or ENG 111)	3	0	3
	WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
	WLD 262	Inspection and Testing	2	2	3
		<b>6</b>	<b>11</b>	<b>10</b>	
<b>Third Semester (Summer)</b>					
	WLD 121	GMAW (MIG) FCAW (Flux) Plate	2	6	4
	WLD 141	Symbols and Specifications	2	2	3
		<b>4</b>	<b>8</b>	<b>7</b>	
<b>Fourth Semester (Fall)</b>					
	MAC 118	Machine Shop Basic	1	3	2
	MAT 101	Applied Mathematics I	2	2	3
	WLD 131	GTAW (Plate)	2	6	4
		<b>5</b>	<b>11</b>	<b>9</b>	
<b>Fifth Semester (Spring)</b>					
	WLD 132	GTAW (Pipe)	1	6	3
<b>Sixth Semester (Summer)</b>					
	WLD 215	SMAW (Stick) Pipe	1	9	4
<b>Program Totals</b>		<b>20</b>	<b>59</b>	<b>41</b>	

## Welding Certificate

The following courses give students an understanding of the principles, methods, techniques, and skills essential for employment in the welding field and metals industry.

Engineering  
and Applied  
Technology

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
WLD 115	SMAW (Stick) Plate		2	9	5
<b>Second Semester (Spring)</b>					
WLD 116	SMAW (Stick) Plate		1	9	4
WLD 141	Symbols and Specifications		2	2	3
			<b>3</b>	<b>11</b>	<b>7</b>
<b>Third Semester (Summer)</b>					
WLD 143	Welding Metallurgy		1	2	2
<b>Fourth Semester (Fall)</b>					
WLD 111	Oxy-Fuel Welding		1	3	2
<b>Certificate Totals</b>			<b>7</b>	<b>25</b>	<b>16</b>

## Welding Certificate – Evening Schedule

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
WLD 115	SMAW (Stick) Plate		2	9	5
<b>Second Semester (Spring)</b>					
WLD 116	SMAW (Stick) Plate		1	9	4
WLD 141	Symbols and Specifications		2	2	3
			<b>3</b>	<b>11</b>	<b>7</b>
<b>Third Semester (Fall)</b>					
WLD 143	Welding Metallurgy		1	2	2
<b>Fourth Semester (Spring)</b>					
WLD 111	Oxy-fuel Welding		1	3	2
<b>Program Totals</b>			<b>7</b>	<b>25</b>	<b>16</b>

Engineering  
and Applied  
Technology

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# Arts and Sciences

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The Division of Arts and Sciences provides academic instruction in a learning-centered environment that enables students to acquire A.A., A.S., A.F.A., or A.A.S. degrees (including pre-majors), to complete general education support courses for other certificate, diploma, or degree programs, and/or to meet personal and professional interests through specific courses.

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	<b>Associate in Arts College Transfer</b>	<b>Associate in Science College Transfer</b>	<b>Associate in Fine Arts College Transfer</b>
Arts and Sciences	<b>Recommended High School Courses</b>		
	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.
	<b>A-B Tech Entrance Requirements</b>		
	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
	<b>Program Schedule</b>		
	Day/Afternoon/Night Can take single courses any semester.	Day/Afternoon/Night Can take single courses any semester.	Day/Afternoon/Night Can take single courses any semester.
	<b>Degree</b>		
	Associate in Arts	Associate in Science	Associate in Fine Arts
	<b>Employment Opportunities</b>		
	Transfer at junior level to four-year institutions	Transfer at junior level to four-year institutions	Transfer at junior level to four-year institutions

**Associate in Applied  
Science Biotechnology****General Occupational  
Technology****Recommended High School Courses**

Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.

Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.

Arts and  
Sciences

**A-B Tech Entrance Requirements**

Algebra I  
Biology and Chemistry or Physics  
Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).

Algebra I  
Biology and Chemistry or Physics  
Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).

**Program Schedule**

Day  
Can take single courses any semester.

Day/Night  
Can take single courses any semester.

**Degree**

Associate in Applied Science

Associate in Applied Science or Diploma

**Employment Opportunities**

Biopharmaceutical Processing  
Chemical Processing  
Laboratory Technician  
Sales and Customer Service

General technology careers

## 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, humanities and fine arts, social and behavioral sciences, natural sciences, 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 equip the student to successfully master the challenges of post-graduation endeavors.

Upon successful completion of the general education requirements, the student will have mastered the following cross-curriculum competencies:

1. Communicate effectively in speaking, writing, reading and/or listening.
2. Locate, evaluate, and use information to analyze problems and make logical decisions.
3. Apply math skills and/or natural science knowledge appropriately to organize, analyze and make information useful.
4. Demonstrate basic competency in computer technology.
5. Demonstrate an appreciation of the various manifestations of cultural diversity.
6. Develop the ability to succeed as a self-directed learner.
7. Apply critical thinking skills in analyzing the physical, social, emotional, intellectual, aesthetic or philosophical factors that influence personal development.

## Honors Program

A-B Tech's Honors Program offers exciting and challenging educational opportunities for talented, highly motivated students. Honors students are encouraged to pursue individual goals and research and expand learning beyond the classroom. Frequent interaction with instructors and other honors students broadens the educational experience and enhances knowledge. Students may graduate from A-B Tech with distinction and transfer their honors credits to many other schools.

Besides taking honors courses, students may receive an honors certificate or degree. Certificates are awarded to students who receive at least 12 semester hours credit in honors courses with an overall GPA of 3.5 or better. Honors degrees are awarded to students with at least 18 semester hours in honors courses with an overall GPA of 3.5 or better. All honors courses should be taken at A-B Tech.

In order to register for an honors course, students must meet one of the following criteria:

1. CPT scores of 81 in algebra and 95 in both sentences and reading.
2. SAT scores of at least 550 in both English and Math
3. Overall 3.5 GPA after 12 semester hours in curriculum courses at A-B Tech.

# Curriculum requirements for the Associate in Arts (A.A.) Degree

Semester Hrs.

## General Education Core Requirements

44

### English Composition (6 semester hours)

English Composition: ENG 111 and 112, 113 or 114 are required

### Humanities/Fine Arts (12 semester hours)

1. Public Speaking: COM 231 is required in lieu of one Humanities/Fine Arts course.
2. One course must be a literature course(\*).
3. Other courses must be selected from two of the following disciplines: art, drama, foreign languages, humanities, music, philosophy and religion.

ART 111	ENG 131*	FRE 111	HUM 110	MUS 110	REL 110
ART 114	ENG 231*	FRE 112	HUM 115	MUS 113	REL 211
ART 115	ENG 232*	FRE 211	HUM 120	MUS 114	REL 212
ASL 111	ENG 241*	FRE 212	HUM 122	PHI 210	SPA 111
ASL 112	ENG 242*	GER 111	HUM 130	PHI 215	SPA 112
DRA 111	ENG 243*	GER 112	HUM 150	PHI 230	SPA 211
DRA 112	ENG 261*	GER 211	HUM 160	PHI 240	SPA 212
DRA 211	ENG 262*	GER 212	HUM 211		
DRA 212			HUM 212		
			HUM 220		

### Social/Behavioral Sciences (12 semester hours)

1. At least one course must be a history course (\*).
2. Other courses must be selected from three of the following disciplines: anthropology, economics, geography, history, political science, psychology and sociology.

ANT 210	ECO 151	HIS 111*	POL 110	SOC 210
ANT 220	ECO 251	HIS 112*	POL 120	SOC 213
ANT 230	ECO 252	HIS 115*	POL 210	SOC 220
ANT 230A	GEO 111	HIS 131*	PSY 150	SOC 225
ANT 240	GEO 112	HIS 132*	PSY 237	SOC 240
			PSY 241	
			PSY 281	

### Natural Science/Mathematics

#### Natural Sciences (8 semester hours)

Two courses, including accompanying laboratory\* work, must be selected from the astronomy, biology, chemistry, or physics disciplines.

AST 111	BIO 110	CHM 132	PHY 110
AST 111A*	BIO 111	CHM 135	PHY 110A*
	BIO 112	CHM 136	PHY 151
	BIO 120	CHM 151	PHY 152
	BIO 130	CHM 152	PHY 251
	BIO 140	GEL 111	PHY 252
	BIO 140A*	GEL 230	

Arts and

Sciences

**Mathematics (6 semester hours)**

1. MAT 161 or higher is required.

Select one course from the following: MAT 161\*, MAT 171\* or MAT 175\*

Arts and  
Sciences

2. Select a second course from the following: MAT 172\* OR MAT 175\*  
OR second course may be selected from other quantitative subjects:

MAT 140	MAT 271	MAT 273	CIS 110
MAT 151*	MAT 272		CIS 115

\*A math lab is required for this course. Labs count as elective hours.

**Other Required Hours****21**

1. ACA 115 (First-Year Seminar) is required. **(1 semester hour)**

**2. Additional Courses (20 semester hours)**

These include general education, pre-major and elective courses that have been approved for transfer (see list following page).

A second foreign language course is recommended (elective)\*. The 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 ([http://www.ga.unc.edu/student\\_info/caa/](http://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.**

**Computing**

CIS 110 **(3 semester hours)**

**Health / Physical Education (3 semester hours)**

HEA 110, HEA 120, 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".*
- *Health / Physical Education courses may be selected any semester.*
- *Courses selected may vary according to requirements of the pre-major, senior institution, etc*

**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 PEDs (physical education) courses count as electives.

Arts and  
Sciences

ACC 120 (4)	ART 274 (3)	BIO 225 (2)	CJC 111 (3)	ENG 265 (3)	MAT 140A (1)
ACC 121 (4)	ART 275 (3)	BIO 226 (2)	CJC 121 (3)	ENG 271 (3)	MAT 151A
ART 121 (3)	BIO 143 (2)	BIO 243 (4)	CJC 141 (3)	ENG 272 (3)	MAT 161A (1)
ART 122 (3)	BIO 145 (4)	BIO 250 (4)	COM 120	ENG 273 (3)	MAT 171A (1)
ART 131 (3)	BIO 146 (4)	BIO 271 (3)	COM 250	ENG 274 (3)	MAT 172A (1)
ART 132 (3)	BIO 163 (5)	BIO 275 (4)	DRA 120	ENG 275 (3)	MAT 175A (1)
ART 135 (3)	BIO 168 (4)	BIO 280 (3)	DRA 124 (3)	GER 141 (3)	MAT 285 (3)
ART 171 (3)	BIO 169 (4)	BUS 110 (3)	DRA 131	GER 221 (3)	MUS 121 (4)
ART 240 (3)	BIO 173 (4)	BUS 115 (3)	DRA 140	HEA 110 (3)	MUS 122 (4)
ART 241 (3)	BIO 175 (3)	CHM 130 (3)	DRA 141	HEA 112 (2)	PHS 140 (3)
ART 244 (3)	BIO 180 (3)	CHM 130A (1)	DRA 144	HEA 120 (3)	PHY 243 (3)
ART 261 (3)	BIO 223 (3)	CHM 251 (4)	DRA 170	HIS 162 (3)	SOC 215 (3)
ART 262 (3)	BIO 224 (2)	CHM 252 (4)	DRA 171	HIS 227 (3)	SOC 232 (3)
ART 271 (3)		CHM 265 (4)	DRA 250	HIS 236 (3)	SOC 234 (3)
			EDU 116 (4)	HUM 123 (3)	SOC 254 (3)
			ENG 125 (3)		SPA 141 (3)
			ENG 126 (3)		SPA 221 (3)
			ENG 133 (3)		
			ENG 134 (3)		
			ENG 135 (3)		
			ENG 253 (3)		

# Curriculum requirements for the Associate in Science (A.S.) Degree

Semester Hrs.

Arts and  
Sciences

## General Education Core Requirements

44

### English Composition (6 semester hours)

English Composition: ENG 111 and 112, 113 or 114 are required

### Humanities/Fine Arts (9 semester hours)

1. Public Speaking: COM 231 is required in lieu of one Humanities/Fine Arts course.
2. One course must be a literature course(\*).
3. Other courses must be selected from two of the following disciplines: art, drama, foreign languages, humanities, music, philosophy and religion.

ART 111	ENG 131*	FRE 111	HUM 110	MUS 110	REL 110
ART 114	ENG 231*	FRE 112	HUM 115	MUS 113	REL 211
ART 115	ENG 232*	FRE 211	HUM 120	MUS 114	REL 212
ASL 111	ENG 241*	FRE 212	HUM 122	PHI 210	SPA 111
ASL 112	ENG 242*	GER 111	HUM 130	PHI 215	SPA 112
DRA 111	ENG 243*	GER 112	HUM 150	PHI 230	SPA 211
DRA 112	ENG 261*	GER 211	HUM 160	PHI 240	SPA 212
DRA 211	ENG 262*	GER 212	HUM 211		
DRA 212			HUM 212		
			HUM 220		

### Social/Behavioral Sciences (9 semester hours)

1. At least one course must be a history course (\*).
2. Other courses must be selected from two of the following disciplines: anthropology, economics, geography, political science, psychology and sociology.

ANT 210	ECO 151	HIS 111*	POL 110	SOC 210
ANT 220	ECO 251	HIS 112*	POL 120	SOC 213
ANT 230	ECO 252	HIS 115*	POL 210	SOC 220
ANT 230A	GEO 111	HIS 131*	PSY 150	SOC 225
ANT 240	GEO 112	HIS 132*	PSY 237	SOC 240
			PSY 241	
			PSY 281	

**Natural Science/Mathematics (20 semester hours)****Natural Sciences (8 semester hours)**

A minimum two-course sequence from the following general biology, general chemistry, or general physics courses is required.

BIO 111 and BIO 112

CHM 151 and CHM 152

PHY 151 and PHY 152

PHY 251 and PHY 252

Arts and  
Sciences

**Mathematics (6 semester hours)**

1. MAT 171 or higher is required.

Select one course from the following: MAT 171\* or MAT 175\*

2. Select a second course from the following: MAT 172\* OR MAT 175\*  
OR a second course may be selected from other quantitative subjects:

MAT 151\* MAT 271\* CIS 110

MAT 272\* CIS 115

MAT 273\*

\*A math lab is required for this course. Labs count as elective hours.

**Six additional semester hours may be selected from either natural sciences or mathematics.**

**Other Required Hours****21**

1. ACA 115 (First-Year Seminar) is required. **(1 semester hour)**

**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. Other required hours (6 semester hours)**

The math lab hours, when required as a corequisite, count as an elective.

A second foreign language course is recommended (elective)\*.

Students should refer to Pre-Major Articulation Agreements before making selections for required hours ([http://www.ga.unc.edu/student\\_info/caa/](http://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.**

**Computing (3 semester hours)**

CIS 110

**Health / Physical Education (3 semester hours)**

HEA 110, HEA 120, 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".*
- *Health / Physical Education courses may be selected any semester.*
- *Courses selected may vary according to requirements of the pre-major, senior institution, etc*

Arts and  
Sciences

### **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 PEDs (physical education) courses count as electives.

ACC 120 (4)	ART 274 (3)	BIO 224 (2)	CHM 136 (4)	ENG 125 (3)	HIS 236 (3)	SOC 215 (3)
ACC 121 (4)	ART 275 (3)	BIO 225 (2)	CHM 251 (4)	ENG 126 (3)	HUM 123 (3)	SOC 232 (3)
ART 121 (3)	AST 111 (3)	BIO 226 (2)	CHM 252 (4)	ENG 133 (3)	MAT 140A (1)	SOC 234 (3)
ART 122 (3)	AST 111A(1)	BIO 243 (4)	CHM 265 (4)	ENG 134 (3)	MAT 151A	SOC 254 (3)
ART 131 (3)	BIO 143 (2)	BIO 250 (4)	CJC 111 (3)	ENG 135 (3)	MAT 161A (1)	SPA 141 (3)
ART 132 (3)	BIO 145 (4)	BIO 271 (3)	CJC 121 (3)	ENG 253 (3)	MAT 171A (1)	SPA 221 (3)
ART 135 (3)	BIO 146 (4)	BIO 275 (4)	CJC 141 (3)	ENG 265 (3)	MAT 172A (1)	
ART 171 (3)	BIO 163 (5)	BIO 280 (3)	COM 120	ENG 271 (3)	MAT 175A (1)	
ART 240 (3)	BIO 168 (4)	BUS 110 (3)	COM 250	ENG 272 (3)	MAT 285 (3)	
ART 241 (3)	BIO 169 (4)	BUS 115 (3)	DRA 120	ENG 273 (3)	MUS 121 (4)	
ART 244 (3)	BIO 173 (4)	CHM 130 (3)	DRA 124 (3)	ENG 274 (3)	MUS 122 (4)	
ART 261 (3)	BIO 175 (3)	CHM 130A(1)	DRA 131	ENG 275 (3)	PHS 140 (3)	
ART 262 (3)	BIO 180 (3)	CHM 132 (4)	DRA 140	GER 141 (3)	PHY 110 (3)	
ART 271 (3)	BIO 223 (3)	CHM 135 (4)	DRA 141	GER 221 (3)	PHY 110A (1)	
			DRA 170	HEA 110 (3)	PHY 243 (3)	
			DRA 171	HEA 112 (2)		
			DRA 250	HEA 120 (3)		
				HIS 162 (3)		
				HIS 227 (3)		

# Curriculum requirements for the Associate in Fine Arts (A.F.A.) Degree

Semester Hrs.

## Art Core Requirements

15

Arts and  
Sciences

The following art courses are required for the A.F.A. Degree:

ART 114    ART 121    ART 131  
ART 115    ART 122

## General Education Core Requirements

28

### English/Communication (6 semester hours)

ENG 111 and 112, 113 or 114 are required

### Humanities/Fine Arts (6 semester hours)

1. Public Speaking: COM 231 is required in lieu of one Humanities/Fine Arts course.
2. One of the following literature courses is required.
 

ENG 131    ENG 241    ENG 252  
ENG 231    ENG 242    ENG 261  
ENG 232    ENG 243    ENG 262  
ENG 233    ENG 251

### Social/Behavioral Sciences (9 semester hours)

1. At least one course must be a history\* course.
2. Other courses must be selected from two of the following disciplines: anthropology, economics, geography, history, political science, psychology and sociology.

ANT 210    GEO 111    POL 110    SOC 210  
ANT 220    GEO 112    POL 120    SOC 213  
ANT 221    HIS 111\*    POL 210    SOC 220  
ANT 230    HIS 112\*    PSY 150    SOC 225  
ANT 230A    HIS 115\*    PSY 237    SOC 240  
ANT 240    HIS 131\*    PSY 241  
ECO 151    HIS 132\*    PSY 281  
ECO 251  
ECO 252

### Natural Science/Mathematics

#### Natural Sciences (4 semester hours)

Select one course, including laboratory\* work, from the astronomy, biology, chemistry, or physics disciplines.

AST 111    BIO 110    CHM 135    PHY 110  
AST 111A\*    BIO 111    PHY 110A\*

#### Mathematics (3 semester hours)

MAT 140 or higher is required.

## Other Required Hours

22

1. ACA 115 (First-Year Seminar) is required. **(1 semester hour)**
2. Seven additional ART courses **(21 semester hours)**

Arts and  
Sciences

ART 132	ART 240	ART 261	ART 274
ART 171	ART 241	ART 262	ART 275
ART 214*	ART 244	ART 271	

## 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 programs offered by the college (see list below), have no grade below "C," and are accepted by the senior institution, you will enter as a junior in that major. Pre-major articulation agreements are available from Student Services and academic advisors, or on the web at [http://www.ga.unc.edu/student\\_info/caa/](http://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 Science Degree Pre-major Programs

### Associate in Arts

Art Education  
Business Administration  
Business Education  
Criminal Justice  
English  
English Education  
Health Education  
History  
Marketing Education  
Nursing  
Physical Education  
Political Science  
Psychology  
Social Science Secondary Education  
Sociology

### Associate in Science

Biology  
Biology Education  
Chemistry  
Chemistry Education  
Computer Science  
Engineering  
Mathematics  
Mathematics Education

## 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.

Arts and  
Sciences

## Biotechnology – Associate in Applied Science Degree

<b>This program consists of:</b>	<b>Credit Hrs.</b>
<b>Major courses (BTC)</b>	<b>28-29</b>
<b>Related and general education courses including:</b>	<b>44</b>
<i>English/Communications</i>	9
<i>Humanities/Fine Arts</i>	3
<i>Natural Science/Mathematics</i>	28
<i>Social Sciences</i>	0
<i>Other</i>	4
<b>PROGRAM TOTAL</b>	<b>72-73</b>

				Weekly	Weekly	Weekly	Weekly
				Class	Lab	Work	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
BIO	111	General Biology I		3	3	0	4
CHM	151	General Chemistry I		3	3	0	4
		or CHM 131 Introduction to Chemistry		(3	0	0	3)
		CHM 131A Intro to Chemistry Lab		(0	3	0	1)
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
				<b>12</b>	<b>10</b>	<b>0</b>	<b>16</b>
<b>Second Semester (Spring)</b>							
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
		or MAT 155 Statistical Analysis		(3	0	0	3)
		MAT 155A Statistical Analysis Lab		(0	2	0	1)
		Elective (HFA)		3	0	0	3
				<b>12</b>	<b>8</b>	<b>0</b>	<b>15</b>

		<b>Third Semester (Summer)</b>				
	BIO 275	Microbiology	3	3	0	4
	BTC 181	Basic Lab Techniques	3	3	0	4
		Elective (SBS)	3	0	0	3
			<b>9</b>	<b>6</b>	<b>0</b>	<b>11</b>
Arts and		<b>Fourth Semester (Fall)</b>				
Sciences	BTC 285	Cell Culture	2	3	0	3
	BTC 250	Molecular Genetics	3	0	0	3
	CIS 110	Introduction to Computers	2	2	0	3
	ENG 114	Professional Research and Reporting	3	0	0	3
	BTC 282	Biotechnology Fermentation I	2	6	0	4
			<b>12</b>	<b>11</b>	<b>0</b>	<b>16</b>
		<b>Fifth Semester (Spring)</b>				
	BTC 286	Immunological Techniques	3	3	0	4
	BTC 270	Recombinant DNA Tech	3	3	0	4
	BTC 283	Biotechnology Fermentation II	2	6	0	4
	COM 231	Public Speaking	3	0	0	3
			<b>11</b>	<b>12</b>	<b>0</b>	<b>15</b>
		<b>Sixth Semester (Summer)</b>				
	BTC 288	Biotech Lab Experience Techniques	0	6	0	2
		or COE 213BT Co-op Work Experience	0	0	30	3
			<b>0</b>	<b>0-6</b>	<b>0-30</b>	<b>2-3</b>
		<b>Program Totals</b>	<b>56</b>	<b>47-53</b>	<b>0-30</b>	<b>75-76</b>

## General Occupational Technology

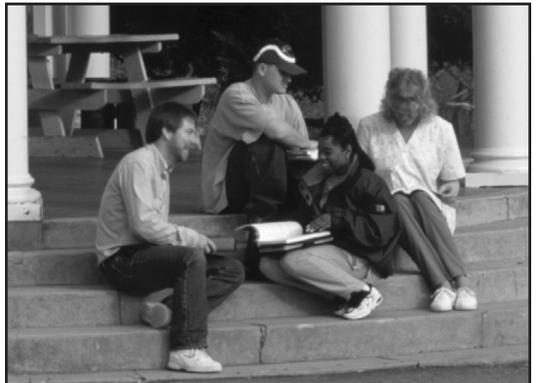
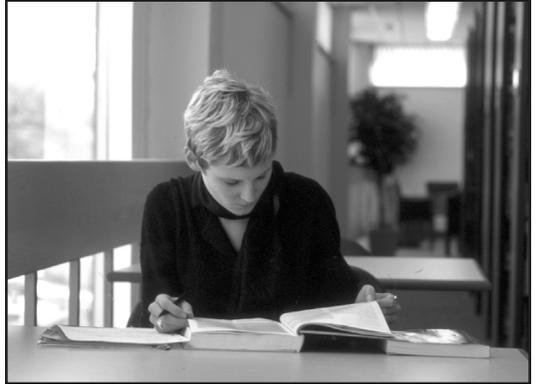
The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree by taking courses suited for their occupational interests and/or needs.

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 associate degree-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.

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# Course Descriptions

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	CAB	Cabinetmaking.....	262
	CAR	Carpentry.....	262
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	CET	Computer Engineering Technology.....	263
	CHM	Chemistry.....	264
	CIS	Information Systems.....	266
	CIV	Civil Engineering.....	270
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	DDF	Design Drafting.....	289
	DDT	Developmental Disabilities.....	289
	DEN	Dental.....	289
	DFT	Drafting.....	294
	DME	Digital Media Technology.....	296
	DRA	Drama.....	298
	ECO	Economics.....	300
	EDU	Education.....	300
	EGR	Engineering.....	305
	ELC	Electrical.....	306
	ELN	Electronics.....	309
	EMS	Emergency Medical Science.....	310
	ENG	English.....	314
	FIP	Fire Protection Technology.....	319
	FRE	French.....	322
	GEO	Geography.....	323
	GEL	Geology.....	323
	GER	German.....	323
	GIS	Geographic Information Systems.....	324

HEA	Health .....	324
HET	Heavy Equipment and Transport Technology .....	325
HIS	History .....	326
HRM	Hotel and Restaurant Management .....	328
HSE	Human Services .....	330
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HUM	Humanities .....	332
HYD	Hydraulics .....	334
ITN	Internet Technologies .....	335
ISC	Industrial Science .....	336
MAC	Machining .....	336
MAT	Mathematics .....	339
MEC	Mechanical .....	343
MED	Medical Transcription .....	346
MKT	Marketing and Retailing .....	346
MLT	Medical Laboratory Technology .....	347
MUS	Music .....	350
NET	Networking Technology .....	351
NUR	Nursing .....	355
OST	Office Systems Technology .....	357
PBT	Phlebotomy .....	359
PED	Physical Education .....	360
PHI	Philosophy .....	366
PHS	Physical Science .....	367
PHY	Physics .....	367
PLA	Plastics .....	369
POL	Political Science .....	369
PSY	Psychology .....	369
RAD	Radiography .....	371
REA	Real Estate Appraisal .....	373
RED	Reading .....	375
REL	Religion .....	375
RLS	Real Estate .....	376
SAB	Substance Abuse .....	376
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SOC	Sociology .....	377
SON	Sonography .....	379
SPA	Spanish .....	381
SRV	Surveying .....	382
SUR	Surgical Technology .....	383
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WLD	Welding .....	389

Course  
Descriptions

## Course Descriptions

The following section contains descriptions of courses offered by Asheville-Buncombe Technical Community College. The following example explains each component of the course description entry.

Course Descriptions	<p>Courses that must be successfully completed prior to registering for this course.</p> <p>General Subject</p> <p>    Course Number (see below)</p> <p>        Course Title</p> <p><b>ASH 101</b>      <b>Life in Asheville</b></p> <p>Prerequisite: ASH 100</p> <p>Corequisite: AVL 101</p> <p>    This course explains how to have fun in Asheville. The best places to dine, directions to famous places, dates of local cultural and civic events, trails for hiking and biking.</p>	<p>Class Hours</p> <p>    Lab Hours*</p> <p>        Clinic, Co-op, or Shop Hours</p> <p>            Credit Hours**</p> <p><b>1 3 0 3</b></p>
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Courses that must be taken at the same time as this course.

Course Description

\* *When only three numbers are listed, the middle number always designates Lab Hours.*

\*\* *Credit Hours are always the last number.*

Course Numbers consist of three digits, and numbers are assigned as follows:

- The first digit indicates the year the course is normally taken. A first digit of "0" is used for Guided Studies courses.
- The second digit denotes the credential for which the course is intended:
  - 100-109 and 200-209:** Courses for stand-alone certificate and diploma programs.
  - 110-189 and 210-289:** Courses for associate degree programs; these courses may also be used in certificate and diploma programs.
  - 190-199 and 290-299:** Seminar and Selected Topics courses for all programs.
- The third digit indicates the order in which the course is usually taken.

Example: **ACC 120 Principles of Financial Accounting**  
**ACC 121 Principles of Managerial Accounting**

Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses that must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

**Credit by Examination is not available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.**

## Academic Related

**ACA 115 First-Year Seminar** 0 2 1

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions

## Accounting

**ACC 120 Principles of Financial Accounting** 3 2 4

Prerequisites: None

Corequisites: None

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

**ACC 121 Principles of Managerial Accounting** 3 2 4

Prerequisites: ACC 120

Corequisites: None

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

**ACC 129 Individual Income Taxes** 2 2 3

Prerequisites: None

Corequisites: None

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

**ACC 130 Business Income Taxes** 2 2 3

Prerequisites: None

Corequisites: None

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

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.

Course	<b>ACC 140 Payroll Accounting</b> Prerequisites: ACC 115 or ACC 120 Corequisites: None	1	2	2
Descriptions	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.			
	<b>ACC 150 Accounting Software Applications</b> Prerequisites: ACC 115 or ACC 120 Corequisites: None	1	2	2
	This course introduces computer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting software package to solve accounting problems.			
	<b>ACC 180 Practices in Bookkeeping</b> Prerequisites: ACC 120 Corequisites: None	3	0	3
	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.			
	<b>*ACC 220 Intermediate Accounting I</b> Prerequisites: ACC 121 Corequisites: None	3	2	4
	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.			
	<b>ACC 240 Government and Not-for-Profit Accounting</b> Prerequisites: ACC 121 Corequisites: None	3	0	3
	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.			
	<b>*ACC 269 Auditing &amp; Assurance Services</b> Prerequisites: ACC 220 Corequisites: None	3	0	3
	This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Coverage will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.			

# Air Conditioning, Heating, and Refrigeration

**\*AHR 110 Introduction to Refrigeration** 2 6 5

Prerequisites: AHR 111 (day), ELC 132 (evening) or Department Chair approval  
Corequisites: AHR 113 (day program) or Dept. Chair approval

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 112 Heating Technology** 2 4 4

Prerequisites: Dept. Chair approval  
Corequisites: None

This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

**\*AHR 113 Comfort Cooling** 2 4 4

Prerequisites: Dept. Chair approval  
Corequisites: None

This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.

**\*AHR 114 Heat Pump Technology** 2 4 4

Prerequisites: AHR 110 or AHR 113  
Corequisites: None

This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

**\*AHR 115 Refrigeration Systems** 1 3 2

Prerequisites: AHR 110  
Corequisites: None

This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. 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: Dept. Chair approval  
Corequisites: None

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.

Course  
Descriptions

	<b>*AHR 125</b>	<b>HVAC Electronics</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: AHR 111 or ELC 111				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>*AHR 130</b>	<b>HVAC Controls</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: AHR 111 or ELC 111				
	Corequisites: None				
	This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort systems controls.				
	<b>*AHR 210</b>	<b>Residential Building Code</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.				
	<b>*AHR 211</b>	<b>Residential System Design</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.				
	<b>*AHR 212</b>	<b>Advanced Comfort Systems</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites: AHR 114, or Department approval				
	Corequisites: None				
	This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps. Hydronic (hot water) and steam heating systems will also be studied.				

## Anthropology

	<b>ANT 210</b>	<b>General Anthropology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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

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.

Course  
Descriptions

**ANT 230 Physical Anthropology 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces the scientific study of human evolution. Emphasis is placed on evolutionary theory, population genetics, biocultural adaptation and human variation, as well as non-human primate evolution, morphology, and behavior. Upon completion, students should be able to demonstrate an understanding of the evolutionary processes which have resulted in the formation of the human species. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**ANT 230A Physical Anthropology Lab 0 2 1**

Prerequisites: None

Corequisites: ANT 230

This course provides laboratory work that reinforces the material presented in ANT 230. Emphasis is placed on laboratory exercises which may include fossil identification, genetic analysis, skeletal comparisons, forensics, computer simulations, and field observations. Upon completion, students should be able to demonstrate an understanding of the analytical skills employed by anthropologists in the study of primate evolution and variation. 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

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

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.

	<b>ARC 112</b>	<b>Construction Materials and Methods</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites:	None			
	Corequisites:	None			
Course	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.				
Descriptions	<b>ARC 113</b>	<b>Residential Arch Tech</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites:	ARC 111			
	Corequisites:	ARC 112			
	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.				
	<b>ARC 131</b>	<b>Building Codes</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	ARC 112 or CAR 111			
	Corequisites:	None			
	This course covers the methods of researching building codes for specific projects. Topics include residential and commercial building codes. Upon completion, students should be able to determine the code constraints governing residential and commercial projects.				
	<b>ARC 230</b>	<b>Environmental Systems</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	ARC 111 and MAT 121			
	Corequisites:	None			
	This course introduces plumbing, mechanical (HVAC), and electrical systems for the architectural environment. Topics include basic plumbing, mechanical, and electrical systems for residential and/or commercial buildings with an introduction to selected code requirements. Upon completion, students should be able to perform related calculations.				

## Art

	<b>ART 111</b>	<b>Art Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>ART 114</b>	<b>Art History Survey I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>ART 115</b>	<b>Art History Survey II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				

**ART 121      Design I** **0    6    3**

Prerequisites: None

Corequisites: None

This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

Course  
Descriptions

**ART 122      Design II** **0    6    3**

Prerequisites: ART 121

Corequisites: None

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

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

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

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

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.

Course	<b>ART 240      Painting I</b>	<b>0</b>	<b>6</b>	<b>3</b>
Descriptions	Prerequisites: None Corequisites: None			
	This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.			
	<b>ART 241      Painting II</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: ART 240 Corequisites: None			
	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.			
	<b>ART 244      Watercolor</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.			
	<b>ART 260      Photography Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	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.			
	<b>ART 261      Photography I</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	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.			
	<b>ART 262      Photography II</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: Art 261 Corequisites: None			
	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.			

<b>ART 264</b>	<b>Digital Photography I</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>ART 265</b>	<b>Digital Photography II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: Art 264				
Corequisites: None				
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.				
<b>ART 271</b>	<b>Computer Art II</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: Art 171				
Corequisites: None				
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.				
<b>ART 274</b>	<b>Lettering Design</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces a variety of lettering forms and covers the manual development of these forms using a variety of materials. Emphasis is placed on developing correct size, design, weight, and proportion in a variety of type styles. Upon completion, students should be able to demonstrate competence in the rendering of various lettering styles, and their application in effective graphic design. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>ART 275</b>	<b>Intro to Commercial Art</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the materials and techniques used in creative layout design for publication. Emphasis is placed on design for advertising in a variety of techniques and media including computer graphics. Upon completion, students should be able to demonstrate competence in manual camera-ready layout design and computer graphics literacy. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				

## American Sign Language

**ASL 111**      **Elementary ASL I**      **3**    **0**    **3**

Prerequisites: None

Corequisites: None

Course

This course introduces the fundamental elements of American Sign Language within a cultural context. Emphasis is placed on the development of basic expressive and receptive skills. Upon completion, students will be able to comprehend and respond with grammatical accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Descriptions

**ASL 112**      **Elementary ASL II**      **3**    **0**    **3**

Prerequisites: ASL 111

Corequisites: None

This course is a continuation of ASL 111 focusing on the fundamental elements of American Sign Language in a cultural context. Emphasis is placed on the progressive development of expressive and receptive skills. Upon completion, the students should be able to comprehend and respond with increasing accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

## Astronomy

**AST 111**      **Descriptive Astronomy**      **3**    **0**    **3**

Prerequisites: None

Corequisites: AST 111A

This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. 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

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: MEC 288

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.



Course	<b>*AUT 152 Brake Systems Lab</b>	0	2	1
	Prerequisites: None			
	Corequisites: AUT 151			
	This course provides a laboratory setting to enhance brake system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 151. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 151.			
Descriptions	<b>*AUT 161 Electrical Systems</b>	2	6	4
	Prerequisites: None			
	Corequisites: None			
	This course covers basic electrical theory and wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, alternators, and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting, and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of an automobile.			
	<b>*AUT 162 Chassis Electrical and Electronics</b>	2	2	3
	Prerequisites: AUT 161 or Dept. Chair approval			
	Corequisites: AUT 163 or Dept. Chair approval			
	This course covers electrical/electronic diagnosis/repair, including wiring diagrams, instrumentation, and electronic/computer-controlled devices and accessories. Topics include interpreting wiring diagrams and diagnosis and repair of chassis electrical and electronic systems. Upon completion, students should be able to read and interpret wiring diagrams and determine/perform needed repairs on chassis electrical and electronic systems.			
	<b>*AUT 163 Chassis Electrical and Electronics Lab</b>	0	2	1
	Prerequisites: None			
	Corequisites: AUT 162			
	This course provides a laboratory setting to enhance chassis electrical and electronic system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 162. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 162.			
	<b>*AUT 171 Heating and Air Conditioning</b>	2	3	3
	Prerequisites: None			
	Corequisites: None			
	This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.			
	<b>*AUT 181 Engine Performance-Electrical</b>	2	3	3
	Prerequisites: None			
	Corequisites: AUT 182 or Dept. Chair approval			
	This course covers the principles, systems, and procedures required for diagnosing and restoring engine performance using electrical/electronics test equipment. Topics include procedures for diagnosis and repair of ignition, emission control, and related electronic systems. Upon completion, students should be able to describe operation of and diagnose/repair ignition/emission control systems using appropriate test equipment and service information.			
	<b>*AUT 182 Engine Performance-Electrical Lab</b>	0	3	1
	Prerequisites: None			
	Corequisites: AUT 181			
	This course provides a laboratory setting to enhance the skills for diagnosing and restoring engine performance using electrical/electronics test equipment. Emphasis is placed on practical experiences that enhance the topics presented in AUT 181. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 181.			

**\*AUT 183      Engine Performance-Fuels      2      3      3**

Prerequisites: Dept. Chair approval

Corequisites: AUT 184 or Dept. Chair approval

This course covers the principles of fuel delivery/management, exhaust/emission systems, and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis/repair of fuel delivery/management and emission systems using appropriate service information. Upon completion, students should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment.

Course  
Descriptions**\*AUT 184      Engine Performance-Fuels Lab      0      3      1**

Prerequisites: AUT 161 or Dept. Chair approval

Corequisites: AUT 183 or Dept. Chair approval

This course provides a laboratory setting to enhance the skills for diagnosing and repairing fuel delivery/management and emission systems. Emphasis is placed on practical experiences that enhance the topics presented in AUT 183. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 183.

**\*AUT 221      Automatic Transmissions      2      6      4**

Prerequisites: AUT 161 or Dept. Chair approval

Corequisites: None

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 and diagnose and repair automatic drive trains.

**\*AUT 231      Manual Drive Trains/Axles      2      3      3**

Prerequisites: AUT 161 or Dept. Chair approval

Corequisites: AUT 232 or Dept. Chair approval

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair manual drive trains.

**AUT 232      Manual Drive Trains/Axles Lab      0      3      1**

Prerequisites: None

Corequisites: AUT 231

This course provides a laboratory setting to enhance the skills for diagnosing and repairing manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Emphasis is placed on practical experiences that enhance the topics presented in AUT 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 231.

## Biology

**BIO 106      Introduction to Anatomy/Physiology/Microbiology      2      2      3**

Prerequisites: None

Corequisites: None

This course covers the fundamental and principle concepts of human anatomy and physiology and microbiology. Topics include an introduction to the structure and function of cells, tissues, and human organ systems, and an overview of microbiology, epidemiology, and control of microorganisms. Upon completion, students should be able to identify structures and functions of the human body and describe microorganisms and their significance in health and disease. This is a certificate and diploma level course.

	<b>BIO 110</b>	<b>Principles of Biology</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions	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.				
	<b>BIO 111</b>	<b>General Biology I</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>BIO 112</b>	<b>General Biology II</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: BIO 111				
	Corequisites: None				
	This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>BIO 120</b>	<b>Introductory Botany</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: BIO 110 or BIO 111				
	Corequisites: None				
	This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>BIO 130</b>	<b>Introductory Zoology</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: BIO 110 or BIO 111				
	Corequisites: None				
	This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				

<b>BIO 140</b>	<b>Environmental Biology</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>BIO 140A</b>	<b>Environmental Biology Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: BIO 140				
This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.				
<b>BIO 143</b>	<b>Field Biology Minicourse</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces the biological and physical components of a field environment. Emphasis is placed on a local field environment with extended field trips to other areas. Upon completion, students should be able to demonstrate an understanding of the biological and physical components of the specific biological environment. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>BIO 145</b>	<b>Ecology</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: BIO 110 or BIO 111				
Corequisites: None				
This course provides an introduction to ecological concepts using an ecosystems approach. Topics include energy flow, nutrient cycling, succession, population dynamics, community structure, and other related topics. Upon completion, students should be able to demonstrate comprehension of basic ecosystem structure and dynamics. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>BIO 146</b>	<b>Regional Natural History</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: None				
Corequisites: None				
This course is an interdisciplinary and historical analysis of the natural resources of the region. Emphasis is placed on geology, climate, forest systems, watersheds, water resources, and fish and wildlife resources of the region. Upon completion, students should be able to demonstrate comprehension of the natural history and the integration of the natural resources of the region. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>BIO 163</b>	<b>Basic Anatomy and Physiology</b>	<b>4</b>	<b>2</b>	<b>5</b>
Prerequisites: None				
Corequisites: None				
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				

Course  
Descriptions

	<b>BIO 168</b>	<b>Anatomy and Physiology I</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	None			
	Corequisites:	None			
Course	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.				
Descriptions					
	<b>BIO 169</b>	<b>Anatomy and Physiology II</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	BIO 168			
	Corequisites:	None			
	This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement transferability as a premajor and/or elective course requirement.				
	<b>BIO 173</b>	<b>Microbes in World Affairs</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	BIO 110 or BIO 111			
	Corequisites:	None			
	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.				
	<b>BIO 175</b>	<b>General Microbiology</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	BIO 110, BIO 111, BIO 163, BIO 165, BIO 168			
	Corequisites:	None			
	This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>BIO 180</b>	<b>Biological Chemistry</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	BIO 111 and BIO 112 or BIO 168 and BIO 169 or BIO 175			
	Corequisites:	None			
	This course provides an introduction to basic biochemical processes in living systems. Topics include properties of carbohydrates, lipids, proteins, nucleic acids, vitamins, and buffers, with emphasis on biosynthesis, degradation, function, and equilibrium. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				

<b>BIO 223</b>	<b>Field Botany</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: BIO 112				
Corequisites: None				
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 pre-major and/or elective course requirement.				
<b>BIO 224</b>	<b>Local Flora Spring</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>BIO 225</b>	<b>Local Flora Summer</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>BIO 226</b>	<b>Local Flora Fall</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>BIO 243</b>	<b>Marine Biology</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: BIO 110 or BIO 111				
Corequisites: None				
This course covers the physical and biological components of the marine environment. Topics include major habitats, the diversity of organisms, their biology and ecology, marine productivity, and the use of marine resources by humans. Upon completion, students should be able to identify various marine habitats and organisms and to demonstrate a knowledge of their biology and ecology. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>BIO 250</b>	<b>Genetics</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: BIO 112				
Corequisites: None				
This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				

Course  
Descriptions

	<b>BIO 271</b>	<b>Pathophysiology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: BIO 163, BIO 166, or BIO 169				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>BIO 275</b>	<b>Microbiology</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: BIO 110, BIO 112, BIO 163, BIO 165, or BIO 168				
	Corequisites: None				
	This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>BIO 280</b>	<b>Biotechnology</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: BIO 111 or CHM 151				
	Corequisites: None				
	This course provides experience in selected laboratory procedures. Topics include proper laboratory techniques in biology and chemistry. Upon completion, students should be able to identify laboratory techniques and instrumentation in basic biotechnology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
	<b>BIO 292</b>	<b>Selected Topics in Biology</b>	<b>1</b>	<b>6</b>	<b>2</b>
	Prerequisites: BIO 110, BIO 111, BIO 163, or BIO 168				
	Corequisites: None				
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.				
	<b>BIO 297</b>	<b>Seminar in Biology</b>	<b>1</b>	<b>6</b>	<b>2</b>
	Prerequisites: BIO 110, BIO 111, BIO 163, or BIO 168				
	Corequisites: None				
	This course provides an opportunity to explore topics of current interest. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.				

## Baking and Pastry Arts

	<b>BPA 120</b>	<b>Petit Fours and Pastries</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: CUL 110 and CUL 160				
	Corequisites: None				
	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.				

<b>BPA 130</b>	<b>European Cakes and Tortes</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 110 and CUL 160				
Corequisites: None				
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.				
<b>BPA 150</b>	<b>Artisan and Specialty Bread</b>	<b>1</b>	<b>6</b>	<b>4</b>
Prerequisites: CUL 110 and CUL 160				
Corequisites: None				
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.				
<b>BPA 165</b>	<b>Hot and Cold Desserts</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 160				
Corequisites: CUL 110				
This course covers the principles and techniques of sorbets and ice creams, souffles, cobblers, crisps and strudel dough products. Topics include bombes, parfaits, baked Alaska, sorbets, sherbets and granites; hand stretched strudel products, crepes, and hot and cold souffles. Upon completion, students should be able to prepare and plate hot and cold desserts with suitable sauces and garnishes.				
<b>BPA 210</b>	<b>Cake Design and Decorating</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 110 and CUL 160				
Corequisites: None				
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.				
<b>BPA 220</b>	<b>Confection Artistry</b>	<b>1</b>	<b>6</b>	<b>4</b>
Prerequisites: CUL 110 and CUL 160				
Corequisites: None				
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.				
<b>BPA 230</b>	<b>Chocolate Artistry</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 110 and CUL 160				
Corequisites: None				
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.				

Course  
Descriptions

	<b>BPA 240</b>	<b>Plated Desserts</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: BPA 120, BPA 130, CUL 110, and CUL 160				
	Corequisites: None				
Course	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.				
Descriptions	<b>BPA 250</b>	<b>Dessert and Bread Production</b>	<b>1</b>	<b>8</b>	<b>5</b>
	Prerequisites: CUL 110 and CUL 160				
	Corequisites: None				
	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.				
	<b>BPA 260</b>	<b>Pastry and Baking Marketing</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: BPA 210, BPA 240, and BPA 250				
	Corequisites: BPA 220 and BPA 230				
	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.				
<b>Blueprint Reading</b>					
	<b>BPR 111</b>	<b>Blueprint Reading</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>BPR 121</b>	<b>Blueprint Reading: Mechanical</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: BPR 111 or MAC 131				
	Corequisites: None				
	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.				
	<b>BPR 130</b>	<b>Blueprint Reading/Construction</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>BPR 135</b>	<b>Schematics and Diagrams</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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

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, Enrollment in the Biotechnology Program or Dept. Approval

Corequisites: None

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 and BTC 181

Corequisites: None

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 Biotechnology Fermentation I** 2 6 4

Prerequisites: BTC 181

Corequisites: None

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 Biotechnology Fermentation II** 2 6 4

Prerequisites: BTC 282

Corequisites: None

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, Enrollment in the Biotechnology Program or Dept. Approval

Corequisites: None

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.

Course  
Descriptions

	<b>BTC 286</b>	<b>Immunological Techniques</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	BTC 285			
	Corequisites:	None			
Course	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.				
Descriptions	Upon completion, students should be able to discuss the immune response, perform immunological assays, and make monoclonal antibody-producing hybridomas.				
	<b>BTC 288</b>	<b>Biotech Lab Experience</b>	<b>0</b>	<b>6</b>	<b>2</b>
	Prerequisites:	BIO 250 or BTC 270, and BTC 281, BTC 283, BTC 285 or BTC 286			
	Corequisites:	None			
	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

	<b>BUS 110</b>	<b>Introduction to Business</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	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.				
	<b>BUS 115</b>	<b>Business Law I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>BUS 116</b>	<b>Business Law II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	BUS 115			
	Corequisites:	None			
	This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.				
	<b>BUS 135</b>	<b>Principles of Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the workplace.				

**\*BUS 137 Principles of Management 3 0 3**

Prerequisites: None

Corequisites: None

This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management.

**BUS 147 Business Insurance 3 0 3**

Prerequisites: None

Corequisites: None

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

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

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 217 Employment Law and Regulations 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organizational policy for compliance and assure that decisions are not contrary to law.

**BUS 225 Business Finance 2 2 3**

Prerequisites: ACC 120

Corequisites: None

This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

**BUS 230 Small Business Management 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces the challenges of entrepreneurship including the start-up and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

Course

Descriptions

	<b>BUS 234</b>	<b>Training and Development</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
Course	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.				
Descriptions	<b>*BUS 239</b>	<b>Business Applications Seminar</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	ACC 120, BUS 115, BUS 137, either ECO 151, 251 or 252, and *MKT 120			
	Corequisites:	None			
	This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the workplace.				
	<b>BUS 240</b>	<b>Business Ethics</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	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.				
	<b>BUS 256</b>	<b>Recruit Select and Per Plan</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining 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.				
	<b>BUS 258</b>	<b>Compensation and Benefits</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.				
	<b>BUS 259</b>	<b>HRM Applications</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	BUS 217, BUS 234, BUS 256, and BUS 258			
	Corequisites:	None			
	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: ENG 111 and OST 080 or OST 131

Corequisites: None

This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the workplace.

Course

**BUS 270 Professional Development 3 0 3**

Prerequisites: None

Corequisites: None

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.

Descriptions

## Cabinetmaking

**CAB 111 Cabinetmaking I 4 9 7**

Prerequisites: None

Corequisites: None

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.

## Carpentry

**CAR 110 Introduction to Carpentry 2 0 2**

Prerequisites: None

Corequisites: None

This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods.

**CAR 111 Carpentry I 3 15 8**

Prerequisites: None

Corequisites: None

This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. This is a diploma-level course.

**CAR 112 Carpentry II 3 15 8**

Prerequisites: CAR 111

Corequisites: None

This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. This is a diploma-level course.

	<b>CAR 113</b>	<b>Carpentry III</b>	<b>3</b>	<b>9</b>	<b>6</b>
	Prerequisites: CAR 111				
	Corequisites: None				
Course	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.				
Descriptions	<b>CAR 114</b>	<b>Residential Building Codes</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CAR 115</b>	<b>Residential Planning/Estimating</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: BPR 130				
	Corequisites: None				
	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.				

## Computer Crime

	<b>CCT 110</b>	<b>Introduction to Cyber Crime</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CCT 121</b>	<b>Computer Crime Investigation</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CCT 231</b>	<b>Technology Crimes and Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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: None

Corequisites: None

This course is the first of two courses covering repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include safety practices, CPU/memory/bus identification, disk subsystem, 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 211 Computer Upgrade/Repair II** 2 3 3

Prerequisites: CET 111

Corequisites: None

This course is the second of two courses covering repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics 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

Corequisites: None

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 121 Foundations of Chemistry** 3 0 3

Prerequisites: None

Corequisites: CHM 121A

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

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 121 and CHM 121A

Corequisites: CHM 130A

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.

Course  
Descriptions

	<b>CHM 130A</b>	<b>General, Organic, and Biochemistry Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: CHM 130				
Course	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.				
Descriptions					
	<b>CHM 132</b>	<b>Organic and Biochemistry</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: CHM 151				
	Corequisites: None				
	This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>CHM 135</b>	<b>Survey of Chemistry I</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CHM 136</b>	<b>Survey of Chemistry II</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: CHM 135				
	Corequisites: None				
	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.				
	<b>CHM 151</b>	<b>General Chemistry I</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: High school chemistry or CHM 121 and CHM 121A				
	Corequisites: MAT 161 OR MAT 171				
	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.				

<b>CHM 152</b>	<b>General Chemistry II</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: CHM 151				
Corequisites: None				
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
<b>CHM 251</b>	<b>Organic Chemistry I</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: CHM 152				
Corequisites: None				
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of 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.				
<b>CHM 252</b>	<b>Organic Chemistry II</b>	<b>3</b>	<b>3</b>	<b>4</b>
Prerequisites: CHM 251				
Corequisites: None				
This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>CHM 265</b>	<b>Instrumental Analysis</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: CHM 251				
Corequisites: None				
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.				
<b>CHM 271</b>	<b>Biochemical Principles</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: CHM 252				
Corequisites: None				
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

	<b>CIS 070</b>	<b>Fundamentals of Computing</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites:	None			
	Corequisites:	None			
Course	This course covers fundamental functions and operations of the computer. Topics include identification of components, overview of operating systems, and other basic computer operations. Upon completion, students should be able to operate computers, access files, print documents, and perform basic applications operations.				
Descriptions					
	<b>CIS 110</b>	<b>Introduction to Computers</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	Basic computer literacy necessary (if you do not have basic skills, CIS 070 will give you the foundation needed for this course) and tested computer keyboarding proficiency.			
	Corequisites:	None			
	This course provides an introduction to computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. Microsoft Office will be used. This includes Word, Excel, Access, and PowerPoint. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.				
	<b>CIS 111</b>	<b>Basic PC Literacy</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	Tested computer keyboarding proficiency			
	Corequisites:	None			
	This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills. This course is intended for those who have not received credit for CIS 110.				
	<b>CIS 113</b>	<b>Computer Basics</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites:	Tested computer keyboarding proficiency			
	Corequisites:	None			
	This course introduces basic computer usage for non-computer majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate competence in basic computer applications sufficient to use computer-assisted instructional software.				
	<b>CIS 115</b>	<b>Introduction to Programming and Logic</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	MAT 070			
	Corequisites:	None			
	This course introduces computer programming and problem solving in a programming environment, including an introduction to operating systems, text editor, and a language translator. Topics include language syntax, data types, program organization, problem-solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-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 sciences/mathematics.				
	<b>CIS 120</b>	<b>Spreadsheet I</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	CIS 110 or CIS 111 or OST 137 and basic math course or placement test			
	Corequisites:	None			
	This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. This course covers advanced functions, charting, macros, databases, and linking.				

<b>CIS 125</b>	<b>CORE Integrated Software</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110				
Corequisites: None				
This course instructs the student in the CORE Windows or Linux based program suites for word processing, spreadsheet, database, and presentation software. Emphasis is placed on CORE level development of database, spreadsheet, word processing, and presentation applications to utilize data sharing. Upon completion, each student will demonstrate competencies using business simulations which employ data sharing among the database, spreadsheet, word processing, and presentation software. This course will emphasize the use of word processing and spreadsheet software.				
<b>CIS 130</b>	<b>Survey of Operating Systems</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
The course covers operating system concepts which are necessary for maintaining and using computer systems. Topics include disk, file, and directory structures; installation and setup; resource allocation, optimization, and configuration; system security; and other related topics. Upon completion, students should be able to install and configure operating systems and optimize performance.				
<b>CIS 143</b>	<b>XML Technology</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110 or CIS 111				
Corequisites: None				
This course is designed to introduce students to XML and related internet technologies, including Simple API for XML (SAX). 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.				
<b>CIS 145</b>	<b>Operating System Single User</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110 or CIS 111				
Corequisites: CIS 130				
This course introduces operating systems 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 system functions at the support level in a single-user environment.				
<b>CIS 152</b>	<b>Database Concepts and Applications</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110, CIS 111 or CIS 115				
Corequisites: None				
This course introduces database design and creation using a database management systems product. Topics include database terminology, usage in industry, design theory, types of DBMS models, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to create simple database tables, queries, reports, and forms which follow acceptable design practices.				
<b>CIS 155</b>	<b>Database Theory/Analysis</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 152 or CIS 157				
Corequisites: None				
This course introduces database design theories and analyses. Emphasis is placed on data dictionaries, normalization, data integrity, and data modeling. Upon completion, students should be able to design normalized database structures that exhibit data integrity. Topics include manipulating multiple tables, advanced queries, screens and reports, linking, and command files.				

	<b>CIS 157</b>	<b>Database Programming I</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 152 and CIS 155				
	Corequisites: None				
Course	This course is designed to develop programming proficiency in a selected DBMS. Emphasis is placed on the Data Definition Language (DDL) and Data Manipulation Language (DML) of the DBMS as well as on report generation. Upon completion, students should be able to write programs which create, update, and produce reports representative of industry requirements.				
Descriptions	<b>CIS 163</b>	<b>Prog Interfaces Internet</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 110 or CIS 111, and CIS 115				
	Corequisites: None				
	This course creates interactive multimedia applications and applets for the Internet using web-specific languages. Emphasis is placed on audio, video, graphic, and network resources and various file formats. Upon completion, students should be able to create an interactive multimedia application or applet for the Internet.				
	<b>CIS 165</b>	<b>Desktop Publishing I</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 110 and either OST 136 or CIS 125				
	Corequisites: None				
	This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications; hardware/software compatibility; and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.				
	<b>CIS 170</b>	<b>Technical Support Functions I</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 115, CIS 125, and CIS 152				
	Corequisites: None				
	This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques, support technologies and on Help Desk services to support users of computing technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems.				
	<b>CIS 215</b>	<b>Hardware Installation and Maintenance</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIS 110, CIS 111, or CIS 115 and CIS 130				
	Corequisites: None				
	This course covers the basic hardware of a personal computer, including operations and interactions with software. Topics include component identification, the memory system, peripheral installation and configuration, preventive maintenance, and diagnostics and repair. Upon completion, students should be able to select appropriate computer equipment, upgrade and maintain existing equipment, and troubleshoot and repair non-functioning personal computers.				
	<b>CIS 217</b>	<b>Computer Training and Support</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 125				
	Corequisites: None				
	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.				
	<b>CIS 236</b>	<b>A+ Certification Preparation</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 215 or CIS 135				
	Corequisites: None				
	This course is designed to prepare students for the A+ Hardware certification exam. Topics include portable computer systems, installing and troubleshooting printers, basic networking concepts and procedures, testing electrical components, using diagnostics utilities, and achieving customer satisfaction. Upon				



# Civil Engineering

	<b>CIV 110</b>	<b>Statics/Strength of Materials</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites: MAT 121				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>CIV 111</b>	<b>Soils and Foundations</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIV 110 or MEC 250				
	Corequisites: None				
	This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.				
	<b>CIV 125</b>	<b>Civil/Surveying CAD</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites: CIS 111, EGR 115, and SRV 110				
	Corequisites: None				
	This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.				
	<b>CIV 210</b>	<b>Engineering Materials</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.				
	<b>CIV 211</b>	<b>Hydraulics and Hydrology</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIV 110 or MEC 250				
	Corequisites: None				
	This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.				
	<b>CIV 212</b>	<b>Environmental Planning</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIV 211				
	Corequisites: None				
	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.				
	<b>CIV 215</b>	<b>Highway Technology</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: SRV 111				
	Corequisites: CIV 211				
	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.				

<b>CIV 220</b>	<b>Basic Structural Concepts</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: CIV 110 or MEC 250				
Corequisites: None				
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.				
<b>CIV 221</b>	<b>Steel and Timber Design</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: CIV 110 or MEC 250				
Corequisites: None				
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.				
<b>CIV 222</b>	<b>Reinforced Concrete</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: CIV 110 or MEC 250				
Corequisites: None				
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.				
<b>CIV 230</b>	<b>Construction Estimating</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: ARC 111, CIS 110, CIS 111, or ERG 115				
Corequisites: None				
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.				
<b>CIV 240</b>	<b>Project Management</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: EGR 115				
Corequisites: None				
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.				
<b>CIV 250</b>	<b>Civil Engineering Technology Project</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: Successful completion of three semesters of the Civil Engineering Technology Program				
Corequisites: None				
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.				

# Criminal Justice

	<b>CJC 100</b>	<b>Basic Law Enforcement Training</b>	<b>8</b>	<b>30</b>	<b>18</b>
	Prerequisites:	RED 090			
	Corequisites:	None			
Course	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.				
Descriptions					
	<b>CJC 111</b>	<b>Introduction to Criminal Justice</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>CJC 112</b>	<b>Criminology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.				
	<b>CJC 113</b>	<b>Juvenile Justice</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.				
	<b>CJC 114</b>	<b>Investigative Photography</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.				
	<b>CJC 120</b>	<b>Interviews/Interrogations</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.				

**CJC 121 Law Enforcement Operations 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. 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.

Course  
Descriptions**CJC 122 Community Policing 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

**CJC 131 Criminal Law 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements. There will be an emphasis on North Carolina law.

**CJC 132 Court Procedure and Evidence 3 0 3**

Prerequisites: None

Corequisites: None

This course covers judicial structure/process, procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

**CJC 141 Corrections 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CJC 151 Introduction to Loss Prevention 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces the concepts and methods related to commercial and private security systems. Topics include the historical, philosophical, and legal basis of security, with emphasis on security surveys, risk analysis, and associated functions. Upon completion, students should be able to demonstrate and understand security systems, risk management, and the laws relative to loss prevention.

	<b>CJC 211</b>	<b>Counseling</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
Course	This course introduces the basic elements of counseling and specific techniques applicable to the criminal justice setting. Topics include observation, listening, recording, interviewing, and problem exploration necessary to form effective helping relationships. Upon completion, students should be able to discuss and demonstrate the basic techniques of counseling.				
Descriptions	<b>CJC 212</b>	<b>Ethics and Community Relations</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to demonstrate the ability to apply ethical considerations to the decision-making process in identifiable criminal justice situations.				
	<b>CJC 213</b>	<b>Substance Abuse</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CJC 214</b>	<b>Victimology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>CJC 215</b>	<b>Organization and Administration</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: CJC 111				
	Corequisites: None				
	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.				
	<b>CJC 216</b>	<b>Computer System Security Investigation</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: CJC 116				
	Corequisites: None				
	This course covers the investigation of illegal activity affecting computer systems and security. Emphasis will be placed on design techniques, security architecture, discretionary and mandatory controls, memory protection, distributed systems and legal issues pertaining to computer operations security. Upon completion, students should be able to recognize and identify potential problem areas in computer systems and provide assistance in solving security problems. This course is a unique concentration requirement in the Financial Crime/ Computer Fraud concentration in the Criminal Justice Technology Program.				

<b>CJC 217</b>	<b>Network Security Troubleshooting</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: CJC 216				
Corequisites: None				
This course enables students to apply the investigative skills they have learned to operating systems and networks. Topics will include security technologies for multiple platforms, encryption techniques and authentication and key distribution systems. Upon completion, students will be able to contrast competing schemes and describe mistakes made in design, which could lead to criminal activity. This course is a unique concentration requirement in the Financial Crime/Computer Fraud concentration in the Criminal Justice Technology Program.				
<b>CJC 221</b>	<b>Investigative Principles</b>	<b>3</b>	<b>2</b>	<b>4</b>
Prerequisites: CJC 131				
Corequisites: None				
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.				
<b>CJC 222</b>	<b>Criminalistics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>CJC 223</b>	<b>Organized Crime</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>CJC 225</b>	<b>Crisis Intervention</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>CJC 231</b>	<b>Constitutional Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.				

Course  
Descriptions

	<b>CJC 232</b>	<b>Civil Liability</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions	<b>CJC 240</b>	<b>Law Enforcement Management and Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: BUS 253				
	Corequisites: None				
	This course provides a study of the best known methods and practices of police leadership and management. Topics include the role of the manager in law enforcement, communications, time-management in law enforcement, managing problems, training and law enforcement productivity. Upon completion, students should be able to identify and discuss methods and practices capable of moving law enforcement agencies forward into the twenty-first century.				
	<b>CJC 245</b>	<b>Friction Ridge Analysis</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the basic elements of fingerprint technology and techniques applicable to the criminal justice field. Topics include the history and meaning of fingerprints, pattern types and classification, filing sequence, searching and referencing. Upon completion, students should be able to discuss and demonstrate the fundamental techniques of basic fingerprint technology.				
	<b>CJC 251</b>	<b>Forensic Chemistry I</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides a study of the fundamental concepts of chemistry as it relates to forensic science. Topics include physical and chemical properties of substances, metric measurements, chemical changes, elements, compounds, gases, and atomic structure. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of forensic chemistry.				
	<b>CJC 252</b>	<b>Forensic Chemistry II</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: CJC 251				
	Corequisites: None				
	This course provides a study of specialized areas of chemistry specifically related to forensic science. Topics include properties of light, emission and absorption spectra, spectrophotometry, gas and liquid chromatography, and related topics in organic and biochemistry. Upon completion, students should be able to demonstrate an understanding of specialized concepts in forensic chemistry.				
	<b>CJC 293</b>	<b>Selected Topics in Criminal Justice</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.				

## Construction Management

	<b>*CMT 210</b>	<b>Professional Construction Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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

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.

Course  
Descriptions

**\*CMT 214 Planning and Scheduling 3 0 3**

Prerequisites: CMT 210 and BPR 130

Corequisites: None

This course covers the need for the process of planning construction projects, as well as the mechanics and vocabulary of project scheduling. Topics include project preplanning, scheduling format, planning for production, short interval planning, schedule updating and revising, and computer-based planning and scheduling. Upon completion, the student should be able to understand the need for planning and scheduling, the language and logic of scheduling, and use of planning skills.

**\*CMT 216 Costs and Productivity 3 0 3**

Prerequisites: CMT 210

Corequisites: None

This course covers the relationships between time, work completed, work-hours spent, schedule duration, equipment hours, and materials used. Topics include production rates, productivity unit rates, work method improvements, and overall total project cost control. Upon completion, the student should be able to demonstrate an understanding of how costs may be controlled and productivity improved on a construction project.

**\*CMT 218 Human Relations Issues 3 0 3**

Prerequisites: CMT 210

Corequisites: None

This course provides instruction on human relations issues as they relate to construction project supervision. Topics include relationships, human behavior, project staffing issues, teamwork, effective communication networks, laws and regulations, and identifying and responding to conflict, crisis, and discipline. Upon completion, the student will demonstrate an understanding of the importance of human relations in the success of a construction project.

## Cooperative Education

**COE 111 CA Co-op Work Experience I 0 0 10 1**

Prerequisites: Departmental approval

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For CAD Systems Technology students only.

**\*COE 111 EC Co-op Work Experience I 0 0 10 1**

Prerequisites: EDU 111

Corequisites: COE 115 EC

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. This supervised experience gives the student an opportunity to apply age-appropriate principles of child development, relationships, and learning in a child care environment.

	<b>COE 111 HE</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
	Prerequisites: Departmental approval					
	Corequisites: None					
Course	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. For Heavy Equipment and Transport Technology students only.					
Descriptions						
	<b>*COE 111 MT</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
	Prerequisites: Completed first year curriculum					
	Corequisites: None					
	This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. This co-op work experience will be a transcription internship.					
	<b>*COE 111 SS</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
	Prerequisites: Departmental approval					
	Corequisites: COE 115 SS					
	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. Intended for students in the Social Service Associate program.					
	<b>*COE 112 A</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
	Prerequisites: Departmental approval					
	Corequisites: None					
	This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.					
	<b>COE 112 MA</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
	Prerequisites: None					
	Corequisites: None					
	This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.					
	<b>COE 112CU</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
	Prerequisites: CUL 110, CUL 110A, CUL 140, CUL 160, CUL 170, CUL 240, CUL 240A or Departmental Approval					
	Corequisites: None					
	This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The practical culinary training experience provides the student an opportunity to apply and enhance the skills and methodologies of the professional culinarian.					

**COE 112HR Co-op Work Experience I 0 0 20 2**

Prerequisites: CUL 110, CUL 110A, CUL 135, CUL 135A, HRM 120, HRM 130, HRM 192, HRM 220 or Departmental Approval

Corequisites: None

This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The practical hospitality in-field training experience provides the student an opportunity to apply and enhance skills and methodologies required of the hospitality professional.

**COE 112VT Co-op Work Experience 0 0 20 0**

Prerequisites: Successful completion of the first five semesters of the Veterinary Technology Program

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The cooperative experience will allow the student to apply skills learned in the Veterinary Medical technology courses to on-the-job work experience.

**\*COE 113 A Co-op Work Experience I 0 0 30 3**

Prerequisites: Departmental approval

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.

**\*COE 115 EC Work Experience Seminar I 1 0 0 1**

Prerequisites: EDU 111

Corequisites: COE 111 EC

This course provides students with an opportunity to evaluate experiences in the child care setting and discuss curriculum components. Emphasis is placed on planning and carrying out developmentally appropriate activities. Upon completion, students should be able to plan, conduct, and evaluate educational experiences in the early childhood setting.

**\*COE 115 SS Work Experience Seminar I 1 0 0 1**

Prerequisites: Departmental approval

Corequisites: COE 111 SS

This course provides a forum for students to share information on their social service agency work experience. Emphasis is placed upon relating classroom concepts to the work experience. Upon completion, the student will demonstrate an understanding of the nature of various agency work environments.

**\*COE 121 EC Co-op Work Experience II 0 0 10 1**

Prerequisites: COE 111 EC and COE 115 EC or departmental approval

Corequisites: COE 125 EC

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. Students will demonstrate care-giving skills including managing children's behavior and meeting individual needs in a child care setting chosen by the department.

Course	<b>*COE 121 SS Co-op Work Experience II</b>	0	0	10	1
Descriptions	Prerequisites: COE 111 SS Corequisites: COE 125 SS 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. Intended for students enrolled in the Social Services program.				
	<b>COE 122 CM Co-op Work Experience II</b>	0	0	20	2
	Prerequisites: Departmental approval Corequisites: None This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Heavy Equipment and Transport Technology students only.				
	<b>COE 122 HE Co-op Work Experience II</b>	0	0	20	2
	Prerequisites: Departmental approval Corequisites: None This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Construction Management Technology students only.				
	<b>COE 122 ME Co-op Work Experience II</b>	0	0	20	3
	Prerequisites: Departmental approval Corequisites: None This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Mechanical Engineering Technology students only.				
	<b>COE 123 A Co-op Work Experience II</b>	0	0	30	3
	Prerequisites: Departmental approval Corequisites: None This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.				
	<b>*COE 125 EC Work Experience Seminar II</b>	1	0	0	1
	Prerequisites: COE 111 EC and COE 115 EC Corequisites: COE 121 EC This course provides an opportunity for students to plan and evaluate educational activities in their co-op experience. Emphasis is placed on planning developmentally appropriate activities for young children. Upon completion, students should be able to plan, carry out and evaluate developmentally appropriate activities for young children.				

**\*COE 125 SS Work Experience Seminar II** 1 0 0 1

Prerequisites: COE 115 SS

Corequisites: COE 121 SS

This course provides a forum for students to share information on their agency work experience. Emphasis is placed upon relating classroom concepts to the work experience. Upon completion, the student will demonstrate an understanding of the nature of various agency work environments. Intended for students enrolled in the Social Services program.

**\*COE 131 EC Co-op Work Experience III** 0 0 10 1

Prerequisites: Successful completion of first four semesters of EDU or departmental approval

Corequisites: COE 135 EC

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. In this capstone course, students must demonstrate the competencies needed by an Early Childhood Associate and identified for the program.

**\*COE 132 ME Co-op Work Experience III** 0 0 20 2

Prerequisites: None

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Mechanical Engineering Technology students only.

**\*COE 135 EC Work Experience Seminar III** 1 0 0 1

Prerequisites: COE 121 EC and COE 125 EC

Corequisites: COE 131 EC

This course provides an opportunity for the student to discuss topics related to their co-op experience and prepare to go into the work force. Emphasis is placed on conducting a developmentally appropriate program, resume writing, and job interviewing skills. Upon completion, the student should be able to perform work related competencies in working with young children.

**COE 211 OS Co-op Work Experience IV** 0 0 10 1

Prerequisites: Departmental approval

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The cooperative experience will allow the student to apply skills learned in Office Systems Technology courses to on-the-job work experience.

**COE 212 IS Co-op Work Experience IV** 0 0 20 2

Prerequisites: Departmental approval

Corequisites: None

This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The cooperative experience will allow IS students to apply skills learned in their courses to on-the-job work experience.

Course  
Descriptions

	<b>COE 212 ME</b>	<b>Work Experience IV</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
	Prerequisites: Departmental approval					
	Corequisites: None					
Course	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. The cooperative experience will allow ME students to apply skills learned in their courses to on-the-job work experience.					
Descriptions						
	<b>COE 213 BT</b>	<b>Co-op Work Experience IV</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>
	Prerequisites: BIO 250 or BTC 270, and BTC 281, BTC 283, BTC 285 or BTC 286					
	Corequisites: None					
	This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.					
	<b>COE 215 IS</b>	<b>Work Experience Seminar IV</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
	Prerequisites: Third semester status and departmental approval					
	Corequisites: COE 211, COE 212 or COE 213					
	The working student will discuss issues related to Information Systems Technology as well as challenges of the workplace.					
	<b>COE 215 OS</b>	<b>Work Experience Seminar IV</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
	Prerequisites: Third semester status and departmental approval					
	Corequisites: COE 211 OS					
	The working student will discuss issues related to Office Systems Technology careers. Problems encountered in the workplace will be discussed as well as solutions.					

## Communications

	<b>COM 120</b>	<b>Interpersonal Communication</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides 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.				
	<b>COM 231</b>	<b>Public Speaking</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in speech/communications.				

**COM 250      Public Communication      3      0      3**

Prerequisites: ENG 113 or ENG 114 and COM 120 or COM 231

Corequisites: None

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, students should be able to construct, present, and critique public communications that are complex, dynamic and purposeful. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

Course  
Descriptions

## Computer Programming

**CSC 120      Computing Fundamentals I      3      2      4**

Prerequisites: MAT 080 or MAT 090

Corequisites: None

This course provides the essential foundation for the discipline of computing and a program of study in computer science, including the role of the professional. Topics include algorithm design, data abstraction, searching and sorting algorithms, and procedural programming techniques. Upon completion, students should be able to solve problems, develop algorithms, specify data types, perform sorts and searches, and use an operating system. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**CSC 130      Computing Fundamentals II      3      2      4**

Prerequisites: CSC 120

Corequisites: None

This course provides in-depth coverage of the discipline of computing and the role of the professional. Topics include software design methodologies, analysis of algorithm and data structures, searching and sorting algorithms, and file organization methods. Upon completion, students should be able to use software design methodologies and choice of data structures and understand social/ethical responsibilities of the computing professional. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**CSC 134      C++ Programming      2      3      3**

Prerequisites: None

Corequisites: None

This course introduces object-oriented computer programming using the C++ programming language. Topics include input/output operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test, and debug C++ language programs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).

**CSC 139      Visual BASIC Programming      2      3      3**

Prerequisites: CIS 115

Corequisites: None

This course introduces event-driven computer programming using the Visual BASIC programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, forms, sequential files, and other related topics. Upon completion, students should be able to design, code, test, and debug Visual BASIC language programs.

	<b>CSC 148</b>	<b>JAVA Programming</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIS 115				
	Corequisites: None				
Course	This course introduces computer programming using the JAVA language. Topics include selection, iteration, arithmetic and logical operators, classes, inheritance, methods, arrays, user interfaces, basic applet creation and other related topics.				
Descriptions	Upon completion, students should be able to design, code, test, and debug JAVA language problems. The course will include additional topics as needed in order to focus on internet programming with JAVA.				
	<b>CSC 239</b>	<b>Advanced Visual BASIC</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CIS 139				
	Corequisites: None				
	This course is a continuation of CSC 139 using Visual BASIC with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.				
	<b>CSC 248</b>	<b>Advanced Internet Programming</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: CSC 134 or CSC 140 or CSC 141 or CSC 148 or CSC 160				
	Corequisites: None				
	This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support network applications. Upon completion, students should be able to design, code, debug, and document network-based programming solutions to various real-world problems using an appropriate programming language.				
	<b>CSC 285</b>	<b>Programming Project</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: CIS 115, CIS 286 and second-year status				
	Corequisites: None				
	This course provides an opportunity to complete a significant Programming project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete a project from the definition phase through implementation.				
	<b>CSC 292</b>	<b>Selected Topics in Computer Programming</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: CIS 110 and second-year status				
	Corequisites: None				
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Students will use programming skills to complete a project from the definition phase through implementation.				

## Culinary

	<b>CUL 110</b>	<b>Sanitation and Safety</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: CUL 110A				
	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

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

This course covers the principles of nutrition and its relationship to the food-service 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

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 students: CUL 140, HRM 220; HRM students: CUL 142, HRM 220

Corequisites: None

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: CUL students: CUL 180; HRM students: CUL 142

Corequisites: CUL students: CUL 250, CUL 135A; HRM students: CUL135A

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: CUL students: CUL 180; HRM students: CUL 142

Corequisites: CUL students: CUL 135, CUL 250; HRM students: CUL 135

This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.

Course  
Descriptions

Course	<b>*CUL 140 Basic Culinary Skills</b>	2	6	5
Descriptions	Prerequisites: None Corequisites: CUL110, CUL110A 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.			
	<b>CUL 142 Fundamentals of Food</b>	2	6	5
	Prerequisites: None Corequisites: CUL 110, CUL 110A, HRM 192 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 □ la carte production enhances student service skills.			
	<b>*CUL 150 Food Science</b>	1	2	2
	Prerequisites: None Corequisites: CUL 110, CUL 110A, or departmental approval 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.			
	<b>CUL 160 Baking I</b>	1	4	3
	Prerequisites: None Corequisites: CUL 110 or departmental approval 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.			
	<b>*CUL 170 Gardemanger I</b>	1	4	3
	Prerequisites: CUL 110, CUL 110A Corequisites: None This course introduces basic cold food preparation techniques and pantry production. Topics include salads, sandwiches, appetizers, dressings, basic garnishes, cheeses, cold sauces, and related food items. Upon completion, students should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.			
	<b>*CUL 180 International and American Regional Cuisine</b>	1	8	5
	Prerequisites: CUL 140, CUL 240, CUL 240A, COE 112 CU Corequisites: None This course provides practical experience in the planning, preparation, and service of representative foods from different countries and regions of America. Emphasis is placed on eating habits, indigenous foods and customs, nutritional concerns, and traditional equipment. Upon completion, students should be able to research and execute international and domestic menus. Weekly participation in buffets, banquets, and a la carte production enhances students' supervisory and technical skills.			

<b>CUL 214</b>	<b>Wine Appreciation</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: CUL 180 or departmental approval				
Corequisites: None				
This course provides comprehensive and detailed information about wine from all the major wine producing countries. Emphasis is placed on the history of wine, production characteristics, laws, and purchasing and storing requirements. Upon completion, students should be able to determine what wines complement various cuisines and particular tastes. This course will also cover other beverages and legal aspects pertaining to beverage operations.				
<b>*CUL 240</b>	<b>Advanced Culinary Skills</b>	<b>1</b>	<b>8</b>	<b>5</b>
Prerequisites: CUL 110, CUL 110A, CUL 140				
Corequisites: CUL 240A				
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.				
<b>CUL 240A</b>	<b>Advanced Culinary Skills Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: CUL 140, CUL 110, CUL 110A				
Corequisites: CUL 240				
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.				
<b>*CUL 250</b>	<b>Classical Cuisine</b>	<b>1</b>	<b>8</b>	<b>5</b>
Prerequisites: CIS 110, COE 112 CU, CUL 120, CUL 130, CUL 140, CUL 180, CUL 240, CUL 260, CUL 70, HRM 145 and HRM 220				
Corequisites: CUL 135, CUL 135A and CUL 214				
This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d'hôte menus, signature dishes, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting. This course includes weekly a la carte service encompassing contemporary and classical preparation and a capstone final exam.				
<b>*CUL 260</b>	<b>Baking II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 110, CUL 110A, CUL 160				
Corequisites: None				
This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.				
<b>*CUL 270</b>	<b>Gardemanger II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 170, CUL 240 and CUL 240A				
Corequisites: None				
This course is a continuation of CUL 170. Topics include pâtés, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapés, hors d'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.				

Course  
Descriptions

**\*CUL 290      Competition Fundamentals      1      4      3**  
 Prerequisites: CUL students: CUL 110, CUL 110A, CUL 140, tested knife skill proficiency and departmental approval; BPA students: CUL 110, CUL 110A, CUL 140, tested knife skill proficiency and departmental approval

Corequisites: None

Course

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.

Descriptions

## Design Drafting

**\*DDF 211      Design Drafting I      2      6      4**  
 Prerequisites: DFT 112

Corequisites: None

This course emphasizes design processes for finished products. Topics include data collection from manuals and handbooks, efficient use of materials, design sketching, specifications, and vendor selection. Upon completion, students should be able to research and plan the design process for a finished product.

**DDF 221      Design Drafting Project      0      4      2**

Prerequisites: DFT 111, DFT 112, DFT 151

Corequisites: None

This course incorporates ideas from concept to final design. Topics include reverse engineering, design for manufacturability, and mock-up construction. Upon completion, students should be able to generate working drawings and models based on physical design parameters.

**DDF 252      Advanced Solid Modeling      2      2      3**

Prerequisites: DFT 153 or DFT 154

Corequisites: None

This course introduces advanced solid modeling and design software. Topics include design principles, design constraints, work planes, view generation, and model shading and rendering. Upon completion, students should be able to create advanced solid models.

## Developmental Disabilities

**DDT 110      Developmental Disabilities      3      0      0      3**

Prerequisites: None

Corequisites: None

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

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.

<b>*DEN 102</b>	<b>Dental Materials</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>5</b>
Prerequisites: None					
Corequisites: None					
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.					
<b>DEN 103</b>	<b>Dental Sciences</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: None					
Corequisites: None					
This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. This is a diploma-level course.					
<b>*DEN 104</b>	<b>Dental Health Education</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
Prerequisites: DEN 111					
Corequisites: None					
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.					
<b>*DEN 105</b>	<b>Practice Management</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: None					
Corequisites: None					
This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. This is a diploma-level course.					
<b>*DEN 106</b>	<b>Clinical Practice I</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>5</b>
Prerequisites: DEN 101 and DEN 111					
Corequisites: DEN 102, DEN 104, and DEN 112					
This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory, laboratory, and clinical skills in a dental setting. This is a diploma-level course.					
<b>*DEN 107</b>	<b>Clinical Practice II</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>5</b>
Prerequisites: DEN 106					
Corequisites: None					
This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. This is a diploma-level course.					

Course  
Descriptions

	<b>DEN 110</b>	<b>Orofacial Anatomy</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: None					
Course	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.					
Descriptions	<b>DEN 111</b>	<b>Infection/Hazard Control</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: None					
	Corequisites: DEN 101 or DEN 121					
	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.					
	<b>DEN 112</b>	<b>Dental Radiography</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: Enrollment in the Dental Hygiene or Dental Assisting programs					
	Corequisites: DEN 101 or DEN 110 and DEN 111					
	This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.					
	<b>DEN 120</b>	<b>Dental Hygiene Preclinic Lecture</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: Enrollment in the Dental Hygiene program					
	Corequisites: DEN 121					
	This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.					
	<b>*DEN 121</b>	<b>Dental Hygiene Preclinic Lab</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>
	Prerequisites: Enrollment in the Dental Hygiene program					
	Corequisites: DEN 120 and DEN 111					
	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.					
	<b>DEN 123</b>	<b>Nutrition/Dental Health</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: DEN 120 and DEN 130					
	Corequisites: None					
	This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.					

<b>DEN 124</b>	<b>Periodontology</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: DEN 110					
Corequisites: None					
This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.					
<b>*DEN 125</b>	<b>Dental Office Emergencies</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>
Prerequisites: None					
Corequisites: None					
This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, students should be able to recognize, assess, and manage various dental office emergencies and activate advanced medical support when indicated.					
<b>*DEN 130</b>	<b>Dental Hygiene Theory I</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: DEN 120					
Corequisites: DEN 131					
This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.					
<b>*DEN 131</b>	<b>Dental Hygiene Clinic I</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>3</b>
Prerequisites: DEN 121					
Corequisites: DEN 130					
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.					
<b>*DEN 140</b>	<b>Dental Hygiene Theory II</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: DEN 130					
Corequisites: DEN 141					
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.					
<b>*DEN 141</b>	<b>Dental Hygiene Clinic II</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
Prerequisites: DEN 131					
Corequisites: DEN 140					
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.					
<b>*DEN 220</b>	<b>Dental Hygiene Theory III</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: BIO 175, DEN 140					
Corequisites: DEN 221					
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.					

Course  
Descriptions

	<b>*DEN 221</b>	<b>Dental Hygiene Clinic III</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
	Prerequisites:	DEN 141				
	Corequisites:	DEN 220				
Course	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.					
Descriptions	<b>DEN 222</b>	<b>General and Oral Pathology</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites:	BIO 163 or BIO 165 or BIO 168				
	Corequisites:	BIO 169				
	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.					
	<b>DEN 223</b>	<b>Dental Pharmacology</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites:	Enrollment in the Dental Hygiene program				
	Corequisites:	BIO 163 or BIO 165 or BIO 168				
	This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.					
	<b>*DEN 224</b>	<b>Materials and Procedures</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites:	DEN 111				
	Corequisites:	None				
	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.					
	<b>*DEN 230</b>	<b>Dental Hygiene Theory IV</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
	Prerequisites:	DEN 220				
	Corequisites:	DEN 231				
	This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.					
	<b>*DEN 231</b>	<b>Dental Hygiene Clinic IV</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
	Prerequisites:	DEN 221				
	Corequisites:	DEN 230				
	This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.					



Course	<b>DFT 117      Technical Drafting</b>	1	2	2
	Prerequisites: None			
	Corequisites: None			
	This course introduces basic drafting practices for non-drafting majors. Emphasis is placed on instrument use and care, shape and size description, sketching, and pictorials. Upon completion, students should be able to produce drawings of assigned parts.			
Descriptions	<b>DFT 119      Basic CAD</b>	1	2	2
	Prerequisites: None			
	Corequisites: None			
	This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings.			
	<b>DFT 151      CAD I</b>	2	3	3
	Prerequisites: None			
	Corequisites: None			
	This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing.			
	<b>DFT 152      CAD II</b>	2	3	3
	Prerequisites: DFT 151			
	Corequisites: None			
	This course is a continuation of DFT 151. Topics include advanced two-dimensional, three-dimensional, and solid modeling and extended CAD applications. Upon completion, students should be able to generate and manage CAD drawings and models to produce engineering documents.			
	<b>DFT 153      CAD III</b>	2	3	3
	Prerequisites: DFT 151 and DFT 152			
	Corequisites: None			
	This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models.			
	<b>DFT 192      Selected Topics in CAD Technology</b>	1	2	2
	Prerequisites: Department Chair Approval			
	Corequisites: None			
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.			
	<b>DFT 251      Customizing CAD Software</b>	2	2	3
	Prerequisites: DFT 151 and DFT 152			
	Corequisites: None			
	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. This course is a unique concentration requirement of the CAD Systems Management Concentration in the Mechanical Drafting Technology program.			

**\*DFT 253      CAD Data Management      2      2      3**

Prerequisites: CIS 110, DFT 151, and DFT 251

Corequisites: None

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. This course is a unique concentration requirement of the CAD Systems Management Concentration in the Mechanical Drafting Technology program.

Course  
Descriptions**\*DFT 259      CAD Project      1      4      3**

Prerequisites: DFT 112, DFT 251, DFT 252, and DFT 253

Corequisites: None

This course is a capstone course experience for the CAD Systems Management concentration. 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. This course is a unique concentration requirement in the CAD Systems Management concentration in the Mechanical Drafting Technology program.

## Digital Media Technology

**DME 110      Intro to Digital Media      2      2      3**

Prerequisites: None

Corequisites: None

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: None

Corequisites: None

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

Corequisites: None

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

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.

Course	<b>DME 140 Intro Audio/Video Media</b>	2	2	3
	Prerequisites: DME 110			
Descriptions	Corequisites: None			
	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.			
	<b>DME 210 User Interface Design</b>	2	2	3
	Prerequisites: DME 110			
	Corequisites: None			
	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.			
	<b>DME 220 Interact Multi-Media Programming</b>	2	2	3
	Prerequisites: DME 120			
	Corequisites: None			
	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.			
	<b>DME 230 Digital Animation II</b>	2	2	3
	Prerequisites: DME 130			
	Corequisites: None			
	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.			
	<b>DME 260 Emerg Tech Digital Media</b>	2	2	3
	Prerequisites: DME 120 and DME 130			
	Corequisites: None			
	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.			
	<b>DME 270 Prof Prac Digital Media</b>	2	2	3
	Prerequisites: DME 120 and DME 130			
	Corequisites: None			
	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.			
	<b>DME 285 Systems Projects</b>	2	2	3
	Prerequisites: DME 120 and DME 130			
	Corequisites: None			
	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

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.

Course  
Descriptions

**DRA 112 Literature of the Theatre** 3 0 3

Prerequisites: None

Corequisites: None

This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works. 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

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 124 Readers Theatre** 3 0 3

Prerequisites: None

Corequisites: None

This course provides a theoretical and applied introduction to the medium of readers theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of readers theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**DRA 130 Acting I** 0 6 3

Prerequisites: None

Corequisites: None

This course provides an applied study of the actor's craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble. 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

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.

Course	<b>DRA 140      Stagecraft I</b>	<b>0</b>	<b>6</b>	<b>3</b>
Descriptions	Prerequisites: None Corequisites: None			
	This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.			
	<b>DRA 141      Stagecraft II</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: DRA 140 Corequisites: None			
	This course provides additional hands-on practice in the elements of stagecraft. Emphasis is placed on the design and implementation of the arts and crafts of technical theatre. Upon completion, students should be able to pursue vocational or 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.			
	<b>DRA 170      Play Production I</b>	<b>0</b>	<b>9</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.			
	<b>DRA 171      Play Production II</b>	<b>0</b>	<b>9</b>	<b>3</b>
	Prerequisites: DRA 170 Corequisites: None			
	This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.			
	<b>DRA 211      Theatre History I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	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.			
	<b>DRA 212      Theatre History II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course covers the development of theatre from 1660 through the diverse influences which shaped the theatre of the twentieth century. 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 250 Theatre Management 1 3 2**

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions

## Economics

**ECO 151 Survey of Economics 3 0 3**

Prerequisites: None

Corequisites: None

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

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

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 111 Early Childhood Cred I 2 0 2**

Prerequisites: Test out of ABS reading on CPT.

Corequisites: None

This course introduces early childhood education and the role of the teacher in environments that encourage exploration and learning. Topics include professionalism, child growth and development, individuality, family, and culture. Upon completion, students should be able to identify and demonstrate knowledge of professional roles, major areas of child growth and development, and diverse families.

	<b>*EDU 112</b>	<b>Early Childhood Cred II</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites:	Test out of ABS reading on CPT.			
	Corequisites:	None			
Course	This course introduces developmentally appropriate practices, positive guidance, and standards of health, safety, and nutrition. Topics include the learning environment, planning developmentally appropriate activities, positive guidance techniques and health, safety, and nutrition standards. Upon completion, students should be able to demonstrate developmentally appropriate activities and positive guidance techniques; and describe health/sanitation/nutrition practices that promote healthy environments for children.				
Descriptions					
	<b>*EDU 113</b>	<b>Family/Early Child Cred</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers business/professional practices for family early childhood providers, developmentally appropriate practices, positive guidance, and methods of providing a safe and healthy environment. Topics include developmentally appropriate practices; health, safety, and nutrition; and business and professionalism. Upon completion, students should be able to develop a handbook of policies, procedures, and practices for a family child care home.				
	<b>EDU 118</b>	<b>Teacher Associate Principals and Practices</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	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 professional role of the teacher associate, 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.				
	<b>EDU 119</b>	<b>Intro to Early Childhood Education</b>	<b>4</b>	<b>0</b>	<b>4</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism, and planning developmentally appropriate programs for children. Topics include historical foundations, program types, career options, professionalism and creating inclusive environments and curriculum that are responsive to the needs of children and families. Upon completion, students should be able to design career plans and develop appropriate schedules, environments and activity plans while incorporating adaptations for children with exceptionalities.				
	<b>*EDU 131</b>	<b>Child, Family, &amp; Community</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers the development of partnerships between families, inclusive programs for children/schools that serve young children with and without disabilities, and the community. Emphasis is placed on requisite skills and benefits for 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.				

<b>EDU 144</b>	<b>Child Development I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the theories of child development, developmental sequences, and factors that influence children's development, from conception through pre-school for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development and the multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical development characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.				
<b>*EDU 145</b>	<b>Child Development II</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers theories of child development, developmental sequences, and factors that influence children's development, from pre-school through middle childhood for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developments characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.				
<b>*EDU 146</b>	<b>Child Guidance</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>*EDU 151</b>	<b>Creative Activities</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: EDU 151A				
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.				
<b>*EDU 151A</b>	<b>Creative Activities Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: EDU 151				
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.				

Course  
Descriptions

	<b>*EDU 153</b>	<b>Health, Safety, and Nutrition</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	EDU 153A			
Course	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				
Descriptions	needs, implement safe leaning environments, and adhere to state regulations.				
	<b>EDU 153A</b>	<b>Health, Safety, and Nutrition Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites:	None			
	Corequisites:	EDU 153			
	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.				
	<b>EDU 162</b>	<b>Early Experience/Prospective Teachers</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course provides an opportunity to observe teachers and pupils in a natural classroom environment. Emphasis is placed on observation methods, planning, teaching, evaluation, personal goal assessment, and curriculum. Upon completion, students should be able to demonstrate an understanding of their own personal teaching goals, teaching methods, planning methods, and student performance evaluation.				
	<b>EDU 186</b>	<b>Reading and Writing Methods</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course covers concepts, resources and methods for teaching reading and writing to school-age 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 developmentally appropriate reading and writing experiences. This course is a unique concentration requirement in the Teacher Associate concentration in the Early Childhood Associate program.				
	<b>*EDU 216</b>	<b>Introduction to Education</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational trends and issues, curriculum development, and observation and participation 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.				
	<b>*EDU 221</b>	<b>Children with Exceptionalities</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	EDU 144 and EDU 145 or PSY 224 and PSY 245			
	Corequisites:	None			
	This course, based on the foundation of typical development, introduces working with children with exceptionalities. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the learning environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, and work collaboratively with famlites and professionals to plan, implement, and evaluate inclusion strategies.				



	<b>EDU 271</b>	<b>Educational Technology</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>EDU 275</b>	<b>Effective Teacher Training</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides specialized training using an experienced-based approach to learning. Topics include instructional preparation and presentation, student interaction, time management, learning expectations, evaluation, and curriculum principles and planning. Upon completion, students should be able to prepare and present a six-step lesson plan and demonstrate ways to improve students' time-on-task.				
	<b>*EDU 280</b>	<b>Language &amp; Literacy Experiences</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>EDU 285</b>	<b>Internship Experience-School Age</b>	<b>1</b>	<b>0</b>	<b>1</b>
	Prerequisites: ENG 111 and completion of curriculum core requirements				
	Corequisites: COE 121 or COE 122				
	This course provides an opportunity to discuss internship experiences with peers and faculty. Emphasis is placed on evaluating and integrating practicum experiences. Upon completion, students should be able to demonstrate competence in early childhood education.				

## Engineering

	<b>*EGR 110</b>	<b>Introduction to Engineering Tech</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>EGR 115</b>	<b>Introduction to Technology</b>	<b>2</b>	<b>3</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the basic skills and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, calculator applications, professional ethics, safety practices, and other related topics. Upon completion, students should be able to demonstrate an understanding of the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator.				

**EGR 115A Introduction to Technology 0 3 1**

Prerequisites: None

Corequisites: EGR 115

This course provides a laboratory setting for EGR 115. Emphasis is placed on developing skills in dimensional analysis, measurement systems, engineering graphics, and calculator operations. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in EGR 115.

Course

**EGR 120 Eng and Design Graphics 2 2 3**

Prerequisites: None

Corequisites: None

This course introduces the graphical tools used for engineering and design communications. Emphasis is placed upon selecting the appropriate methods and tools and conveying ideas using sketches, orthographic views and projections, and computer graphics applications. Upon completion, students should be able to communicate essential features of two-dimensional and three-dimensional objects using the proper tools and methods.

Descriptions

**EGR 125 Appl Software for Tech 1 2 2**

Prerequisites: None

Corequisites: None

This course introduces personal computer software and teaches students how to customize the software for technical applications. A suite of office applications software will be used to demonstrate the use of programs 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

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: None

Corequisites: None

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 goals. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**\*EGR 280 Tech Proj Documentation 0 2 1**

Prerequisites: None

Corequisites: None

This course provides an opportunity for students to enhance technical documentation skills. Emphasis is placed on research, documentation, technical reporting, and presentation skills associated with capstone design projects. Upon completion, students should be able to demonstrate technical reporting skills consistent with engineering technicians in the workplace.



<b>ELC 119</b>	<b>NEC Calculations</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.				
<b>ELC 121</b>	<b>Electrical Estimating</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: ELC 113				
Corequisites: None				
This course covers the principles involved in estimating electrical projects. Topics include take-offs of materials and equipment, labor, overhead, and profit. Upon completion, students should be able to estimate simple electrical projects.				
<b>ELC 125</b>	<b>Diagrams and Schematics</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course covers the interpretation of electrical diagrams, schematics, and drawings common to electrical applications. Emphasis is placed on reading and interpreting electrical diagrams and schematics. Upon completion, students should be able to read and interpret electrical diagrams and schematics.				
<b>ELC 128</b>	<b>Introduction to PLC</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.				
<b>ELC 131</b>	<b>DC/AC Circuit Analysis</b>	<b>4</b>	<b>3</b>	<b>5</b>
Prerequisites: None				
Corequisites: MAT 121				
This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation software, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.				
<b>ELC 131A</b>	<b>DC/AC Circuit Analysis Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: ELC 131				
This course provides laboratory assignments as applied to fundamental principles of DC/AC electricity. Emphasis is placed on measurements and evaluation of electrical components, devices and circuits. Upon completion, the students will gain hands-on experience by measuring voltage, current, and opposition to current flow utilizing various meters and test equipment.				
<b>ELC 132</b>	<b>Electrical Drawings</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
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.				

	<b>ELC 213</b>	<b>Instrumentation</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: ELC 111 or ELC 112 or ELC 131				
	Corequisites: None				
Course	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.				
Descriptions	<b>ELC 228</b>	<b>PLC Applications</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites: ELC 128				
	Corequisites: None				
	This course continues the study of the programming and applications of programmable logic controllers. Emphasis is placed on advanced programming, networking, advanced I/O modules, reading and interpreting error codes, and troubleshooting. Upon completion, students should be able to program and troubleshoot programmable logic controllers.				
	<b>*ELC 229</b>	<b>Applications Project</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: ELC 112 or ELC 113 or ELC 140				
	Corequisites: None				
	This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project.				

## Electronics

	<b>ELN 131</b>	<b>Electronic Devices</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: ELC 112, ELC 131, or ELC 140				
	This course includes semiconductor-based devices such as diodes, bipolar transistors, FETs, thyristors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits. Upon completion, students should be able to construct, analyze, verify, and troubleshoot discrete component circuits using appropriate techniques and test equipment.				
	<b>ELN 132</b>	<b>Linear IC Applications</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: ELN 131				
	Corequisites: None				
	This course introduces the characteristics and applications of linear integrated circuits. Topics include op-amp circuits, differential amplifiers, instrumentation amplifiers, waveform generators, active filters, PLLs, and IC voltage regulators. Upon completion, students should be able to construct, analyze, verify, and troubleshoot linear integrated circuits using appropriate techniques and test equipment.				
	<b>ELN 133</b>	<b>Digital Electronics</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: ELC 111 or ELC 112, ELC 131 or ELC 140				
	Corequisites: None				
	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 152      Fabrication Techniques      1      3      2**

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions**ELN 154      Introduction to Data Comm      2      3      3**

Prerequisites: ELN 133

Corequisites: None

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

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 132 or ELN 140

Corequisites: None

This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

**ELN 237      Local Area Networks      2      3      3**

Prerequisites: CIS 110, CIS 111, or CET 111

Corequisites: None

This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

**ELN 238      Advanced LANs      2      3      3**

Prerequisites: ELN 237

Corequisites: None

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.

	<b>ELN 275</b>	<b>Troubleshooting</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	ELN 133 or ELN 141			
Course	This course covers techniques of analyzing and repairing failures in electronic equipment. Topics include safety, signal tracing, use of service manuals, and specific troubleshooting methods for analog, digital, and other electronics-based circuits and systems. Upon completion, students should be able to logically diagnose and isolate faults and perform necessary repairs to meet manufacturers' specifications.				
Descriptions					

## Emergency Medical Science

	<b>EMS 110</b>	<b>EMT Basic</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>7</b>
	Prerequisites:	Enrollment in EMS program or departmental approval				
	Corequisites:	EMS 111				

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.

	<b>EMS 111</b>	<b>Prehospital Environment</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
	Prerequisites:	Enrollment in EMS program or departmental approval				
	Corequisites:	EMS 110				

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.

	<b>EMS 115</b>	<b>Defense Tactics for EMS</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites:	None				
	Corequisites:	None				

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.

	<b>EMS 120</b>	<b>Intermediate Interventions</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	EMS 110, EMS 111, and BIO 168, or departmental approval				
	Corequisites:	EMS 121 or EMS 122 and COE 111, EMS 130, EMS 131, and BIO 169				

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 AED's, and correctly interpret arterial blood gases. Current N.C. EMT certification is required for students enrolling in this course.

	<b>EMS 121</b>	<b>EMS Clinical Practicum I</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
	Prerequisites:	EMS 110, EMS 111, and BIO 168, or departmental approval				
	Corequisites:	EMS 120, EMS 130, EMS 131, and BIO 169				

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.

<b>EMS 125</b>	<b>EMS Instructor Methodology</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None					
Corequisites: None					
This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.					
<b>EMS 130</b>	<b>Pharmacology for EMS</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval					
Corequisites: EMS 120, EMS 131, and BIO 169					
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.					
<b>EMS 131</b>	<b>Advanced Airway Management</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval					
Corequisites: EMS 120 and EMS 130					
This course is designed to provide advanced airway management techniques and is required for intermediate and paramedic certification. Topics include respiratory anatomy and physiology, airway, ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.					
<b>EMS 140</b>	<b>Rescue Scene Management</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
Prerequisites: Enrollment in EMS program or departmental approval					
Corequisites: EMS 140A					
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.					
<b>EMS 140A</b>	<b>Rescue Scene Skills Lab</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>
Prerequisites: Enrollment in EMS Program or departmental approval					
Corequisites: EMS 140					
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.					
<b>EMS 150</b>	<b>Emergency Vehicles and EMS Communication</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
Prerequisites: Enrollment in EMS program or departmental approval					
Corequisites: None					
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.					

Course  
Descriptions

	<b>EMS 210</b>	<b>Advanced Patient Assessment</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites:	EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111 and EMS 122, or departmental approval				
	Corequisites:	None				
Course	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.					
Descriptions						
	<b>EMS 220</b>	<b>Cardiology</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>4</b>
	Prerequisites:	EMS 120, EMS 121, EMS 130, and EMS 131, or departmental approval				
	Corequisites:	EMS 221				
	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.					
	<b>EMS 221</b>	<b>EMS Clinical Practicum II</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>3</b>
	Prerequisites:	EMS 121 or EMS 122 and COE 111, EMS 120, EMS 130, and EMS 131				
	Corequisites:	EMS 210 and EMS 220				
	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.					
	<b>EMS 230</b>	<b>Pharmacology II for EMS</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites:	EMS 130 or departmental approval				
	Corequisites:	None				
	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.					
	<b>EMS 231</b>	<b>EMS Clinical Practicum III</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>3</b>
	Prerequisites:	EMS 221 or EMS 222 and COE 121, EMS 220, and EMS 210				
	Corequisites:	EMS 250 and EMS 260				
	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.					
	<b>EMS 240</b>	<b>Special Needs Patients</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites:	EMS 120, EMS 121, EMS 130, and EMS 131, or departmental approval				
	Corequisites:	EMS 241				
	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

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 COE 111, EMS 122, EMS 210, EMS 220, and EMS 221, or departmental approval

Corequisites: EMS 231

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 COE 111 and EMS 122, EMS 210, EMS 220, and EMS 221, or departmental approval

Corequisites: EMS 231

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 BTLIS or PHTLS courses.

**EMS 270 Life Span Emergencies 2 2 0 3**

Prerequisites: EMS 120, EMS 130 and EMS 131, EMS 250, EMS 260, and EMS 231, or departmental approval

Corequisites: EMS 241

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 or Department approval

Corequisites: None

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.

Course  
Descriptions

**EMS 285 EMS Capstone** 1 3 0 2  
 Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260, or departmental approval  
 Corequisites: EMS 241

Course

Descriptions

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

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

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

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: ENG 090, ENG 090A, RED 090, or placement test  
 Corequisites: None

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. This is a diploma-level course.

**ENG 111 Expository Writing** 3 0 3  
 Prerequisites: ENG 090, ENG 090A, RED 090, or placement test  
 Corequisites: None

This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course 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

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.

Course  
Descriptions**ENG 113      Literature-Based Research      3      0      3**

Prerequisites: ENG 111

Corequisites: None

This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course 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 (other than General Occupational Technology) or English Department approval

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

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

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.

	<b>ENG 131</b>	<b>Introduction to Literature</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 111				
	Corequisites: ENG 112, ENG 113, or ENG 114				
Course	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.				
Descriptions	<b>ENG 133</b>	<b>Introduction to the Novel</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 111				
	Corequisites: ENG 112, ENG 113, or ENG 114				
	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.				
	<b>ENG 134</b>	<b>Introduction to Poetry</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 111				
	Corequisites: ENG 112, ENG 113, or ENG 114				
	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.				
	<b>ENG 135</b>	<b>Introduction to Short Fiction</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 111				
	Corequisites: ENG 112, ENG 113, or ENG 114				
	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.				
	<b>ENG 231</b>	<b>American Literature I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 112, ENG 113, or ENG 114				
	Corequisites: None				
	This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>ENG 232</b>	<b>American Literature II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 112, ENG 113, or ENG 114				
	Corequisites: None				
	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.				

<b>ENG 241</b>	<b>British Literature I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
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 and writing about 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.				
<b>ENG 242</b>	<b>British Literature II</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
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 and writing about 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.				
<b>ENG 243</b>	<b>Major British Writers</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
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.				
<b>ENG 253</b>	<b>The Bible as Literature</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
This course introduces the Hebrew Old Testament and the Christian New Testament as works of literary art. Emphasis is placed on the Bible's literary aspects including history, composition, structure, and cultural contexts. Upon completion, students should be able to identify and analyze selected books and passages using appropriate literary conventions. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.				
<b>ENG 261</b>	<b>World Literature I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings through the 17th 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.				
<b>ENG 262</b>	<b>World Literature II</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 112, ENG 113, or ENG 114				
Corequisites: None				
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the 18th 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.				

Course	<b>ENG 265 Thematic World Lit I</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
Descriptions	This course provides a thematic survey of selected works from major world authors. Emphasis is placed on understanding literary themes, such as initiation, conformity, and rebellion, from historical, critical, and universal perspectives. Upon completion, students should be able to interpret, analyze, and respond to selected works relating to universal themes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	
	<b>ENG 266 Thematic World Literature II</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
	This course provides a thematic survey of selected works from major world authors. Emphasis is placed on understanding literary themes, such as existentialism, love, hate, and death, from historical, critical, and universal perspectives. Upon completion, students should be able to interpret, analyze, and respond to selected works relating to universal themes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.	
	<b>ENG 271 Contemporary Literature</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
	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.	
	<b>ENG 272 Southern Literature</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
	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.	
	<b>ENG 273 African-American Literature</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
	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.	
	<b>ENG 274 Literature by Women</b> Prerequisites: ENG 112, ENG 113, or ENG 114 Corequisites: None	<b>3 0 3</b>
	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: ENG 112, ENG 113, or ENG 114

Corequisites: None

This course covers the relationships between science and literature through analysis of short stories and novels. Emphasis is placed on scientific discoveries that shaped Western culture and our changing view of the universe as reflected in science fiction literature. Upon completion, students should be able to trace major themes and ideas and illustrate relationships between science, world view, and science fiction literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Course  
Descriptions

**Fire Protection Technology****FIP 120      Introduction to Fire Protection      3      0      3**

Prerequisites: None

Corequisites: None

This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

**FIP 124      Fire Prevention & Public Education      3      0      3**

Prerequisites: None

Corequisites: None

This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

**FIP 128      Detection and Investigation      3      0      3**

Prerequisites: None

Corequisites: None

This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

**FIP 132      Building Construction      3      0      3**

Prerequisites: None

Corequisites: None

This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire 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 and Codes      3      0      3**

Prerequisites: None

Corequisites: None

This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

Course	<b>FIP 140 Industrial Fire Protection</b>	<b>3</b>	<b>0</b>	<b>3</b>
Descriptions	Prerequisites: None			
	Corequisites: None			
	This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility's fire protection.			
	<b>FIP 152 Fire Protection Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.			
	<b>FIP 220 Fire Fighting Strategies</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.			
	<b>FIP 224 Instructional Methodology</b>	<b>4</b>	<b>0</b>	<b>4</b>
	Prerequisites: None			
	Corequisites: None			
	This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 Fire Service Instructor Level Two.			
	<b>FIP 228 Local Government Finance</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>FIP 230 Chemistry of Hazardous Materials I</b>	<b>5</b>	<b>0</b>	<b>5</b>
	Prerequisites: None			
	Corequisites: None			
	This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.			
	<b>FIP 232 Hydraulics &amp; Water Distribution</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: MAT 115			
	Corequisites: None			
	This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.			

<b>FIP 236</b>	<b>Emergency Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>FIP 240</b>	<b>Fire Service Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>FIP 260</b>	<b>Fire Protection Planning</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>FIP 276</b>	<b>Managing Fire Services</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				

Course  
Descriptions

## French

<b>FRE 111</b>	<b>Elementary French I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>FRE 112</b>	<b>Elementary French II</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: FRE 111				
Corequisites: None				
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 211 Intermediate French I 3 0 3**

Prerequisites: FRE 112

Corequisites: None

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.

Course

Descriptions

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

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.

## Geology

**GEL 111 Introductory Geology 3 2 4**

Prerequisites: None

Corequisites: None

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 230 Environmental Geology 3 2 4**

Prerequisites: GEL 111 or PHS 130

Corequisites: None

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

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

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.

Course  
Descriptions

**German****GER 111 Elementary German I 3 0 3**

Prerequisites: None

Corequisites: None

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: None

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 211 Intermediate German I 3 0 3**

Prerequisites: GER 112

Corequisites: None

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

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.

## Geographic Information Systems

**GIS 111 Introduction to GIS** 2 2 3

Prerequisites: None

Corequisites: None

Course

Descriptions

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, product/applications, and differences between database models and between raster and vector systems.

## Health

**HEA 110 Personal Health/Wellness** 3 0 3

Prerequisites: None

Corequisites: None

This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. This course 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

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: HET 118

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: HET 118 or Department chair approval

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: HET 118 or Department chair approval

Corequisites: None

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.

<b>*HET 115</b>	<b>Electronic Engines</b>	<b>2</b>	<b>3</b>	<b>3</b>	
Prerequisites: HET 118 or Department chair approval					
Corequisites: HET 112					
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.					
<b>*HET 116</b>	<b>Air Conditioning/Diesel Equipment</b>	<b>1</b>	<b>2</b>	<b>2</b>	Course
Prerequisites: HET 118 or Dept. Chair approval					
Corequisites: None					
This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.					
<b>*HET 118</b>	<b>Mechanical Orientation</b>	<b>2</b>	<b>0</b>	<b>2</b>	Descriptions
Prerequisites: None					
Corequisites: None					
This course introduces the care and safe use of power and hand tools. Topics include micrometers, dial indicators, torque wrenches, drills, taps, dies, screw extractors, thread restorers, and fasteners. Upon completion, students should be able to select and properly use tools for various operations.					
<b>*HET 119</b>	<b>Mechanical Transmissions</b>	<b>2</b>	<b>2</b>	<b>3</b>	
Prerequisites: HET 118 or Dept. Chair approval					
Corequisites: None					
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.					
<b>*HET 125</b>	<b>Preventive Maintenance</b>	<b>1</b>	<b>3</b>	<b>2</b>	
Prerequisites: None					
Corequisites: HET 118					
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.					
<b>*HET 128</b>	<b>Medium/Heavy Duty Tune Up</b>	<b>1</b>	<b>2</b>	<b>2</b>	
Prerequisites: HET 118 or Dept. Chair approval					
Corequisites: None					
This course introduces tune-up and troubleshooting according to manufacturers' specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.					
<b>*HET 231</b>	<b>Medium/Heavy Duty Brake Systems</b>	<b>1</b>	<b>3</b>	<b>2</b>	
Prerequisites: HET 118 or Dept. Chair approval					
Corequisites: None					
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.					



**HIS 162 Women and History 3 0 3**

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions

**HIS 227 Native American History 3 0 3**

Prerequisites: None

Corequisites: None

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

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

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

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

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.

Course	<b>*HRM 130 Bed and Breakfast Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
Descriptions	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>*HRM 135 Facilities Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>*HRM 140 Hospitality Tourism Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.			
	<b>*HRM 145 Hospitality Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	This course covers principles of supervision as they apply to the hospitality industry. Topics include recruitment, selection, orientation, training, evaluation, and leadership skills. Upon completion, students should be able to understand and apply basic supervisory skills unique to the hospitality and service industry.			
	<b>*HRM 192 Selected Topics in Dining Room Management</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None			
	Corequisites: CUL 142			
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course will focus on the services offered in the dining room environment, including management.			
	<b>*HRM 210 Meetings and Conventions</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None			
	Corequisites: None			
	This course introduces organization, arrangement, and operation of conventions, trade shows, professional meetings, and food functions. Emphasis is placed on the methods of marketing, selling, and servicing conventions and trade shows and the division of administrative responsibilities in their operation. Upon completion, students should be able to describe and apply the principles of management to multi-function, multi-day conferences and events.			
	<b>*HRM 215 Restaurant Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: CUL 135, CUL 135A and HRM 192 or Departmental approval			
	Corequisites: HRM 215A			
	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 understand and apply food, beverage, and labor cost control systems.			

<b>*HRM 215A</b>	<b>Restaurant Management Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: CUL 135, CUL 135A and HRM 192 or Departmental approval				
Corequisites: HRM 215				
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.				
<b>*HRM 220</b>	<b>Food and Beverage Control</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: MAT 115				
Corequisites: None				
This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.				
<b>HRM 225</b>	<b>Beverage Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.				
<b>*HRM 240</b>	<b>Hospitality Marketing</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.				
<b>*HRM 280</b>	<b>Hospitality Management Problems</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: HRM 220 and Successful completion of the first four semesters of the program or departmental approval				
Corequisites: None				
This course addresses current global, national, and local concerns and issues in the hospitality industry. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers. This course involves the student in a capstone project that will utilize the knowledge and practical experience from the previous semesters of the program.				

Course  
Descriptions

## Human Services

<b>*HSE 110</b>	<b>Introduction to Human Services</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
Prerequisites: None					
Corequisites: None					
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.					

Course Descriptions	<b>*HSE 112      Group Process I</b> <span style="float: right;"><b>1    2    0    2</b></span>
	Prerequisites: Enrollment in the HSE program Corequisites: None This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.
	<b>*HSE 123      Interviewing Techniques</b> <span style="float: right;"><b>2    2    0    3</b></span>
	Prerequisites: None Corequisites: None This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.
	<b>*HSE 125      Counseling</b> <span style="float: right;"><b>2    2    0    3</b></span>
	Prerequisites: PSY 150 Corequisites: None This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem-solving, decision-making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.
	<b>*HSE 210      Human Services Issues</b> <span style="float: right;"><b>2    0    0    2</b></span>
	Prerequisites: Successful completion of 12 SHC in the HSE program Corequisites: None This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a 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.
	<b>*HSE 220      Case Management</b> <span style="float: right;"><b>2    2    0    3</b></span>
	Prerequisites: HSE 110 Corequisites: None This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services.
	<b>*HSE 225      Crisis Intervention</b> <span style="float: right;"><b>3    0    0    3</b></span>
	Prerequisites: None Corequisites: None This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

## Humanities/Fine Arts Electives

The following courses are classified as Humanities/Fine Arts. For more information, see the course description. These courses may be used as Humanities/Fine Arts electives for the A.A., A.S., and A.A.S. Degree programs, unless otherwise noted.

Course

Descriptions

### ART

- ART 111 Art Appreciation  
 ART 114 Art History Survey I  
 ART 115 Art History Survey II  
 ART 117 Non-Western Art History

### DRAMA

- DRA 111 Theatre Appreciation  
 DRA 112 Literature of the Theatre  
 DRA 211 Theatre History I

### 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

### FOREIGN LANGUAGES

- ASL 111 Elementary ASL I  
 ASL 112 Elementary ASL II  
 FRE 111 Elementary French I  
 FRE 112 Elementary French II  
 FRE 211 Intermediate French I  
 FRE 212 Intermediate French II  
 GER 111 Elementary German I  
 GER 112 Elementary German II  
 GER 211 Intermediate German I  
 GER 212 Intermediate German II  
 SPA 111 Elementary Spanish I  
 SPA 112 Elementary Spanish II  
 SPA 211 Intermediate Spanish I  
 SPA 212 Intermediate Spanish II

### HUMANITIES

- HUM 110 Technology and Society  
 \*HUM 115 Critical Thinking  
 HUM 120 Cultural Studies  
 HUM 122 Southern Culture  
 HUM 130 Myth and Human Culture  
 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 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 Introduction to Old Testament  
 REL 212 Introduction to New Testament

# Humanities

	<b>HUM 110</b>	<b>Technology and Society</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>HUM 115</b>	<b>Critical Thinking</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: ENG 095 or RED 090 and ENG 090				
	Corequisites: None				
	This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>HUM 120</b>	<b>Cultural Studies</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>HUM 122</b>	<b>Southern Culture</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>HUM 123</b>	<b>Appalachian Culture</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>HUM 130</b>	<b>Myth in Human Culture</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				

<b>HUM 150</b>	<b>American Women's Studies</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>HUM 160</b>	<b>Introduction to Film</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. 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.				
<b>HUM 211</b>	<b>Humanities I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 111				
Corequisites: None				
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
<b>HUM 212</b>	<b>Humanities II</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 111				
Corequisites: None				
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
<b>HUM 220</b>	<b>Human Values and Meaning</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 111				
Corequisites: None				
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				



<b>ITN 170</b>	<b>Introduction to Internet Database</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 115, CIS 152, and ITN 160				
Corequisites: None				
This is the first of two courses introducing the uses of databases to store, retrieve and query data through HTML forms. Topics include database design for Internet databases, use of ODBC-compliant databases. Upon completion, students should be able to create and maintain a database that will collect, query, and report on data via an HTML form.				
<b>ITN 220</b>	<b>Advanced Internet Multimedia</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: ITN 120				
Corequisites: None				
This is the second of two courses covering Internet multimedia. Topics include use of advanced Internet multimedia applications. Upon completion, students should be able to create interactive Internet multimedia presentations.				
<b>ITN 260</b>	<b>Introduction to E-Commerce</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: ITN 170				
Corequisites: None				
This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, security transactions, use and verification of credit cards, publishing of catalogs, and site administration. Upon completion, students should be able to set up a working e-commerce Internet web site.				
<b>ITN 270</b>	<b>Advanced Internet Databases</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: ITN 170				
Corequisites: None				
This is the second of two courses on Internet databases. Topics include database distribution and replication, data warehousing, integration of desktop and Internet database structures. Upon completion, students should be able to design and implement an Internet database.				
<b>ITN 285</b>	<b>Emerging Technologies</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: ITN 170				
Corequisites: None				
This course will expose students to emerging technologies in the field of Internet Technologies. Emphasis is placed on the new technologies in the Internet related field. Upon completion, students should be aware of the emerging technologies of Internet Technologies.				

## Machining

<b>MAC 111</b>	<b>Machining Technology I</b>	<b>2</b>	<b>12</b>	<b>6</b>
Prerequisites: None				
Corequisites: None				
This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling.				
<b>MAC 112</b>	<b>Machining Technology II</b>	<b>2</b>	<b>12</b>	<b>6</b>
Prerequisites: MAC 111				
Corequisites: None				
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling.				

Course  
Descriptions

Course	<b>MAC 113 Machining Technology III</b>	2	12	6
	Prerequisites: MAC 112			
	Corequisites: None			
	This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications.			
Descriptions	<b>MAC 114 Introduction to Metrology</b>	2	0	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 118 Machine Shop Basic</b>	1	3	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 121 Introduction to CNC</b>	2	0	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 122 CNC Turning</b>	1	3	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 124 CNC Milling</b>	1	3	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 151 Machining Calculations</b>	1	2	2
	Prerequisites: None			
	Corequisites: None			
	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.			
	<b>MAC 152 Advanced Machining Calculations</b>	1	2	2
	Prerequisites: None			
	Corequisites: None			
	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.			

<b>MAC 214</b>	<b>Machining Technology IV</b>	<b>2</b>	<b>12</b>	<b>6</b>	
Prerequisites: MAC 112					
Corequisites: None					
This course provides advanced applications and practical experience in the manufacturing of complex parts. Emphasis is placed on inspection, gauging, and the utilization of machine tools. Upon completion, students should be able to manufacture complex assemblies to specifications.					
<b>MAC 224</b>	<b>Advanced CNC Milling</b>	<b>1</b>	<b>3</b>	<b>2</b>	
Prerequisites: MAC 124					
Corequisites: None					
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.					
<b>MAC 226</b>	<b>CNC EDM Machining</b>	<b>1</b>	<b>3</b>	<b>2</b>	
Prerequisites: None					
Corequisites: None					
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.					
<b>MAC 229</b>	<b>CNC Programming</b>	<b>2</b>	<b>0</b>	<b>2</b>	
Prerequisites: MAC 121, MAC 122, MAC 124, or MAC 226					
Corequisites: None					
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.					
<b>MAC 241</b>	<b>Jigs and Fixtures I</b>	<b>2</b>	<b>6</b>	<b>4</b>	
Prerequisites: MAC 112					
Corequisites: None					
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.					
<b>MAC 245</b>	<b>Mold Construction I</b>	<b>2</b>	<b>6</b>	<b>4</b>	
Prerequisites: MAC 112					
Corequisites: None					
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.					
<b>MAC 246</b>	<b>Mold Construction II</b>	<b>1</b>	<b>9</b>	<b>4</b>	
Prerequisites: MAC 245					
Corequisites: None					
This course provides continued study in the application and use of molds. Emphasis is placed on design and manufacturing of complex molds. Upon completion, students should be able to design and build complex molds. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.					
<b>MAC 247</b>	<b>Production Tooling</b>	<b>2</b>	<b>0</b>	<b>2</b>	
Prerequisites: MAC 111					
Corequisites: None					
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.					

Course  
Descriptions

# Mathematics

	<b>MAT 060</b>	<b>Essential Mathematics</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: MAT 050 or placement				
	Corequisites: RED 080 or placement				
Course	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,				
Descriptions	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.				
	<b>MAT 070</b>	<b>Introductory Algebra</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: MAT 060 or placement				
	Corequisites: RED 080 or placement				
	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.				
	<b>MAT 080</b>	<b>Intermediate Algebra</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: MAT 070 or placement				
	Corequisites: RED 080 or placement				
	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.				
	<b>MAT 101</b>	<b>Applied Mathematics I</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: MAT 060				
	Corequisites: None				
	This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. This course is intended for certificate and diploma programs.				
	<b>MAT 115</b>	<b>Mathematical Models</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: MAT 070				
	Corequisites: None				
	This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions and their groups, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently.				

**MAT 121 Algebra/Trigonometry I** 2 2 3

Prerequisites: MAT 070

Corequisites: None

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.

Course  
Descriptions**MAT 122 Algebra/Trigonometry II** 2 2 3

Prerequisites: MAT 121

Corequisites: None

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: MAT 070

Corequisites: None

This course provides an introduction in a nontechnical 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: MAT 080 or MAT 090

Corequisites: None

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: MAT 080 or MAT 090

Corequisites: MAT 151

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.

	<b>MAT 161</b>	<b>College Algebra</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: MAT 080 or MAT 090				
	Corequisites: MAT 161A				
Course	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.				
Descriptions					
	<b>MAT 161A</b>	<b>College Algebra Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: MAT 080 or MAT 090				
	Corequisites: MAT 161				
	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.				
	<b>MAT 167</b>	<b>Discrete Mathematics</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: MAT 121, MAT 161, MAT 171, or MAT 280				
	Corequisites: None				
	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.				
	<b>MAT 171</b>	<b>Precalculus Algebra</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: MAT 080 or MAT 090				
	Corequisites: MAT 171A				
	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.				
	<b>MAT 171A</b>	<b>Precalculus Algebra Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: MAT 080 or MAT 090				
	Corequisites: MAT 171				
	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.				
	<b>MAT 172</b>	<b>Precalculus Trigonometry</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: MAT 171				
	Corequisites: None				
	This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				

**MAT 172A Precalculus Trigonometry Lab** 0 2 1

Prerequisites: MAT 171

Corequisites: MAT 172

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: High school Algebra III/Trigonometry or MAT 162

Corequisites: None

This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 175A Precalculus Lab** 0 2 1

Prerequisites: High school Algebra III/Trigonometry or MAT 162

Corequisites: MAT 175

This course is a laboratory for MAT 175. 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 191 Selected Topics, Graphic Calculators** 1 2 2

Prerequisites: None

Corequisites: None

This course explores the structure of the TI-86 Graphing Calculator. Topics include the operation of the utility and the specific functional areas such as the catalog; the math, calculus, and test operations; constants, conversions, bases, and complex numbers; graphing; tables; matrices; statistics; equation solving; and programming. Upon completion, students should be able to solve problems in these areas using the graphing calculator.

**MAT 271 Calculus I** 3 2 4

Prerequisites: MAT 172 or MAT 175

Corequisites: None

This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. 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

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

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.

Course

Descriptions

**MAT 280      Linear Algebra** **3    0    3**

Prerequisites: MAT 271

Corequisites: None

This course provides a study of linear algebra topics with emphasis on the development of both abstract concepts and applications. Topics include vectors, systems of equations, matrices, determinants, vector spaces, linear transformations in two or three dimensions, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts and appropriate use of linear algebra models to solve application problems. 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

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

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 161      Manufacturing Processes I** **3    0    3**

Prerequisites: None

Corequisites: None

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

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.

<b>MEC 210</b>	<b>Applied Mechanics</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course is a study of forces, stresses, and strains acting upon mechanical components. Topics include static equilibrium; normal, shear, and bending stresses; mathematical and graphical solution techniques; and the relationship between stress and strain. Upon completion, students should be able to demonstrate proficiency in analyzing the forces, stresses, and strains common to applications in the workplace.				
<b>MEC 231</b>	<b>Computer-Aided Manufacturing I</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>MEC 232</b>	<b>Computer-Aided Manufacturing II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: MEC 231				
Corequisites: None				
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.				
<b>MEC 237</b>	<b>Instrumentation and Control Systems</b>	<b>3</b>	<b>2</b>	<b>4</b>
Prerequisites: None				
Corequisites: None				
This course covers basic principles of instrumentation and control systems. Emphasis is placed upon the application of electrical, electronic, and pneumatic instruments and control systems in mechanical systems. Upon completion, students should be able to understand the application of switches, sensors, transducers, and other control components in circuits for controlling motors, servomechanisms, and other mechanical devices.				
<b>MEC 260</b>	<b>Fundamentals of Machine Design</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine component selections from manufacturers' catalogs.				
<b>MEC 265</b>	<b>Fluid Mechanics</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the physical behavior of fluids and fluid systems. Topics include fluid statics and dynamics, laminar and turbulent flow, Bernoulli's Equation, components, applications, and other related topics. Upon completion, students should be able to apply fluid power principles to practical applications.				
<b>MEC 267</b>	<b>Thermal Systems</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: PHY 131 or PHY 151				
Corequisites: None				
This course introduces the fundamental laws of thermodynamics. Topics include work and energy, open and closed systems, and heat engines. Upon completion, students should be able to demonstrate a knowledge of the laws and principles that apply to thermal power.				

**\*MEC 288      Manufacturing Engineering Research & Design Project      0    2    1**

Prerequisites: None  
Corequisites: ATR 112

Course

This course provides an opportunity to research specific interest areas in the field of manufacturing engineering. Emphasis is on a specific area of concern. Upon completion, students should be able to demonstrate competence through a hands-on project.

Descriptions

**\*MEC 293      Selected Topics in Mechanical Engineering Technology      1    6    3**

Prerequisites: None  
Corequisites: None

This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

## Medical Transcription

**MED 121      Medical Terminology I      3    0    0    3**

Prerequisites: ENG 090, ENG 090A and RED 090 or placement test  
Corequisites: None

This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

**MED 122      Medical Terminology II      3    0    0    3**

Prerequisites: MED 121  
Corequisites: None

This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

## Marketing and Retailing

**MKT 120      Principles of Marketing      3    0    3**

Prerequisites: None  
Corequisites: None

This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.

**MKT 121      Retailing      3    0    3**

Prerequisites: None  
Corequisites: None

This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing.

**MKT 122 Visual Merchandising 3 0 3**

Prerequisites: None

Corequisites: None

This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

Course  
Descriptions**MKT 123 Fundamentals of Selling 3 0 3**

Prerequisites: None

Corequisites: None

This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered.

**MKT 220 Advertising and Sales Promotion 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

**MKT 221 Consumer Behavior 3 0 3**

Prerequisites: None

Corequisites: None

This course is designed to describe consumer behavior as applied to the exchange processes involved in acquiring, consuming, and disposing of goods and services. Topics include an analysis of basic and environmental determinants of consumer behavior with emphasis on the decision-making process. Upon completion, students should be able to analyze concepts related to the study of the individual consumer.

**MKT 224 International Marketing 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

**MKT 225 Marketing Research 3 0 3**

Prerequisites: MKT 120

Corequisites: None

This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

**MKT 227 Marketing Applications 3 0 3**

Prerequisites: MKT 120 and MKT 221

Corequisites: None

This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.

# Medical Laboratory Technology

	<b>MLT 110</b>	<b>Introduction to MLT</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program				
	Corequisites:	None				
Course	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.					
Descriptions	Upon completion, students should be able to demonstrate a basic understanding of laboratory operations and be able to perform basic laboratory skills.					
	<b>MLT 111</b>	<b>Urinalysis and Body Fluids</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163				
	Corequisites:	None				
	This course introduces the laboratory analysis of urine and body fluids. Topics include physical, chemical, and microscopic examination of the urine and body fluids. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting urinalysis and body fluid tests.					
	<b>MLT 120</b>	<b>Hematology/Hemostasis</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163				
	Corequisites:	None				
	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.					
	<b>MLT 126</b>	<b>Immunology and Serology</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163				
	Corequisites:	None				
	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.					
	<b>MLT 127</b>	<b>Transfusion Medicine</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 126				
	Corequisites:	None				
	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.					
	<b>MLT 130</b>	<b>Clinical Chemistry</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program, CHM 130, and CHM 130A				
	Corequisites:	None				
	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.					

<b>MLT 140</b>	<b>Introduction to Microbiology</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program				
Corequisites:	None				
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.					
<b>MLT 215</b>	<b>Professional Issues</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program				
Corequisites:	None				
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.					
<b>MLT 240</b>	<b>Special Clinic Microbiology</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites:	MLT 140				
Corequisites:	None				
This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.					
<b>*MLT 252</b>	<b>MLT Practicum I**</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program, MLT120, MLT 240, MLT 126, MLT 130, BIO 163, CHM 130, and CHM 130A				
Corequisites:	MLT 111 and MLT 127				
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.					
<b>*MLT 254</b>	<b>MLT Practicum I**</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 252				
Corequisites:	None				
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of blood banking.					
<b>*MLT 255</b>	<b>MLT Practicum I**</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 252				
Corequisites:	None				
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of microbiology.					
<b>*MLT 261</b>	<b>MLT Practicum II**</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 252				
Corequisites:	None				
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of donors and component therapy.					

	<b>*MLT 265</b>	<b>MLT Practicum II**</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 252				
	Corequisites:	None				
Course	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.					
Descriptions	<b>*MLT 275</b>	<b>MLT Practicum III**</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
	Prerequisites:	Enrollment in the Medical Laboratory Technology program and MLT 252				
	Corequisites:	None				
	This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. 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.					

## Music

	<b>MUS 110</b>	<b>Music Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>MUS 113</b>	<b>American Music</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces various musical styles, influences, and composers of the United States from pre-Colonial times to the present. Emphasis is placed on the broad variety of music particular to American culture. Upon completion, students should be able to demonstrate skills in basic listening and understanding of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.				
	<b>MUS 114</b>	<b>Non-Western Music</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None			
	Corequisites:	None			
	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.				
	<b>MUS 121</b>	<b>Music Theory I</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. 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

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.

Course  
Descriptions

## Networking Technology

**NET 110 Data Communication/Networking** 2 2 3

Prerequisites: None

Corequisites: None

This course introduces data communication and networking. Topics include telecommunication standards, protocols, equipment, network topologies, communication software, LANs, WANs, the Internet, and network operating systems. Upon completion, students should be able to demonstrate understanding of the fundamentals of telecommunication and networking.

**NET 112 Security Fund. & Policies** 3 0 3

Prerequisites: None

Corequisites: None

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of the Internet, current 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.

**NET 120 Network Installation/Administration I** 2 2 3

Prerequisites: NET 110

Corequisites: None

This course covers the installation and administration of network hardware and system software. Topics include network topologies, various network operating systems, server and workstation installation and configuration, printer services, and connectivity options. Upon completion, students should be able to perform basic installation and administration of departmental networks.

**NET 125 Routing and Switching I** 1 4 3

Prerequisites: None

Corequisites: None

This course introduces the OSI model, network topologies, IP addressing, and subnet masks, simple routing techniques, and basic switching terminology. Topics include the basic functions of the seven layers of the OSI model, different classes of IP addressing and subnetting, router login scripts. Upon completion, students should be able to list the key internetworking functions of the OSI Networking Layer and how they are performed in a variety of router types.

**NET 126 Routing and Switching II** 1 4 3

Prerequisites: NET 125

Corequisites: None

This course introduces router configurations, router protocols, switching methods, and hub terminology. Topics include the basic flow control methods, router startup commands, manipulation of router configuration files, IP and data link addressing. Upon completion, students should be able to prepare the initial router configuration files, as well as enable, verify, and configure IP addresses.

Course	<b>NET 145 Introduction to Linux</b>	2	2	3
Descriptions	Prerequisites: None			
	Corequisites: None			
	This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.			
	<b>NET 155 Linux System Administration</b>	2	2	3
	Prerequisites: NET 145 or department approval			
	Corequisites: None			
	This course introduces the Linux file system, group administration, and control of system hardware. Topics include installation of Linux on standard and non-standard hardware, create and maintain the Linux file system, configure a NIS client and DHCP client, configure NFS and SMB/Samba, Configure X, Gnome, and KDE, perform basic memory and process management, and configure basic host security. Upon completion, students should be able to perform system administration tasks to a level where they can install, configure, and attach a new Linux workstation to an existing network.			
	<b>NET 165 Linux Networking/Security</b>	2	2	3
	Prerequisites: NET 155			
	Corequisites: None			
	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.			
	<b>NET 193 Selected Topics in Networking Technology</b>	2	2	3
	Prerequisites: NET 120 and second year status			
	Corequisites: None			
	This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Workplace issues of computer network professionals will be examined. Upon completion, students should be able to demonstrate an understanding of the specific area of study.			
	<b>NET 220 Network Installation/Administration II</b>	2	2	3
	Prerequisites: NET 120			
	Corequisites: None			
	This course covers advanced network installation and administration concepts and procedures. Topics include basic network troubleshooting techniques, advanced print services, traffic management, security, backup, multiple protocol support, server configuration options, fault tolerance, and inter-network options. Upon completion, students should be able to demonstrate understanding of advanced management of departmental networks.			
	<b>NET 222 Security Administration I</b>	2	2	3
	Prerequisites: NET 110, NET 112 and NET 225 or current CCNA certification			
	Corequisites: None			
	This course provides an overview of security administration and fundamentals of designing security architectures. Topics include 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.			

<b>NET 225</b>	<b>Advanced Router and Switching I</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: NET 126				
Corequisites: None				
This course introduces advanced router configuration, advanced LAN switching theory and design, VLANs, Novell IPX, and threaded case studies. Topics include router elements and operations, adding routing protocols to a configuration, monitoring IPX operations on the router, LAN segmentation, and advanced switching methods. Upon completion students should be able to describe LAN and network segmentation with bridges, routers and switches and describe a virtual LAN.				
<b>NET 226</b>	<b>Advanced Router and Switching II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: NET 225				
Corequisites: None				
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, channels, and function groups, describe the Spanning Tree protocol.				
<b>NET 230</b>	<b>Wide Area Networking</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: NET 110 and NET 120				
Corequisites: None				
This course is designed to introduce significant aspects of network interconnectivity. Topics include LAN-to-LAN, LAN-to-host, LAN-to-WAN connectivity, Internet connections, and voice-video-data transmission. Upon completion, students should be able to demonstrate an understanding of wide area networking.				
<b>NET 232</b>	<b>Security Admin. II</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: NET 222				
Corequisites: None				
This course provides the skills necessary to design and implement information security controls. Topics include advanced TCP/IP concepts, network vulnerability analysis, and monitoring. Upon completion, students should be able to distinguish between normal anomalous network traffic, identify common network attack patterns, and implement security solutions.				
<b>NET 240</b>	<b>Network Design</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: NET 110, NET 120, and NET 125				
Corequisites: None				
This course covers the principles of the design of LANs and WANs. Topics include network architecture, transmission systems, traffic management, bandwidth requirements, Internet working devices, redundancy, and broad-band versus base-band systems. Upon completion, students should be able to design a network to meet specified business and technical requirements.				
<b>NET 250</b>	<b>Advanced Networks I</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: NET 110, NET 120, and NET 220				
Corequisites: None				
This course covers advanced network management, security, and server issues. Topics include server types (file, database, fax, communication, FTP, e-mail, CD-ROM), encryption, authentication, remote monitoring, viruses, and disaster recovery. Upon completion, students should be able to perform advanced monitoring and management of various types of servers and networks.				

	<b>NET 251</b>	<b>Advanced Networks II</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: NET 250				
	Corequisites: None				
Course	This course is a continuation of NET 250. Topics include further discussion of network management, monitoring and security, as well as additional work with various types of servers. Upon completion, students should be able to detect and resolve problems relating to network security, performance, and recovery on various types of servers.				
Descriptions	<b>NET 260</b>	<b>Internet Development and Support</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: NET 110, NET 145, and NET 220				
	Corequisites: None				
	This course covers issues relating to the development and implementation of Internet related tools and services. Topics include Internet organization, site registration, e-mail servers, Web servers, Web page development, legal issues, firewalls, multimedia, TCP/IP, service providers, FTP, list servers, and gateways. Upon completion, students should be able to develop and support the Internet services needed within an organization.				
	<b>NET 270</b>	<b>Scalable Networks Design</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: NET 226 or CCNA Certification				
	Corequisites: None				
	This course covers principles and techniques of scalable networks. Topics include building multi-layer networks, controlling overhead traffic in growing routed networks, and router capabilities used to control traffic over LANs and WANs. Upon completion, students should be able to design; implement; and improve traffic flow, reliability, redundancy, and performance in enterprise networks.				
	<b>NET 271</b>	<b>Multi-Layer Networks</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: NET 270				
	Corequisites: None				
	This course covers building campus networks using multi-layer switching technologies over a high-speed Ethernet. Topics include improving IP routing performance with multi-layer switching, implementing fault tolerance routing, and managing high bandwidth broadcast while controlling IP multi-cast access to networks. Upon completion, students should be able to install and configure multi-layer enterprise networks and determine the required router configurations to support new services and applications.				
	<b>NET 272</b>	<b>Remote Access Networks</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: NET 271				
	Corequisites: None				
	This course covers how to build a remote access network to interconnect central sites to branch offices, home offices, and telecommuters. Topics include enabling on-demand/permanent connections to the central site, scaling and troubleshooting remote access networks, and maximizing bandwidth utilization over remote links. Upon completion, students should be able to assemble and configure equipment, establish WAN connections, enable protocols/technologies, allow traffic between sites, and implement accessible access control.				
	<b>NET 273</b>	<b>Internetworking Support</b>	<b>1</b>	<b>4</b>	<b>3</b>
	Prerequisites: NET 272				
	Corequisites: None				
	This course covers how to baseline and troubleshoot an internetworking environment using routers and switches for multi-protocol client, host and servers. Topics include troubleshooting processes, routing and routed protocols, campus switching; and WAN troubleshooting. Upon completion, students should be able to troubleshoot Ethernet, Fast Ethernet, and Token Ring LANs; and Serial, Frame Relay, and ISDN connections.				

**NET 280      Networking Project** 1      4      3

Prerequisites: NET 110 and NET 240

Corequisites: NET 251

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.

Course  
Descriptions

## Nursing

**\*NUR 101      Practical Nursing I** 7      6      6      11

Prerequisites: Admission into the Practical Nursing program

Corequisites: BIO 163 and PSY 110

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 163, NUR 101, and PSY 110

Corequisites: ENG 102 and CIS 110

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: CIS 110, ENG 102, NUR 102

Corequisites: None

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: None

This course introduces concepts basic to beginning nursing practice. Emphasis is placed on the application of the nursing process to provide and manage care as a member of the discipline of nursing. Upon completion, students should be able to demonstrate beginning competence in caring for individuals with common alterations of health.

**\*NUR 116      Nursing of Older Adults** 2      3      3      4

Prerequisites: NUR 125 and NUR 255

Corequisites: None

This course provides an opportunity to utilize the provider of care and manager of care roles to meet nursing needs of older adults in a variety of settings. Emphasis is placed on the aging process as it applies to normal developmental changes and alterations in health commonly occurring in the older adult. Upon completion, students should be able to apply the nursing process in caring for the older adult.

	<b>*NUR 117</b>	<b>Pharmacology</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites: Admission into the Associate Degree Nursing program					
	Corequisites: None					
Course	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.					
Descriptions	<b>*NUR 125</b>	<b>Maternal-Child Nursing</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>8</b>
	Prerequisites: NUR 115, NUR 135, NUR 185, NUR 188 and SOC 215					
	Corequisites: None					
	This course introduces nursing concepts related to the delivery of nursing care for the expanding family. Emphasis is placed on utilizing the nursing process as a framework for managing/providing nursing care to individuals and families along the wellness-illness continuum. Upon completion, students should be able to utilize the nursing process to deliver nursing care to mothers, infants, children, and families.					
	<b>*NUR 133</b>	<b>Nursing Assessment</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: Admission into the Associate Degree Nursing program, or Licensed Healthcare Provider with Department Chair approval					
	Corequisites: None					
	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.					
	<b>*NUR 135</b>	<b>Adult Nursing I</b>	<b>5</b>	<b>3</b>	<b>9</b>	<b>9</b>
	Prerequisites: BIO 168, NUR 115, NUR 117, and NUR 133					
	Corequisites: None					
	This course introduces concepts related to the nursing care of individuals experiencing acute and chronic alterations in health. Emphasis is placed on utilizing the nursing process as a framework for providing and managing nursing care to individuals along the wellness-illness continuum. Upon completion, students should be able to apply the nursing process to individuals experiencing acute and chronic alterations in health.					
	<b>*NUR 185</b>	<b>Mental Health Nursing</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>5</b>
	Prerequisites: BIO 169, NUR 115, NUR 117 and NUR 135					
	Corequisites: None					
	This course includes concepts related to the nursing care of individuals experiencing alterations in social and psychological functioning. Emphasis is placed on utilizing the nursing process to provide and manage nursing care for individuals with common psychiatric disorders or mental health needs. Upon completion, students should be able to apply psychosocial theories in the nursing care of individuals with psychiatric/mental health needs.					
	<b>*NUR 188</b>	<b>Nursing in the Community</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>3</b>
	Prerequisites: BIO 169, NUR 115, NUR 117 and NUR 135					
	Corequisites: None					
	This course is designed to introduce basic concepts and practices of community-based nursing. Emphasis is placed on roles and functions of nurses as members of interdisciplinary teams in the community and utilization of the nursing process to meet the needs or problems of individuals and groups in the community. Upon completion, students should be able to provide nursing care to individuals and/or groups in community-based settings.					



	<b>OST 136</b>	<b>Word Processing</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: OST 131 and CIS 110				
	Corequisites: None				
Course	This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment.				
Descriptions	<b>OST 137</b>	<b>Office Software Applications</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed upon the terminology and use of software through a hands on approach. Upon completion, students should be able to use software in a business environment. .				
	<b>OST 148</b>	<b>Medical Coding, Billing, and Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: CIS 110 and MED 121				
	Corequisites: None				
	This course introduces CPT and ICD coding as they apply to medical insurance and billing. Emphasis is placed on accuracy in coding, forms preparation, and posting. Upon completion, students should be able to describe the steps of the total billing cycle and explain the importance of accuracy.				
	<b>OST 149</b>	<b>Medical Legal Issues</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: MED 122				
	Corequisites: None				
	This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.				
	<b>OST 164</b>	<b>Text Editing Applications</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: English placement test, tested computer keyboarding proficiency				
	Corequisites: None				
	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.				
	<b>OST 184</b>	<b>Records Management</b>	<b>1</b>	<b>2</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. ARMA indexing rules are used.				
	<b>OST 201</b>	<b>Medical Transcription I</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: OST 136 and OST 164				
	Corequisites: MED 122 and OST 136				
	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.				

<b>OST 202</b>	<b>Medical Transcription II</b>	<b>3</b>	<b>2</b>	<b>4</b>
Prerequisites: OST 201				
Corequisites: None				
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.				
<b>OST 233</b>	<b>Office Publications Design</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: OST 136				
Corequisites: None				
This course provides entry-level skills in using software with desktop publishing capabilities. Topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to design and produce professional business documents and publications.				
<b>OST 247</b>	<b>CPT Coding in the Medical Office</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: MED 122, OST 148				
Corequisites: None				
This course provides in-depth coverage of procedural coding. Emphasis is placed on CPT and HCPCS rules for Medicare billing. Upon completion, students should be able to properly code procedures and services performed by physicians in ambulatory settings.				
<b>OST 248</b>	<b>Diagnostic Coding</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: MED 122 or OST 142				
Corequisites: None				
This course provides an in-depth study of diagnostic coding for the medical office. Emphasis is placed on ICD-9-CM codes used on superbills and other encounter forms. Upon completion, students should be able to apply the principles of diagnostic coding in the physician's office.				
<b>*OST 286</b>	<b>Professional Development</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy 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.				
<b>OST 289</b>	<b>Office Systems Management</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: OST 134, OST 136, and OST 164				
Corequisites: None				
This course provides a capstone course for the office professional. Topics include administrative office procedures, imaging, communication techniques, ergonomics, and equipment utilization. Upon completion, students should be able to function proficiently in a changing office environment.				

Course  
Descriptions

## Phlebotomy

<b>*PBT 100</b>	<b>Phlebotomy Technology</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>
Prerequisites: Enrollment in the Phlebotomy Technology program					
Corequisites: PBT 101					

This course provides instruction in the skills needed for the proper collection of blood and other specimens used for diagnostic testing. Emphasis is placed on ethics, legalities, medical terminology, safety and universal precautions, health care delivery systems, patient relations, anatomy and physiology, and specimen collection. Upon completion, students should be able to demonstrate competence in the theoretical comprehension of phlebotomy techniques. This is a certificate-level course.



<b>PED 115</b>	<b>Step Aerobics I</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course introduces the fundamentals of step aerobics. Emphasis is placed on basic stepping up and down on an adjustable platform; cardiovascular fitness; and upper body, floor, and abdominal exercises. Upon completion, students should be able to participate in basic step aerobics. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 116</b>	<b>Step Aerobics II</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: PED 115				
Corequisites: None				
This course provides a continuation of step aerobics. Emphasis is placed on a wide variety of choreographed step patterns; cardiovascular fitness; and upper body, abdominal, and floor exercises. Upon completion, students should be able to participate in and design a step aerobics routine. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 117</b>	<b>Weight Training I</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 118</b>	<b>Weight Training II</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: PED 117				
Corequisites: None				
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.				
<b>PED 119</b>	<b>Circuit Training</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>PED 120</b>	<b>Walking for Fitness</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
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..				

Course  
Descriptions

	<b>PED 121</b>	<b>Walk, Jog, Run</b>	<b>0</b>	<b>3</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: None				
Course	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				
Descriptions	has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 122</b>	<b>Yoga I</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 123</b>	<b>Yoga II</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: PED 122				
	Corequisites: None				
	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.				
	<b>PED 125</b>	<b>Self-Defense – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>PED 126</b>	<b>Self-Defense – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: PED 125				
	Corequisites: None				
	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.				
	<b>PED 127</b>	<b>Karate</b>	<b>0</b>	<b>3</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the martial arts using the Japanese Shotokan form. Topics include proper conditioning exercise, book control, proper terminology, historical foundations, and etiquette relating to karate. Upon completion, students should be able to perform line drill techniques and Kata for various ranks. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				

<b>PED 128</b>	<b>Golf – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 129</b>	<b>Golf – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: PED 128				
Corequisites: None				
This course covers the more advanced phases of golf. Emphasis is placed on refining the fundamental skills and learning more advanced phases of the games such as club selection, trouble shots, and course management. Upon completion, students should be able demonstrate the knowledge and ability to play a recreational round of golf. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 130</b>	<b>Tennis – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 131</b>	<b>Tennis – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: PED 130				
Corequisites: None				
This course emphasizes the refinement of playing skills. Topics include continuing the development of fundamentals, learning advanced serves, strokes, pace and strategies in singles and doubles play. Upon completion, students should be able to play competitive tennis. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 137</b>	<b>Badminton</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>PED 139</b>	<b>Bowling – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course introduces the fundamentals of bowling. Emphasis is placed on ball selection, grips, stance, and delivery along with rules and etiquette. Upon completion, students should be able to participate in recreational bowling. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				

Course  
Descriptions

Course	<b>PED 140</b>	<b>Bowling – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
Descriptions	Prerequisites: PED 139 Corequisites: None				
	This course covers more advanced bowling techniques. Emphasis is placed on refining basic skills and performing advanced shots, spins, pace, and strategy. Upon completion, students should be able to participate in competitive bowling. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 142</b>	<b>Lifetime Sports</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None Corequisites: None				
	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.				
	<b>PED 143</b>	<b>Volleyball – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None Corequisites: None				
	This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 144</b>	<b>Volleyball – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: PED 143 Corequisites: None				
	This course covers more advanced volleyball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to participate in competitive volleyball. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 145</b>	<b>Basketball – Beginning</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None Corequisites: None				
	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.				
	<b>PED 146</b>	<b>Basketball – Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: PED 145 Corequisites: None				
	This course covers more advanced basketball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to play basketball at a competitive level. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>PED 148</b>	<b>Softball</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None Corequisites: None				
	This course introduces the fundamental skills and rules of softball. Emphasis is placed on proper techniques and strategies for playing softball. Upon completion, students should be able to participate in recreational softball. 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

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.

Course  
Descriptions

**PED 171      Nature Hiking** **0    2    1**

Prerequisites: None

Corequisites: None

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 180      Cycling** **0    2    1**

Prerequisites: None

Corequisites: None

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 210      Team Sports** **0    3    1**

Prerequisites: None

Corequisites: None

This course introduces the fundamentals of popular American team sports. Emphasis is placed on rules, equipment, and motor skills used in various sports. Upon completion, students should be able to demonstrate knowledge of the sports covered. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 220      Exercise for Physically Challenged** **0    2    1**

Prerequisites: None

Corequisites: None

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 254      Coaching Basketball** **1    2    2**

Prerequisites: None

Corequisites: None

This course introduces the theory and methods of coaching basketball. Emphasis is placed on rules, game strategies, and selected techniques of coaching basketball. Upon completion, students should be able to demonstrate competent coaching skills in basketball. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**PED 256      Coaching Baseball** 1    2    2

Prerequisites: None

Corequisites: None

This course introduces the theory and methods of coaching baseball. Emphasis is placed on rules, game strategies, and selected techniques of coaching baseball. Upon completion, students should be able to demonstrate competent coaching skills in baseball. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Course

Descriptions

## Philosophy

**PHI 210      History of Philosophy** 3    0    3

Prerequisites: ENG 111

Corequisites: None

This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. 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

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

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

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

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.

Course  
Descriptions

## Physics

**PHY 110**      **Conceptual Physics**      **3**    **0**    **3**

Prerequisites: None

Corequisites: PHY 110A

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

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 122**      **Applied Physics II**      **3**    **2**    **4**

Prerequisites: None

Corequisites: None

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

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

Corequisites: None

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

	<b>PHY 151</b>	<b>College Physics I</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites:	MAT 161 or MAT 171			
	Corequisites:	None			
Course	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.				
Descriptions					
	<b>PHY 152</b>	<b>College Physics II</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites:	PHY 151			
	Corequisites:	None			
	This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>*PHY 251</b>	<b>General Physics I</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	MAT 271			
	Corequisites:	MAT 272			
	This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				
	<b>*PHY 252</b>	<b>General Physics II</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites:	MAT 272 and PHY 251			
	Corequisites:	None			
	This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.				

## Plastics

	<b>PLA 110</b>	<b>Introduction to Plastics</b>	<b>2</b>	<b>0</b>	<b>2</b>
	Prerequisites:	None			
	Corequisites:	None			
	This course introduces the plastics processing industry, including thermoplastics and thermosets. Emphasis is placed on the description, classification, and properties of common plastics and processes and current trends in the industry. Upon completion, students should be able to describe the differences between thermoplastics and thermosets and recognize the basics of the different plastic processes.				

## Political Science

**POL 110 Introduction to Political Science** 3 0 3

Prerequisites: None

Corequisites: None

This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and nondemocratic 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.

Course  
Descriptions

**POL 120 American Government** 3 0 3

Prerequisites: None

Corequisites: None

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

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 110 Life Span Development** 3 0 3

Prerequisites: None

Corequisites: None

This course provides an introduction to the study of human growth and development. Emphasis is placed on 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 and apply this knowledge to their specific field of study. This course is intended for certificate, diploma, and A.A.S. degree programs.

**PSY 118 Interpersonal Psychology** 3 0 3

Prerequisites: None

Corequisites: None

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.

Course	<b>PSY 150      General Psychology</b>	3	0	3
Descriptions	Prerequisites: None Corequisites: None 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.			
	<b>PSY 237      Social Psychology</b>	3	0	3
	Prerequisites: PSY 150 or SOC 210 Corequisites: None 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.			
	<b>PSY 241      Developmental Psychology</b>	3	0	3
	Prerequisites: PSY 150 Corequisites: None 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.			
	<b>PSY 243      Child Psychology</b>	3	0	3
	Prerequisites: PSY 150 Corequisites: None 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.			
	<b>PSY 281      Abnormal Psychology</b>	3	0	3
	Prerequisites: PSY 150 Corequisites: None 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 Introduction and Patient Care** 2 3 0 3

Prerequisites: Enrollment in Radiography program

Corequisites: BIO 163, RAD 111, RAD 151, and RAD 182

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

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

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

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

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

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

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.

Course  
Descriptions

	<b>*RAD 161</b>	<b>RAD Clinical Education II</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
	Prerequisites: RAD 110, RAD 111, RAD 151, and RAD 182					
	Corequisites: RAD 112 and RAD 121					
Course	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.					
Descriptions	<b>*RAD 171</b>	<b>RAD Clinical Education III</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
	Prerequisites: RAD 112, RAD 121, and RAD 161					
	Corequisites: RAD 122 and RAD 131					
	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.					
	<b>*RAD 182</b>	<b>RAD Clinical Elective</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
	Prerequisites: Enrollment in the Radiography program					
	Corequisites: RAD 110, RAD 111, and RAD 151					
	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.					
	<b>RAD 211</b>	<b>RAD Procedures III</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: RAD 112 and RAD 122					
	Corequisites: RAD 231, RAD 241, and RAD 251					
	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.					
	<b>RAD 231</b>	<b>Radiographic Physics II</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites: RAD 122, RAD 131, and RAD 171					
	Corequisites: RAD 211, RAD 241, and RAD 251					
	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, equipment circuitry, targets, filtration, and dosimetry. Upon completion, students should be able to demonstrate an understanding of the application of physical concepts as related to image production.					
	<b>RAD 241</b>	<b>Radiation Protection</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: RAD 122, RAD 131, and RAD 171					
	Corequisites: RAD 211, RAD 231, and RAD 251					
	This course covers the principles of radiation protection and radiobiology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Upon completion, students should be able to demonstrate an understanding of the effects and uses of radiation in diagnostic radiology.					
	<b>RAD 245</b>	<b>Radiographic Analysis</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251					
	Corequisites: RAD 261 and RAD 291					
	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.					

<b>*RAD 251</b>	<b>RAD Clinical Education IV</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>7</b>
Prerequisites: RAD 122, RAD 131, and RAD 171					
Corequisites: RAD 211, RAD 231, and RAD 241					
This course provides the opportunity to continue mastering all basic radiographic procedures and to attain experience in advanced areas. Emphasis is placed on equipment operation, pathological recognition, pediatric and geriatric variations, and a further awareness of radiation protection requirements. Upon completion, students should be able to demonstrate successful completion of clinical objectives.					
<b>*RAD 261</b>	<b>RAD Clinical Education V</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>7</b>
Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251					
Corequisites: RAD 245 and RAD 291					
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.					
<b>RAD 291</b>	<b>Selected Topics in Radiography</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>
Prerequisites: Enrollment in the Radiography program, RAD 211, RAD 231, RAD 241, and RAD 251					
Corequisites: RAD 245 and RAD 261					
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course is designed to serve as a capstone course for the final semester Radiography student.					

Course  
Descriptions

## Real Estate Appraisal

<b>*REA 101</b>	<b>Introduction to Real Estate Appraisal R-1</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces the entire valuation process, with specific coverage of residential neighborhood and property analysis. Topics include basic real property law, concepts of value and operation of real estate markets, mathematical and statistical concepts, finance, and residential construction/design. Upon completion, students should be able to demonstrate adequate preparation for REA 102. This course is required for the Real Estate Appraisal certificate.				
<b>*REA 102</b>	<b>Valuation Principles and Procedures R-2</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: REA 101				
Corequisites: None				
This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include the sales comparison approach, site valuation, sales comparison, the cost approach, the income approach, and reconciliation. Upon completion, students should be able to complete the Uniform Residential Appraisal Report (URAR). This course is required for the Real Estate Appraisal certificate.				
<b>*REA 103</b>	<b>Applied Residential Property Valuation R-3</b>	<b>1</b>	<b>0</b>	<b>1</b>
Prerequisites: REA 102				
Corequisites: None				
This course covers the laws and standards practiced by appraisers in the appraisal of residential 1-4 unit properties and small farms. Topics include Financial Institutions Reform and Recovery Enforcement Act (FIRREA), and North Carolina statutes and rules. Upon completion, students should be able to demonstrate eligibility to sit for the NC Appraisal Board license trainee examination. This course is required for the Real Estate Appraisal certificate.				

<b>REA 104</b>	<b>USPAP R-4</b>	<b>1</b>	<b>0</b>	<b>1</b>
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Prerequisites: REA 103

Corequisites: None

Course

This course introduces all aspects of the appraisers conduct, ethics and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the North Carolina Appraisal Board. Upon completion, students should be able to sit for the National USPAP examination.

Descriptions

<b>*REA 201</b>	<b>Introduction to Income Property Appraisal G-1</b>	<b>2</b>	<b>0</b>	<b>2</b>
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Prerequisites: REA 103 and REA 104

Corequisites: None

This course introduces concepts and techniques used to appraise real estate income properties. Topics include real estate market analysis, property analysis and site valuation, how to use financial calculators, present value, NOI, and before-tax cash flow. Upon completion, students should be able to estimate income property values using direct capitalization and to sit for the NC Certified Residential Appraiser examination. This course is required for the Real Estate Appraisal certificate.

<b>*REA 202</b>	<b>Advanced Income Capitalization Procedures G-2</b>	<b>2</b>	<b>0</b>	<b>2</b>
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Prerequisites: REA 201

Corequisites: A financial calculator is required for this course.

This course expands direct capitalization techniques and introduces yield capitalization. Topics include yield rates, discounted cash flow, financial leverage, and traditional yield capitalization formulas. Upon completion, students should be able to estimate the value of income producing property using yield capitalization techniques. This course is required for the Real Estate Appraisal certificate.

<b>*REA 203</b>	<b>Applied Income Property Valuation G-3</b>	<b>2</b>	<b>0</b>	<b>2</b>
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Prerequisites: REA 202

Corequisites: None

This course covers the laws, rules, and standards pertaining to the principles and practices applicable to the appraisal of income properties. Topics include FIR-REA, USPAP, Uniform Commercial and Industrial Appraisal Report (UCIAR) form, North Carolina statutes and rules, and case studies. Upon completion, students should be able to prepare a narrative report that conforms to the USPAP and sit for the NC Certified General Appraisal examination. This course is required for the Real Estate Appraisal certificate.

## Reading

<b>RED 080</b>	<b>Introduction to College Reading</b>	<b>3</b>	<b>2</b>	<b>4</b>
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Prerequisites: ENG 075 or RED 070 or placement

Corequisites: None

This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context. This course does not satisfy the developmental reading prerequisite for ENG 111.

<b>RED 090</b>	<b>Improved College Reading</b>	<b>3</b>	<b>2</b>	<b>4</b>
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Prerequisites: ENG 085 or RED 080 or placement

Corequisites: None

This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author's purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material. This course satisfies the developmental reading prerequisite for ENG 111.

# Religion

**REL 110 World Religions** 3 0 3

Prerequisites: None

Corequisites: None

This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Course  
Descriptions

**REL 211 Intro to Old Testament** 3 0 3

Prerequisites: None

Corequisites: None

This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**REL 212 Intro to New Testament** 3 0 3

Prerequisites: None

Corequisites: None

This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

# Real Estate

**\*RLS 112 Real Estate Fundamentals** 5 0 5

Prerequisites: None

Corequisites: None

This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales.

**RLS 113 Real Estate Mathematics** 2 0 2

Prerequisites: None

Corequisites: None

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 117 Real Estate Broker** 4 0 4

Prerequisites: RLS 112 or current real estate license

Corequisites: None

This course consists of advanced-level instruction on a variety of topics related to real estate law and brokerage practices. Topics include real estate brokerage, finance and sales, RESPA, fair housing issues, selected N.C. Real Estate License law and N.C. Real Estate Commission Rule issues. Upon completion, students should be able to demonstrate knowledge of real estate brokerage, law, and finance.

**RLS 192 Selected Topics in Real Estate 2 0 2**

Prerequisites: None

Corequisites: None

Course

Descriptions

This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. 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.

## Substance Abuse

**\*SAB 110 Substance Abuse Overview 3 0 0 3**

Prerequisites: None

Corequisites: None

This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventative measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment.

## Social/Behavioral Science Electives

The following courses are classified as Social/Behavioral Sciences. For more information, see the course description. These courses may be used to fulfill the General Education requirement for A.A.S. Degree Programs, unless otherwise noted.

**ANTHROPOLOGY**

ANT 210 General Anthropology

ANT 220 Cultural Anthropology

ANT 230 Physical Anthropology

ANT 230A Physical Anthropology Lab

ANT 240 Archaeology

ogy

**PSYCHOLOGY**

\*PSY 110 Life Span Development

\*PSY 118 Interpersonal Psychology

PSY 150 General Psychology

PSY 237 Social Psychology

PSY 241 Developmental Psychology

PSY 281 Abnormal Psychology

**ECONOMICS**

ECO 151 Survey of Economics

ECO 251 Principles of Microeconomics

ECO 252 Principles of Macroeconomics

**SOCIOLOGY**

SOC 210 Introduction to Sociology

SOC 213 Sociology of the Family

SOC 220 Social Problems

SOC 225 Social Diversity

SOC 240 Social Psychology

**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

**POLITICAL SCIENCE**

POL 110 Introduction to Political Science

POL 120 American Government

POL 210 Comparative Government

*\* This course is intended for diploma, certificate, and A.A.S. degree programs. It does not meet the requirements for the A.A. or A.S. degree, and it will not transfer to a senior institution in the University of North Carolina System under the guidelines of the North Carolina Community College System–University of North Carolina Comprehensive Articulation Agreement.*

# Sociology

**SOC 210 Introduction to Sociology** 3 0 3

Prerequisites: None

Corequisites: None

This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.

Course  
Descriptions

**SOC 213 Sociology of the Family** 3 0 3

Prerequisites: None

Corequisites: None

This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse 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

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

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

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.

	<b>SOC 232</b>	<b>Social Context of Aging</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>SOC 234</b>	<b>Sociology of Gender</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>SOC 240</b>	<b>Social Psychology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>SOC 254</b>	<b>Rural and Urban Sociology</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				

## Sonography

	<b>SON 110</b>	<b>Introduction to Sonography</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: SON 130					
	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.					
	<b>SON 111</b>	<b>Sonographic Physics</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
	Prerequisites: CVS 163 or SON 110					
	Corequisites: None					
	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.					

<b>SON 120</b>	<b>SON Clinical Ed I</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
Prerequisites: SON 110					
Corequisites: None					
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.					
<b>SON 121</b>	<b>SON Clinical Ed II</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
Prerequisites: SON 120					
Corequisites: None					
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.					
<b>SON 130</b>	<b>Abdominal Sonography I</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None					
Corequisites: None					
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.					
<b>SON 131</b>	<b>Abdominal Sonography II</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
Prerequisites: SON 130					
Corequisites: None					
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.					
<b>SON 140</b>	<b>Gynecological Sonography</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: SON 110					
Corequisites: None					
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.					
<b>SON 220</b>	<b>SON Clinical Ed III</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>8</b>
Prerequisites: SON 121					
Corequisites: None					
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.					
<b>SON 221</b>	<b>SON Clinical Ed IV</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>8</b>
Prerequisites: SON 220					
Corequisites: None					
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.					
<b>SON 225</b>	<b>Case Studies</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>
Prerequisites: SON 110 or CVS 163					
Corequisites: None					
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.					

Course  
Descriptions

	<b>SON 241</b>	<b>Obstetrical Sonography I</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: SON 110					
	Corequisites: None					
Course	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.					
Descriptions						
	<b>SON 242</b>	<b>Obstetrical Sonography II</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: SON 241					
	Corequisites: None					
	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.					
	<b>SON 250</b>	<b>Vascular Sonography</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
	Prerequisites: SON 111					
	Corequisites: None					
	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.					
	<b>SON 289</b>	<b>Sonographic Topics</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
	Prerequisites: SON 220					
	Corequisites: SON 221					
	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

	<b>SPA 111</b>	<b>Elementary Spanish I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>SPA 112</b>	<b>Elementary Spanish II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: SPA 111				
	Corequisites: None				
	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  
 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.

Course  
 Descriptions

**SPA 211 Intermediate Spanish I** 3 0 3  
 Prerequisites: SPA 112  
 Corequisites: None  
 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  
 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.

## Surveying

**SRV 110 Surveying I** 2 6 4  
 Prerequisites: EGR 115 and MAT 121  
 Corequisites: None  
 This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments, demonstrate field note techniques, and apply the theory and practice of plane surveying.

**SRV 111 Surveying II** 2 6 4  
 Prerequisites: SRV 110  
 Corequisites: None  
 This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork 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  
 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.

	<b>SRV 220</b>	<b>Surveying Law</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites:	SRV 110			
	Corequisites:	None			
Course	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.				
Descriptions	Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.				
	<b>SRV 230</b>	<b>Subdivision Planning</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites:	SRV 111, SRV 210, and CIV 211			
	Corequisites:	None			
	This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.				
	<b>SRV 240</b>	<b>Topographic/Site Surveying</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites:	SRV 110			
	Corequisites:	SRV 210			
	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.				
	<b>SRV 250</b>	<b>Advanced Surveying</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites:	SRV 111			
	Corequisites:	None			
	This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.				
	<b>SRV 260</b>	<b>Field and Office Practices</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites:	Completion of three semesters of the Surveying Technology program			
	Corequisites:	None			
	This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand the requirements of operating a professional land surveying business.				

## Surgical Technology

	<b>SUR 110</b>	<b>Introduction to Surgical Technology</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	Prerequisites:	None				
	Corequisites:	BIO 163 and SUR 111				
	This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include historical development, professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, and physiology of wound healing. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.					

<b>SUR 111</b>	<b>Periop Patient Care</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>7</b>
Prerequisites: None					
Corequisites: BIO 163 and SUR 110					
This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. Topics include surgical asepsis, sterilization/disinfection, and perioperative patient care. Upon completion, students should be able to demonstrate the principles and practices of aseptic technique, sterile attire, basic case preparation, and other relevant skills.					
<b>SUR 122</b>	<b>Surgical Procedures I</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>6</b>
Prerequisites: BIO 163, SUR 110 and SUR 111					
Corequisites: BIO 175 and SUR 123 or STP 101					
This course introduces a comprehensive study of surgical procedures in the following specialties: general, gastrointestinal, obstetrical/gynecology, urology, otorhinolaryngology, and plastics/reconstructive. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.					
<b>SUR 123</b>	<b>SUR Clinical Practice I</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>7</b>
Prerequisites: BIO 163, SUR 110 and SUR 111					
Corequisites: BIO 175 and SUR 122					
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.					
<b>SUR 134</b>	<b>Surgical Procedures II</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>
Prerequisites: BIO 175 and SUR 122, SUR 123 or STP 101					
Corequisites: SUR 135 and SUR 137					
This course introduces orthopedic, neurosurgical, peripheral vascular, thoracic, cardiovascular, and ophthalmology surgical specialties. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.					
<b>SUR 135</b>	<b>SUR Clinical Practice II</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
Prerequisites: BIO 175, SUR 122 and SUR 123					
Corequisites: SUR 134 and SUR 137					
This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.					
<b>SUR 137</b>	<b>Prof Success Prep</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: BIO 175, SUR 122 and SUR 123					
Corequisites: SUR 134 and SUR 135					
This course provides job-seeking skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, and interviewing techniques. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification.					

Course  
Descriptions

## Social Work

	<b>*SWK 110</b>	<b>Introduction to Social Work</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: None					
Course	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. This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.					
Descriptions						
	<b>*SWK 113</b>	<b>Working with Diversity</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: None					
	This course examines and promotes understanding, sensitivity, awareness, and knowledge of human diversity. Emphasis is placed on professional responsibilities, duties, and skills critical to multicultural human services practice. Upon completion, students should be able to integrate and expand knowledge, skills, and cultural awareness relevant to diverse populations. This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.					
	<b>SWK 115</b>	<b>Community Resources</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: None					
	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.					
	<b>*SWK 214</b>	<b>Social Work Law</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	Prerequisites: SWK 110					
	Corequisites: None					
	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.					
	<b>*SWK 220</b>	<b>SWK Issues in Client Services</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	Prerequisites: None					
	Corequisites: None					
	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 or departmental approval

Corequisites: None

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.

Course  
Descriptions

**VET 114      Introduction to Veterinary Medical Tech      1      0      0      1**

Prerequisites: Enrollment in the VMT program or departmental approval

Corequisites: None

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 or departmental approval

Corequisites: None

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 or departmental approval

Corequisites: None

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 120, VET 121, or departmental approval

Corequisites: None

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 120, VET 121, or departmental approval

Corequisites: None

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.

Course

Descriptions

**VET 126      Veterinary Diseases II      1      3      0      2**

Prerequisites: VET 125 or departmental approval

Corequisites: None

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 123, VET 110, VET 114, VET 125 or departmental approval

Corequisites: VET 133

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 Practice I      2      3      0      3**

Prerequisites: VET 110, VET 114, VET 123, VET 125 or departmental approval

Corequisites: VET 120

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 or departmental approval

Corequisites: None

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 or departmental approval

Corequisites: VET 213

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 or departmental approval

Corequisites: VET 214

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 or departmental approval

Corequisites: None

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.

Course  
Descriptions**VET 214      Veterinary Clinical Practice III      1      9      0      4**

Prerequisites: VET 213 or departmental approval

Corequisites: None

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: Either CHM 130 and CHEM 130A or CHM 151, VET 125 or departmental approval

Corequisites: VET 213

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 120, Vet 125 or departmental approval

Corequisites: VET 213

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: Either CHM 130 and CHM 130A or CHM 151, or departmental approval

Corequisites: None

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.

# Welding

	<b>WLD 110</b>	<b>Cutting Processes</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: Admission to Welding Program				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>WLD 111</b>	<b>Oxy-Fuel Welding</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>WLD 112</b>	<b>Basic Welding Processes</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None				
	Corequisites: None				
	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.				
	<b>WLD 115</b>	<b>SMAW (Stick) Plate</b>	<b>2</b>	<b>9</b>	<b>5</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.				
	<b>WLD 116</b>	<b>SMAW (Stick) Plate/Pipe</b>	<b>1</b>	<b>9</b>	<b>4</b>
	Prerequisites: WLD 115				
	Corequisites: None				
	This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.				
	<b>WLD 121</b>	<b>GMAW (MIG) FCAW/Plate</b>	<b>2</b>	<b>6</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.				
	<b>WLD 122</b>	<b>GMAW (MIG) Plate/Pipe</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites: WLD 121				
	Corequisites: None				
	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.				

<b>WLD 131</b>	<b>GTAW (TIG) Plate</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>WLD 132</b>	<b>GTAW (TIG) Plate/Pipe</b>	<b>1</b>	<b>6</b>	<b>3</b>
Prerequisites: WLD 131				
Corequisites: None				
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.				
<b>WLD 141</b>	<b>Symbols and Specifications</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
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.				
<b>WLD 143</b>	<b>Welding Metallurgy</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.				
<b>WLD 151</b>	<b>Fabrication I</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: WLD 110, WLD 115, WLD 116, and WLD 131				
Corequisites: None				
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.				
<b>WLD 221</b>	<b>GMAW (MIG) Pipe</b>	<b>1</b>	<b>6</b>	<b>3</b>
Prerequisites: WLD 122				
Corequisites: None				
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform GMAW welds to applicable codes on pipe with prescribed electrodes in various positions.				
<b>WLD 261</b>	<b>Certification Practices</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: WLD 115, WLD 121, and WLD 131				
Corequisites: None				
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.				

Course  
Descriptions

Course

Descriptions

**WLD 262      Inspection and Testing****2      2      3**

Prerequisites: None

Corequisites: None

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.

Course

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Course

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Course

Descriptions

Course

Descriptions

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# Administration, Faculty, and Staff

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further graduate study: Duke University

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Administration,  
Faculty,  
and Staff

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- Libby B. Hodan** \_\_\_\_\_ Foundation Development Officer  
B.A., M.Ed., Clemson University
- Brenda L. McKinney, C.E.O.E.** \_\_\_\_\_ Administrative Assistant  
A.A.S., Asheville-Buncombe Technical Community College, B.S., Mars Hill College; PSP (State, National)
- Justin L. Page** \_\_\_\_\_ Graphic Designer  
B.F.A., Appalachian State University
- Karla S. Piccirillo** \_\_\_\_\_ Secretary, Personnel  
A.A.S. (two degrees), Asheville-Buncombe Technical Community College; further study: University of Tennessee and University of North Alabama
- Carol L. Rovello** \_\_\_\_\_ Director, Employee and Organization Development  
B.A., Glassboro State College; M.A., Rider College, SPHR

## FACULTY

### DIVISION OF ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

- Ned H. Fowler, E.M.T.-P (1983)** \_\_\_\_\_ Dean, Allied Health and Public Service Education  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Western Carolina University; M.A. Ed., Western Carolina University
- Donna J. Alexander, R.N. (2004)** \_\_\_\_\_ Instructor, Nursing  
B.S.N., Western Carolina University

- J. Tisha Anderson, C.D.A. (1999)** \_\_\_\_\_ Instructor, Allied Dental Programs  
Diploma, Asheville-Buncombe Technical Community College; Certified Dental Assistant
- Christy C. Andrews, R.N. (1998)** \_\_\_\_\_ Instructor, Nursing  
B.S.N., Western Carolina University; M.S.N., University of North Carolina at Charlotte
- Denise M. Anthes, R.N. (2004)** \_\_\_\_\_ Instructor, Nursing  
B.S.N., Trenton State University; M.B.A., Webster University
- Karen M. Baker, R.N. (1998)** \_\_\_\_\_ Instructor, Nursing  
A.D.N., Asheville-Buncombe Technical Community College; B.S.N., Western Carolina University; M.S.N., University of North Carolina-Charlotte
- Tamara W. Baldwin, C.D.A., R.D.H.(1992)** \_\_\_\_\_ Instructor, Allied Dental Programs  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Mars Hill College
- Scott J. Bissinger (1988)** \_\_\_\_\_ Director, Law Enforcement Academy  
A.A.S., Asheville-Buncombe Technical Community College; B.S., M.S., University of North Carolina at Charlotte
- Laura L. Brown, R.N., C.P.N., C.A.P.A., C.P.A.N. (2002)** \_\_\_\_\_ Instructor, Nursing  
Diploma in Nursing, Peter Bent Brigham Hospital School of Nursing; B.S.N., Winston Salem State University
- M. Joan Buchanan R.N. (2004)** \_\_\_\_\_ Instructor, Nursing  
B.S.N., University of North Carolina at Greensboro
- Chastity L. Case, R.T.(R), R.D.M.S., R.V.T. (2001)** \_\_\_\_\_ Instructor, Medical Sonography  
A.A.S., Asheville-Buncombe Technical Community College; Certificate, School of Diagnostic Medical Sonography, Grady Memorial Hospital, Atlanta, GA
- Brenda Causey, R.N. (1976)** \_\_\_\_\_ Chairperson, Nursing  
Diploma, Memorial Mission Hospital School of Nursing; B.S.N., Western Carolina University; M.S.N., University of North Carolina at Charlotte
- Dianne Cotter (2004)** \_\_\_\_\_ Chair, Veterinary Medical Technology  
A.A.S., Central Carolina Community College; B.B.A., Montreat College
- Teresa C. Edwards, R.N. (2004)** \_\_\_\_\_ Instructor, Nursing  
A.D.N., Asheville-Buncombe Technical Community College; B.S.N., Lees-McRae College
- Robert S. Eldridge, D.D.S. (1997)** \_\_\_\_\_ Instructor, Allied Dental Programs  
B.S., Carson Newman College; M.A. Ed., Western Carolina University; D.D.S., Emory University School of Dentistry
- Chris C. Fay (2003)** \_\_\_\_\_ Assistant Director, Law Enforcement Academy  
BLET Certificate, Asheville-Buncombe Technical Community College; B.A., M.A., University of New Mexico
- A. Ann Fratcher, D.V.M. (2004)** \_\_\_\_\_ Instructor, Veterinary Medical Technology  
B.S. University of Missouri; D.V.M., North Carolina State University
- Megan A. Getty-Odom (2004)** \_\_\_\_\_ Instructor, Social Service Associate  
B.A., M.S.W., University of South Carolina
- Angela D. Goodwin, R.T.(R) (2004)** \_\_\_\_\_ Instructor, Radiography  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Mars Hill College
- Christine A. Halvorson (2005)** \_\_\_\_\_ Dental Clinic Coordinator  
A.A.S., St. Phillips College; B.S., Regents College
- Denise M. Hansen, R.N., F.N.P (2004)** \_\_\_\_\_ Instructor, Nursing  
A.A.S., Miami-Dade Community College; B.S.N., Barry University; M.S.N., Western Carolina University
- Barbara B. Harrison, M.T. (ASCP) S.M. (2003)** \_\_\_\_\_ Instructor, Medical Laboratory Technology  
B.S., Aurora University; M.S., University of South Carolina
- Melba A. Hawkins (2004)** \_\_\_\_\_ Instructor, Early Childhood/Smart Start  
B.S., Mars Hill College; M.S.H.E. and M.L.S., University of North Carolina at Greensboro
- Bobby A. Howard (2005)** \_\_\_\_\_ Instructor, Nursing  
A.A.S., Guilford Technical Community College; B.S., University of North Carolina at Greensboro; M. Div., Southeastern Baptist Theological Seminary
- Dianne B. Hughes (1999)** \_\_\_\_\_ Instructor, Early Childhood Associate  
B.A., Mars Hill College; M.A. Ed., Western Carolina University
- Melissa Hyatt, M.T. (1996)** \_\_\_\_\_ Chairperson, Medical Laboratory Technology  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Western Carolina University; M.A. Ed., Western Carolina University
- Jacqueline A. Jones-Nickens, M.S.W. (1995)** \_\_\_\_\_ Chairperson, Social Service Associate  
B.S., University of North Carolina at Greensboro; M.S.W., University of North Carolina at Chapel Hill

- Robin B. Keith, R.N., C.N.O.R. (2003)** \_\_\_\_\_ **Chairperson, Surgical Technology**  
LPN Diploma, Guilford Technical Community College; A.D.N., Mount Hood Community College; B.S.N., Western Carolina University
- Pamela N. Kirby (2002)** \_\_\_\_\_ **Instructor, Early Childhood Associate**  
B.S., Radford University; M.A.Ed, Western Carolina University
- Administration,**  
**Faculty,**  
**and Staff**
- Carol W. Little, C.D.A., R.D.H. (2005)** \_\_\_\_\_ **Instructor, Allied Dental Programs**  
Certificate, University of North Carolina at Greensboro; A.A.S. Asheville-Buncombe Technical Community College; B.S. Mars Hill College; M.H.S., Western Carolina University
- Sheryl E. Lussier, R.N.C. (1998)** \_\_\_\_\_ **Instructor, Nursing**  
Diploma, Seton School of Nursing; B.S.N., University of Phoenix
- Jennings H. Minton, C.N.M., M.S. (2004)** \_\_\_\_\_ **Instructor, Nursing**  
B.S., Appalachian State University; B.S.N. UNC-Chapel Hill, M.S., Philadelphia University, C.N.M., Frontier School of Midwifery & Family Nursing
- R. Keith Owens, E.M.T.-P (1999)** \_\_\_\_\_ **Chairperson, Emergency Medical Science**  
A.A.S., Guilford Technical Community College; B.A., John Wesley College, M.A. Ed., American Inter Continental University
- Nicole S. Pekarek, (2004)** \_\_\_\_\_ **Instructor, Phlebotomy**  
B.S., Appalachian State University, M.A.T. Western Carolina University
- Brenda Phillips, R.T. (R) (1992)** \_\_\_\_\_ **Instructor, Medical Imaging**  
A.A.S., Asheville-Buncombe Technical Community College; B.A., Berea College
- Cathy B. Pollock (1993)** \_\_\_\_\_ **Chairperson, Early Childhood**  
B.S., M.S., Western Carolina University
- Debra Reese, R.T. (R) (1991)** \_\_\_\_\_ **Chairperson, Medical Imaging**  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Mars Hill College; M.P.H., University of North Carolina at Chapel Hill
- Elizabeth Scarbrough, J.D. (2004)** \_\_\_\_\_ **Instructor, Criminal Justice Technology**  
A.A., Palm Beach Community College; B.A., University of North Carolina at Chapel Hill; J.D., University of Georgia
- Sherry Morrow Shields, R.D.H. (1973)** \_\_\_\_\_ **Instructor, Allied Dental Programs**  
A.A.S., Central Piedmont Community College; B.S., University of North Carolina at Chapel Hill
- Eric D. Sitton (2005)** \_\_\_\_\_ **Instructor, Emergency Medical Science**  
A.A.S. Asheville-Buncombe Technical Community College; B.S., Western Carolina University
- Clinton H. Smoke (2000)** \_\_\_\_\_ **Chairperson, Fire Protection Technology**  
B.S., John Jay College; B.A., Old Dominion University; M.B.A., College of William and Mary;
- Shaun Riley Tate, R.D.H. (1978)** \_\_\_\_\_ **Chairperson, Allied Dental Programs**  
B.S., East Tennessee State University; M.A.Ed., Western Carolina University
- Debra C. Whisenant, R.N. (2003)** \_\_\_\_\_ **Instructor, Nursing**  
B.S.N., Western Carolina University
- Jane H. Wissinger, R.N. (1998)** \_\_\_\_\_ **Instructor, Nursing**  
B.S., Grove City College; M.S., Virginia Polytechnic Institute and State University; M.S.N., University of Tennessee

## DIVISION OF ARTS AND SCIENCES

- Thomas F. Dechant, Ed. D.(1990)** \_\_\_\_\_ **Dean, Arts and Sciences**  
B.A., University of North Carolina at Asheville; M.S., Western Carolina University; Ed.D., North Carolina State University
- James Wesley Adams (1999)** \_\_\_\_\_ **Instructor, Chemistry/Physics**  
B.S., College of Charleston; M.S., University of North Carolina at Wilmington
- Kenet M. Adamson (2002)** \_\_\_\_\_ **Coordinator, Transfer Advising Center**  
**Instructor, English/Communications**  
B.S., University of Florida; B.A., Georgia State University; M.A., Western Carolina University
- Joseph G. Allawos (2000)** \_\_\_\_\_ **Instructor, Biology**  
B.S., College of Charleston; M.S., University of Tennessee
- Jerry L. Ashe (1996)** \_\_\_\_\_ **Instructor, Mathematics**  
A.A., Daytona Beach Community College; B.S., University of Central Florida; M.S., University of Central Florida; further graduate study: University of Central Florida
- April D. Birchfield (2003)** \_\_\_\_\_ **Instructor, Social/Behavioral Sciences**  
B.A., University of North Carolina at Asheville; M.A., Wake Forest University

- Jennifer Browning (2003)** \_\_\_\_\_ Instructor, English/Communications  
B.A., University of North Carolina at Asheville; M.A., Georgia State University; further graduate study, Georgia State University
- Helen L. Burrell (2004)** \_\_\_\_\_ Instructor, Biology  
B.S., Manchester Metropolitan University; M.S., Appalachian State University
- Jacqueline Caldwell (1999)** \_\_\_\_\_ Instructor, Mathematics Administration,  
B.S., North Carolina State University; M.A., Western Carolina University
- Peter Carswell (1992)** \_\_\_\_\_ Instructor, Social/Behavioral Sciences Faculty,  
B.A., University of Hawaii; B.S., SUNY at Albany; M.S.C.P., Chaminade University of Honolulu
- Sun Chae (2002)** \_\_\_\_\_ Instructor, Humanities/Fine Arts and Staff  
B.A., New College; M.A., University of Florida
- R. Trent Codd (1999)** \_\_\_\_\_ Chairperson, Mathematics  
A.A., Miami-Dade Community College; B.S., M.A., University of Miami; B.S.C.S. Graduate Certification, Florida International University; further graduate study, Western Carolina University.
- Karma Crouch (1992)** \_\_\_\_\_ Instructor, Mathematics  
B.S., Appalachian State University; M.A.Ed., Western Carolina University
- Charles P. Cummings, Ph.D (2001)** \_\_\_\_\_ Instructor, Social/Behavioral Sciences  
B.A., State University of New York at Buffalo; M.A., Ph.D., Georgia State University
- T. Ren Decatur (1996)** \_\_\_\_\_ Instructor, English/Communications  
B.A., University of North Carolina at Charlotte; M.A., University of Idaho; further graduate study: University of Vienna (Austria)
- T. Gigi Derballa (1999)** \_\_\_ Chairperson, Developmental Studies, Honors, First-Year Seminar  
A.A., Seminole Community College; B.A., M.A., University of Central Florida
- Rock E. Doddridge, Ph.D. (2003)** \_\_\_\_\_ Instructor, Social/Behavioral Sciences  
B.A., M.A.Ed., University of Florida; M.Div., D.Min, Fuller Theological Seminary; Ph.D., Loyola University of Chicago; M.A.R.E., North Park Theological Seminary
- Thelbert W. Dowdy (1999)** \_\_\_\_\_ Instructor, Social/Behavioral Sciences  
B.A., Western Carolina University; M.A., Appalachian State University
- Matthew A. Fender (1990)** \_\_\_\_\_ Chairperson, Chemistry/Physics  
A.A.S., Asheville-Buncombe Technical Community College; B.S., M.S., Western Carolina University; further graduate study: Western Carolina University
- Kathy Godfrey (2004)** \_\_\_\_\_ Instructor, English/Communications  
A.A., Asheville-Buncombe Technical Community College; B.A., University of North Carolina at Asheville; M.A., University of Tennessee
- Sandi Goodridge (1986)** \_\_\_\_\_ Instructor, English/Communications  
B.A., M.A.Ed., University of South Carolina; further graduate study: Western Carolina University
- Randee B. Goodstadt (1993)** \_\_\_\_\_ Chairperson, Social/Behavioral Sciences  
B.A., Kent State; M.A., Harvard University; further graduate study: Harvard University
- John Graham (1991)** \_\_\_\_\_ Instructor, Chemistry/Physics  
B.S., M.S.T., University of Florida
- W. Michael Gray (1981)** \_\_\_\_\_ Chairperson, Biology  
B.A., M.S., Appalachian State University; further graduate study: Western Carolina University
- Elizabeth F. Hester (1994)** \_\_\_\_\_ Instructor, Developmental Studies  
B.A., Salem College; M.A., Appalachian State University
- David Holcombe (1992)** \_\_\_\_\_ Instructor, English/Communications  
B.A., Mars Hill College; M.A., Indiana State University; further graduate study: Western Carolina University
- William Hooper (1992)** \_\_\_\_\_ Instructor, Chemistry/Physics  
A.S., Isothermal Community College; B.S., M.S., University of North Carolina at Chapel Hill; further graduate study: Western Carolina University
- Aidan M. Hoyal (2004)** \_\_\_\_\_ Instructor, Humanities/Fine Arts  
B.A., B.A., M.A., M.S., University of Tennessee
- Scott Jackson (2003)** \_\_\_\_\_ Instructor, Biology  
B.A., University of North Carolina; M.S., University of Oregon; further study, Southern Oregon University and Highlands Biological Station
- C. Lisa Johnson (1989)** \_\_\_\_\_ Instructor, English/Communications  
B.A., M.A., Western Carolina University; further graduate study: Indiana University of Pennsylvania

- Sharon Killian (1992)** \_\_\_\_\_ **Coordinator, Learning Center**  
B.A., University of North Carolina at Greensboro; Developmental Education Certificate, North Carolina State University
- Kenn D. Kotara (2003)** \_\_\_\_\_ **Instructor, Humanities/Fine Arts**  
B.F.A., M.F.A., Louisiana Tech University
- Administration,** **Ronald P. Layne (2002)** \_\_\_\_\_ **Instructor, Developmental Studies**  
A.S. Asheville-Buncombe Technical Community College; B.A., University of North Carolina at Asheville; M.A., Western Carolina University
- Faculty,** **Alison B. Long (2003)** \_\_\_\_\_ **Instructor, English/Communications**  
B.A., Purdue University - Calumet; B.S.N., M.A., University of North Carolina at Greensboro
- and Staff** **Debra A. Maddox (2005)** \_\_\_\_\_ **Instructor, Communications**  
B.A., University of Northern Iowa; M.A., University of Nebraska – Omaha; further graduate study, University of Houston
- Toby L. Mapes, Ph.D. (2002)** \_\_\_\_\_ **Chairperson, Biotechnology**  
B.S., North Dakota State University; M.S., Oklahoma State University; Ph.D., University of Maryland - College Park
- Valerie R. Martin (2001)** \_\_\_\_\_ **Instructor, Mathematics**  
A.A., Santa Fe Community College; B.A., Mercer University; M.S., Western Carolina University
- Holly C. McCurry (1999)** \_\_\_\_\_ **Chairperson, Instructor, Health & Physical Education/Wellness Coordinator**  
B.S., M.A., Western Carolina University
- Kelly Q. McEnany (1999)** \_\_\_\_\_ **Instructor, Social/Behavioral Sciences**  
B.A., University of Wisconsin at Madison; M.A.Ed., Western Carolina University
- Margaret Sue H. Olesiuk (1998)** \_\_\_\_\_ **Instructor, Social/Behavioral Sciences Developmental Studies**  
B.A., M.A.T., University of North Carolina at Chapel Hill
- M. Susan Paterson (1992)** \_\_\_\_\_ **Instructor, Developmental Studies**  
B.A., University of North Carolina at Chapel Hill; M.A.Ed., Western Carolina University
- Glenn C. Ratcliff, Ph.D. (2001)** \_\_\_\_\_ **Instructor, Chemistry/Physics**  
B.S., University of North Carolina at Asheville; M.S., Ph.D., University of North Carolina at Chapel Hill
- Sherry L. Ratzlaff (2004)** \_\_\_\_\_ **Instructor, Biology**  
A.S., Virginia Western Community College; B.S., Radford University; M.S., Oklahoma State University
- Danielle Richardson (2004)** \_\_\_\_\_ **Instructor, Humanities/Fine Arts**  
B.A., University of North Carolina at Asheville; M.A.T.L., The University of Southern Mississippi
- Kathleen Ross (1996)** \_\_\_\_\_ **Instructor, Developmental Studies**  
B.A., Michigan State University; M.A.Ed., Western Carolina University
- Kenneth N. Rudolph (1998)** \_\_\_\_\_ **Instructor, Social/Behavioral Sciences**  
B.S., North Carolina State University; M.S., University of Utah
- T. David Smith (1999)** \_\_\_\_\_ **Chairperson, Humanities/Fine Arts**  
B.A., California State University-Fresno; M.A., University of Florida
- Carol W. Stanford (2003)** \_\_\_\_\_ **Instructor, Health & Physical Education/Intramurals Director**  
B.S., M.A.Ed., Western Carolina University
- Charles Lee Swendsen, Ph.D. (2003)** \_\_\_\_\_ **Instructor, Biology**  
B.S., Morningside College; M.S., Ph.D., University of Iowa
- Christine Tibbetts (1999)** \_\_\_\_\_ **Chairperson, English/Communications**  
B.A., Agnes Scott College; M.Ed., Emory University; further graduate study: Western Carolina University
- Sharon Trammel (1999)** \_\_\_\_\_ **Instructor, Humanities/Fine Arts**  
B.A., University of North Carolina-Asheville; M.F.A., University of North Carolina-Greensboro; Renaissance Art Study, Florence, Italy
- Paula W. Trilling (2001)** \_\_\_\_\_ **Instructor, Biology**  
A.S., Asheville-Buncombe Technical Community College; B.A., University of North Carolina-Asheville; M.A.Ed., Western Carolina University
- Heather K. Vaughn (2000)** \_\_\_\_\_ **Instructor, English/Communications**  
B.A., Elon College; M.A., University of Nebraska - Lincoln
- Valerie K. Watts (2000)** \_\_\_\_\_ **Instructor, Humanities/Fine Arts**  
A.A., Bucks Community College; B.A., Rider College; M.A., University of Georgia; further study: Universidad de Madrid, Madrid, Spain

- George Robert Webb, Jr. (2004)** \_\_\_\_\_ Instructor, Mathematics  
B.A., University of North Carolina at Asheville; M.A.Ed., Western Carolina University
- Laurel H. Young (2001)** \_\_\_\_\_ Instructor, Biology  
B.S., University of Tennessee, M.S., Western Carolina University
- Leesa Young (1995)** \_\_\_\_\_ Instructor, Social/Behavioral Sciences  
B.A., North Carolina State University; M.H.R., University of Oklahoma

Administration,

## DIVISION OF BUSINESS AND HOSPITALITY EDUCATION

Faculty,

and Staff

- Joseph W. Franklin, C.C.P. (1980)** \_\_\_\_\_ Dean, Business and Hospitality Education  
B.S., Mars Hill College; M.A., Appalachian State University; Ed.S., Western Carolina University; Ed.D., East Tennessee State University
- Jonathan H. Bricker (2000)** \_\_\_\_\_ Instructor, Business Administration  
B.S., University of Oregon; M.A., University of Tennessee
- Donnah M. Cole, R.H.I.A. (2003)** \_\_\_\_\_ Instructor, Administrative/Medical Systems Technologies  
B.S., Western Carolina University
- Vincent J. Donatelli (2001)** \_\_\_\_\_ Instructor, Hospitality Education  
A.O.S., Certificate, Culinary Institute of America
- Kathleen Doole (1995)** \_\_\_\_\_ Instructor, Business Computer Technologies  
A.A.S., Blue Ridge Community College; B.A., William Paterson College of New Jersey; M.A.Ed., Western Carolina University; further graduate study, North Carolina State University
- Jean R. Finley (2004)** \_\_\_\_\_ Instructor, Business Computer Technologies  
A.A.S., McDowell Technical Community College; B.A., Gardner Webb University;  
M.A.Ed., Western Carolina University
- John H. Humphrey, Jr., C.C.P. (1987)** \_\_\_\_\_ Instructor, Business Computer Technologies  
B.S., North Carolina State University; M.B.A., University of North Carolina at Chapel Hill; Ed.D., East Tennessee State University, further graduate study: North Carolina State University
- Carolyn B. Hutchinson, C.P.A., C.I.A. (2000)** \_\_\_\_\_ Instructor, Business Administration  
B.S., University of North Carolina at Asheville; M.B.A., Clemson University
- Jacqueline A. Larsen (2002)** \_\_\_\_\_ Instructor, Business Computer Technologies  
B.A., M.B.A., Cleveland State University
- Philip R. Leftwich (1996)** \_\_\_\_\_ Chairperson, Business Administration  
B.S.B.A., Western Carolina University; M.B.A., University of North Carolina at Charlotte; Ed.D., North Carolina State University
- Lewis R. Lightner, Jr. (2000)** \_\_\_\_\_ Chairperson, Networking Technologies  
A.A.S., Asheville-Buncombe Technical Community College
- Steven L. Marcus (2001)** \_\_\_\_\_ Instructor, Networking Technologies  
A.A.S., Haywood Community College; B.S., University of North Carolina at Asheville
- Mark Moritz (2001)** \_\_\_\_\_ Instructor, Hospitality Education  
A.O.S., Johnson & Wales University
- Michael J. O'Kane (2001)** \_\_\_\_\_ Instructor, Business Computer Technologies  
B.A., Sheffield Polytechnic; M.S., State University of New York at Binghamton
- Carol C. Paxton (1999)** \_\_\_\_\_ Instructor, Business Computer Technologies  
A.A.S., Asheville-Buncombe Technical Community College; B.S., M.B.A., M.A.Ed., Western Carolina University;  
further study: East Tennessee State University
- Robert H. Potts, G.R.I. (2001)** \_\_\_\_\_ Coordinator, Real Estate Programs  
A.A.S., Southwestern Community College; B.S.B.A., Western Carolina University; further study: Asheville-Buncombe Technical Community College
- Andrew T. Pratt (2003)** \_\_\_\_\_ Instructor, Hospitality Education  
A.A.S., University of Hawaii; A.O.S., New England Culinary Institute
- Kelly C. Randolph, C.P.A. (1998)** \_\_\_\_\_ Instructor, Business Administration  
B.S.B.A., M.S., Appalachian State University
- Walter A. Rapetski, Jr. (1998)** \_\_\_\_\_ Instructor, Hospitality Education  
A.A.S., B.S., M.S., Rochester Institute of Technology
- Marlene Roden (1999)** \_\_\_\_\_ Instructor, Business Computer Technologies  
B.S., graduate study, Western Carolina University

- Jonathan S. Ross (2004)** \_\_\_\_\_ Instructor, Digital Media  
B.M., James Madison University; M.M., Binghamton University
- Marilyn K. Schmid (1989)** \_\_\_\_\_ Instructor, Administrative/Medical Systems Technologies  
B.S., M.S.T.E., University of Akron; further graduate study: University of New Orleans, Western Carolina University
- Gary A. Schwartz (1984)** \_\_\_\_\_ Instructor, Hospitality Education  
B.A., University of Michigan; J.D., Harvard Law; graduate study: University of Cincinnati
- Misty L. Shuler, R.H.I.A. (1998)** \_\_\_\_\_ Chairperson,  
Administrative/Medical Systems Technologies  
B.S., Western Carolina University
- Pamela J. Silvers (1996)** \_\_\_\_\_ Chairperson, Business Computer Technologies  
B.S., University of North Carolina at Asheville; M.A.Ed., Western Carolina University
- Sheila Tillman (1990)** \_\_\_\_\_ Chairperson, Hospitality Education  
A.A.S., Asheville-Buncombe Technical Community College; B.S., University of Rhode Island; M.A.Ed, Western Carolina University
- Kathy S. Toler (1983)** \_\_\_\_\_ Instructor, Business Administration  
B.A., M.A.T., University of South Carolina; further graduate study: Western Carolina University
- Charlie K. Widner (1999)** \_\_\_\_\_ Instructor, Food Service Technology  
A.A.S., Asheville-Buncombe Technical Community College
- William L. Wolfe (2001)** \_\_\_\_\_ Instructor, Networking Technologies  
A.A.S., Asheville-Buncombe Technical Community College; B.S., University of North Carolina - Asheville
- Rhonda P. Wood (1993)** \_\_\_\_\_ Instructor, Administrative/Medical Systems Technologies  
A.A.S., Asheville-Buncombe Technical Community College; B.S., University of North Carolina at Asheville; M.A.Ed., Western Carolina University; further graduate study: Western Carolina University

Administration,  
Faculty,  
and Staff

## DIVISION OF ENGINEERING AND APPLIED TECHNOLOGY

- Robert L. Anderson (1993)** \_\_\_\_\_ Dean, Engineering and Applied Technology  
B.S., M.In.Ed., Clemson University; further graduate study, Clemson University, Ed.D.North Carolina State University
- Samuel L. Barnes (1988)** \_\_\_\_\_ Instructor, Machining Technology  
Diploma, Technical Diploma, A.A.S., Asheville-Buncombe Technical Community College; B.S., Western Carolina University; Master Tool & Die Maker
- Larry S. Boyd (1986)** \_\_\_\_\_ Chairperson, Machining and Welding  
and Interim Chairperson, Mechanical Engineering Technology  
A.A.S., Asheville-Buncombe Technical Community College; B.S.M.E.T., Western Carolina University, University of North Carolina at Asheville
- Kenneth F. Czarnowski (2003)** \_\_\_\_\_ Chairperson, Construction Management Technology  
B.S., B.A., Lawrence Technological University, R.A., N.C.A.R.B.
- Lynn V. Ehrke (2003)** \_\_\_\_\_ Instructor, Civil Engineering/CAD  
B.S., M.S., Ph.D, Virginia Polytechnic Institute; M.B.A., University of Pittsburgh
- Charles P. Farmer (2003)** \_\_\_\_\_ Instructor, Welding Technology  
A.A.S., Diploma, Asheville-Buncombe Technical Community College; B.S., Mars Hill College
- M. Kevin Fletcher (2003)** \_\_\_\_\_ Instructor, Automotive Service Technology  
A.A.S., Asheville-Buncombe Technical Community College; ASE, Master Automotive Technician; ASE Certified, Engines, Heavy Trucks, Electrical, Diesel
- Robert Hixson (1996)** \_\_\_\_\_ Chairperson, Civil Engineering/Surveying Technology  
B.S. U.S. Military Academy, M.E., University of Florida; North Carolina, PE.
- James B. Houston (1999)** \_\_\_\_\_ Instructor, Electronics  
A.A.S., Asheville-Buncombe Technical Community College; A.A.S. Community College of The Air Force; B.A., University of North Carolina-Chapel Hill
- Sherian D. Howard (1985)** \_\_\_\_\_ Chairperson, CAD Technology  
A.A.S., Asheville-Buncombe Technical Community College; B.S.M.E.T., Western Carolina University, University of North Carolina at Asheville; M.S., Western Carolina University
- Lauren D. Karahalis (2004)** \_\_\_\_\_ Instructor, Computer-Aided Design  
B.S., Appalachian State University
- J. Christopher Martin (2004)** \_\_\_\_\_ Instructor, Computer Engineering Technology  
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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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