

# Asheville-Buncombe Technical Community College

www.abtech.edu

Catalog of Courses  
Day and Evening College  
Volume 45  
2007-2008

## Asheville Campus

340 Victoria Road  
Asheville, NC 28801

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

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

## Enka Campus

1459 Sand Hill Road  
Candler, NC 28715

Phone: 828/254-1921  
Ext. 5801  
Fax: 828/418-0019

## Madison Campus

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

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

## A-B Tech at the Mall

Asheville Mall  
3 South Tunnel Road  
Asheville, NC 28805

Phone: 828/254-1921  
Ext. 7591

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

### Recognized and approved by:

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

### Program Accreditors/Approvals:

- Accreditation Review Committee on Education in Surgical Technology
- American Culinary Federation
- American Dental Association
- American Veterinary Medical Association Committee on Veterinary Technician Education and Activities
- City and Guilds of London Institute
- 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 Appraisal Board
- North Carolina Board of Nursing
- North Carolina Office of Emergency Medical Services
- North Carolina Real Estate Commission

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.

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Address correspondence to the appropriate office in care of:

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**340 Victoria Road**  
**Asheville, NC 28801**

**Tel: 828/254-1921**  
**Fax: 828/251-6355**  
**Internet: [www.abtech.edu](http://www.abtech.edu)**

# Curriculum Programs

Program	Credential	Schedule
Accounting	A.A.S. Degree	Day/Evening
Accounting Level I	Certificate	Day
Accounting Level II	Certificate	Day
Air Conditioning, Heating and Refrigeration Technology	Diploma	Day/Evening
Basic	Certificate	Day/Evening
Intermediate	Certificate	Day/Evening
Advanced	Certificate	Evening
Associate Degree Nursing	A.A.S. Degree	Day/Evening
Automotive Systems Technology	A.A.S. Degree	Day
Automotive Systems Technology	Diploma	Evening
AST - Basic Auto Repair	Certificate	Day/Evening
AST - Drive Trains	Certificate	Day/Evening
AST - Electrical/Electronics	Certificate	Day/Evening
AST - Under-Car	Certificate	Day/Evening
Baking and Pastry Arts	A.A.S. Degree	Day
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
Entrepreneurship	Certificate	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 Arts	A.A. Diploma	Day/Evening
Associate in Science	A.S. Degree	Day/Evening
Associate in Fine Arts	A.F.A. Degree	Day
Computed Tomography & Magnetic Resonance Imaging Technology	Diploma	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

Curriculum Programs	Computer Information Technology	A.A.S. Degree	Day/Evening
	Database Management	Certificate	Day/Evening
	GIS (Geographic Information Systems)	Certificate	Day/Evening
	Microcomputer Applications	Certificate	Day/Evening
	PC Installation and Maintenance	Certificate	Day/Evening
	Construction Management Technology	A.A.S. Degree	Evening
	Construction Management Technology	Certificate	Evening
	Cosmetology	A.A.S. Degree	Day
	Cosmetology	Certificate	Day
	Criminal Justice Technology	A.A.S. Degree	Day/Evening
	Culinary Technology	A.A.S. Degree	Day
	Dental Assisting	Diploma	Day
	Dental Hygiene	A.A.S. Degree	Day
	Digital Media Technology	A.A.S. Degree	Day/Evening
	Digital Video	Certificate	Day/Evening
	Interactive Multimedia	Certificate	Day/Evening
	Early Childhood Associate	A.A.S. Degree	Day
	Early Childhood	Certificate	Day/Evening
	Infant/Toddler Care	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
	Electrical Wiring	Certificate	Evening
	Instrumentation and Control	Certificate	Day/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
	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
	Industrial Systems Technology	A.A.S. Degree	Day/Evening
	Basic Maintenance	Certificate	Day/Evening
	Metal Fabrication	Certificate	Day/Evening
	Information Systems Security	A.A.S. Degree	Day/Evening



Machining Technology	A.A.S. Degree	Day/Evening
Machining Technology	Diploma	Day/Evening
Basic	Certificate	Day/Evening
CNC Programming	Certificate	Day/Evening
Marketing and Retailing	A.A.S. Degree	Day/Evening
Retail Marketing	Certificate	Day/Evening
Mechanical Engineering Technology	A.A.S. Degree	Day
MET - Manufacturing	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
CCNA Preparation	Certificate	Day/Evening
CCNP Preparation	Certificate	Day/Evening
Basic Network Administration	Certificate	Day/Evening
RHCT Preparation	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
Resort and Spa Management	A.A.S. Degree	Day
Social Services	A.A.S. Degree	Day/Evening
Surgical Technology	A.A.S. Degree	Day
Surgical Technology	Diploma	Day
Surveying Technology	A.A.S. Degree	Day/Evening
Civil/Surveying CAD	Certificate	Day/Evening
Surveying Fundamentals	Certificate	Day/Evening
Therapeutic Massage	A.A.S. Degree	Day
Therapeutic Massage	Diploma	Day
Veterinary Medical Technology	A.A.S. Degree	Day/Evening
Web Technologies	A.A.S. Degree	Day/Evening
Web Designer	Certificate	Day/Evening
Web Programming	Certificate	Day/Evening
Welding Technology	A.A.S. Degree	Day/Evening
Welding Technology	Diploma	Day/Evening
Welding Technology - Basic Welding I	Certificate	Day/Evening
Welding Technology - Basic Welding II	Certificate	Day/Evening

Curriculum

Programs

# Directory of College Services and Offices

<b>Continuing Education</b> .....	Vice President Haynes Technology Center, Enka Campus, Ext. 5837
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 .....	Basic Skills Office Pines Building, Asheville Campus, Ext. 132
GED Test Scheduling .....	Basic Skills Office Pines Building, Asheville Campus, Exts. 132, 433
GED Test Results/Transcripts .....	GED Examiner Pines Building, Asheville Campus, Ext. 312
Occupational and Public Service Training .....	Executive Director Haynes Technology Center, Enka Campus, Ext. 5836
 <b>Curriculum Programs</b> .....	 Vice President, Instructional Services Simpson Administration Building, Asheville Campus, Ext. 120
CIS Implementation/Catalog .....	Interim Dean Simpson Administration Building, Ext. 240
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. 286
Career Pathways Partnership .....	Director Sunnicrest Building, Asheville Campus, Ext. 439
Engineering and Applied Technology .....	Dean Dogwood Building, Asheville Campus, Ext. 220

<b>Student Services</b> . . . . .	Vice President, Student Services Azalea Building, Asheville Campus, Ext. 140	Directory of
A-B Tech at the Mall . . . . .	Director Mall Site, Ext. 7590	College
Admissions . . . . .	Admissions Office Azalea Building, Asheville Campus, Exts. 144, 145, 210	Services and
Counseling . . . . .	Counselors Azalea Building, Asheville Campus, Exts. 141, 146, 206, 209, 434	Offices
Disability Services . . . . .	Coordinator of Disability Services Azalea Building, Asheville Campus, Ext. 141	
Graduation Application . . . . .	Associate Registrar Azalea Building, Asheville Campus, Ext. 291	
International Student Services . . . . .	International Student Advisor Azalea Building, Asheville Campus, Ext. 441	
Student Academic Records . . . . .	Records and Registration Azalea Building, Asheville Campus, Ext. 291, 376, 494, 204	
Student Activities . . . . .	Director of Student Activities Coman Student Activity Center, Asheville Campus, Ext. 203	
Transcript Request . . . . .	Records and Registration Azalea Building, Asheville Campus, Ext. 204	
Transfer Credits . . . . .	Director of Admissions 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 Coman Student Activity Center, Asheville Campus, Ext. 7585	
<b>Learning Resources</b> . . . . .	Dean Holly Building, Asheville Campus, Ext. 310	
Academic Learning Center . . . . .	Coordinator Laurel Building, Asheville Campus, Ext. 228	
Distance Learning . . . . .	Director Sycamore Building, Asheville Campus Ext. 300	
Instructional Technology . . . . .	Coordinator Holly Building, Asheville Campus, Ext. 304	
Library . . . . .	Director Holly Building, Asheville Campus, Ext. 307	
Service Learning . . . . .	Coordinator Holly Building, Asheville Campus, Ext. 7573	

College Services and Information

Directory of	ADA Coordinator . . . . .	Director of Human Resources Sunnicrest Building, Asheville Campus, Ext. 113
College	Books . . . . .	Bookstore Coman Student Activity Center, Asheville Campus, Exts. 274, 208
Services and	Emergencies . . . . .	Ext. 125 or 9-911
Offices	Financial Aid . . . . .	Financial Aid Office Azalea Building, Asheville Campus, Exts. 163, 876
	Foundation . . . . .	Executive Director Simpson Administration Building, Asheville Campus, Ext. 176
	Grants . . . . .	Grants Writer/Coordinator Simpson Administration Building, Asheville Campus, Ext. 7561
	Intramurals . . . . .	Ext. 843
	Job Placement . . . . .	JobLink Center Maple Building, Asheville Campus, 250-4761
	Mountain Tech Lodge . . . . .	Manager Magnolia Building, Asheville Campus, Ext. 248
	News, Publications . . . . .	Director of Communications Simpson Administration Building, Asheville Campus, Ext. 117
	Organizational and Professional Development . . . . .	Director Azalea Building, Asheville Campus, Ext. 178
	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, 155
	Resource Development . . . . .	Officer Simpson Administration Building, Asheville Campus, Ext. 179
	Security . . . . .	Chestnut Building, Asheville Campus Ext. 0

Curriculum Programs

Grade Changes . . . . .	Class Instructor
Tutoring . . . . .	Class Instructor

# College Calendar 2007-2008

*All dates in this calendar are subject to change.*

## Fall Semester - 2007

Registration: Current and Continuing Students .....	July 16 - 20
Registration: New Classified Students.....	July 23 - 27
General Registration.....	July 30 - August 10
Last Day to Pay Tuition and Fees.....	August 10*
<b>*Please note: Unpaid registrations will be deleted from the computer registration system at 4:30 p.m.</b>	
Late Registration .....	August 13 - 17
Last Day to Pay Tuition and Fees for Late Registration.....	August 17
New Student Welcome.....	August 16, 6:00 p.m. and August 17, 9:00 a.m.
Classes Begin.....	August 20
Schedule Adjustments .....	August 20 - 23
Minimester I .....	August 20 - October 15
Last Day to Drop for a Partial Refund (Full term).....	August 29
Late Start Semester First Class Day.....	August 27
Labor Day College Holiday.....	September 3
Professional Development - 1/2 Day .....	September 18
Student Fall Break .....	October 22 - 23
Minimester II second registration period.....	October 8 - 15
Minimester II .....	October 16 - December 17
Last Day to Withdraw from a full 16-Week Class.....	November 14
Thanksgiving Student Holiday .....	November 21 - 23
Thanksgiving College Holiday.....	November 22 - 23
Last Day of Class/Examinations** .....	December 17
Total Class Days.....	80
Winter College Holidays.....	December 21 - 31, January 1

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

## Spring Semester - 2008

Registration: Current and Continuing Students .....	November 26 - 30
General Registration.....	January 2 - 4
Last Day to Pay Tuition and Fees.....	January 4*

College

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

Calendar

Late Registration .....	January 7 - 11
Last Day to Pay Tuition and Fees for Late Registration .....	January 11
New Student Welcome.....	January 11, 9:00 a.m.
Classes Begin.....	January 14
Schedule Adjustments .....	January 14 - 16
Minimester I .....	January 14 - March 10
Martin Luther King Jr. Day College Holiday .....	January 21
Last Day to Drop for a Partial Refund (Full term) .....	January 28
Late Start Semester First Class Day.....	January 22
Professional Development - 1/2 Day .....	February 19
Minimester II second registration period.....	March 3 - 10
Minimester II .....	March 11 - May 12
Last Day to Apply for Spring Graduation .....	February 22
Last Day to Withdraw from a full 16-Week Class .....	April 14
Spring College Holiday .....	March 24
Student Spring Break.....	March 24 - 28
Last Day of Class/Examinations** .....	May 12
Spring Graduation.....	May 16
Total Class Days.....	80

## Summer Session - 2008

Registration: Current and Continuing Students .....	April 28 - May 2
General Registration.....	May 5 - 16
Last Day to Pay Tuition and Fees.....	May 16*

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

Late Registration .....	May 19 - 20
Last Day to Pay Tuition and Fees for Late Registration .....	May 20
New Student Welcome.....	May 20, 9:00 a.m.
Classes Begin.....	May 21
Schedule Adjustments .....	May 21-22
Last Day to Apply for Summer Graduation .....	May 16
Last Day to Drop for a Partial Refund.....	May 27
Independence Day College Holiday .....	July 4
Last Day to Withdraw from a full 10-Week Class .....	July 14
Last Day of Class/Examinations .....	July 29
Summer Graduation.....	August 1
Total Class Days.....	49, plus 1 class meeting make-up for Friday classes

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

# 2007

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

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

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29
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College  
Calendar

# 2008

January							February							March							April						
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September							October							November							December						
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														30													

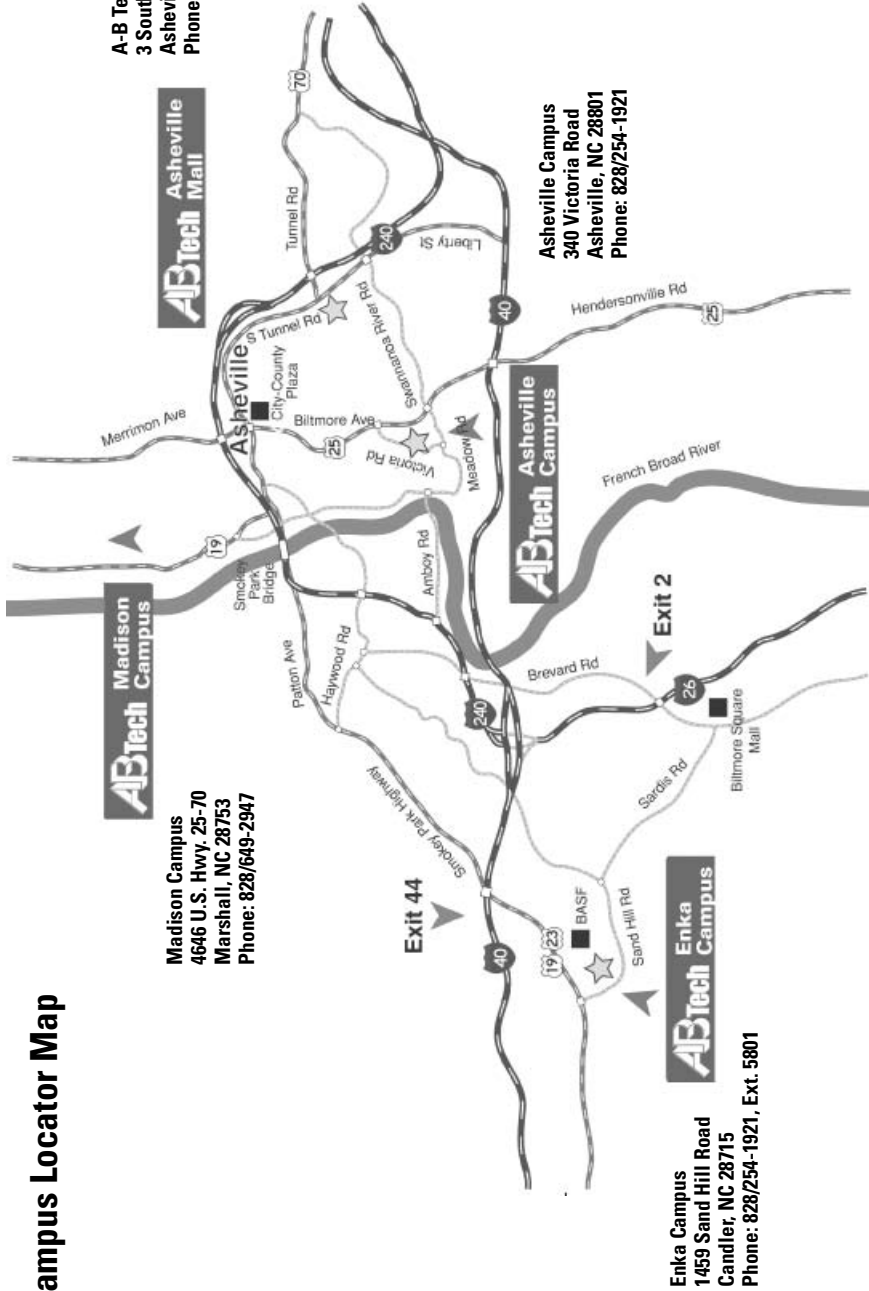
# Summary of Performance Measures - 2006 Report

Performance Measures	Performance Measure	Standard Met
	1. Progress of Basic Skills Students <b>Standard:</b> 75% making progress	YES 80% making progress
	2. Passing Rates for Licensure and Certification Exams <b>Standard:</b> 80% aggregate passing rate 70% minimum passing rate for all exams	YES 91% aggregate passing rate 7 of 7 exams with 70% or higher passing rate
	3. Goal Completion of Completers <b>Standard:</b> 95% goal achievement	YES 100% of completers met their educational goal
	4. Employment Status of Graduates <b>Standard:</b> 96% employment rate adjusted for local employment conditions	YES 99.64% employment rate
	5. Performance of College Transfer Students <b>Standard:</b> Equivalent to Native UNC Sophomores and Juniors (87.1%)	NO 85.2% 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 <b>Standard:</b> 70% passing rate	YES 89% passing rate
	7. Success of Developmental Students in Subsequent College Courses <b>Standard:</b> No statistically significant difference between the performance of developmental and non-developmental students	YES Developmental pass rate: 85% Non-developmental pass rate: 82%
	8. Satisfaction of Completers and Non-Completers <b>Standard:</b> 90% satisfied with the quality of college programs and services	YES 99% satisfaction rate
	9. Curriculum Student Retention and Graduation <b>Standard:</b> 60% of student cohort retained or graduated	YES 63% retention rate
	10. Employer Satisfaction <b>Standard:</b> 85% satisfied with the services provided by the college	YES 97% satisfaction rate
	11. Business/Industry Satisfaction with Services Provided <b>Standard:</b> 90% satisfied with the services provided by the college	YES 100% satisfaction rate
	12. Program Unduplicated Headcount Enrollment <b>Standard:</b> Three year average annual enrollment of more than 10 students	YES All A-B Tech programs met this standard

Source: 2006 Critical Success Factors Report

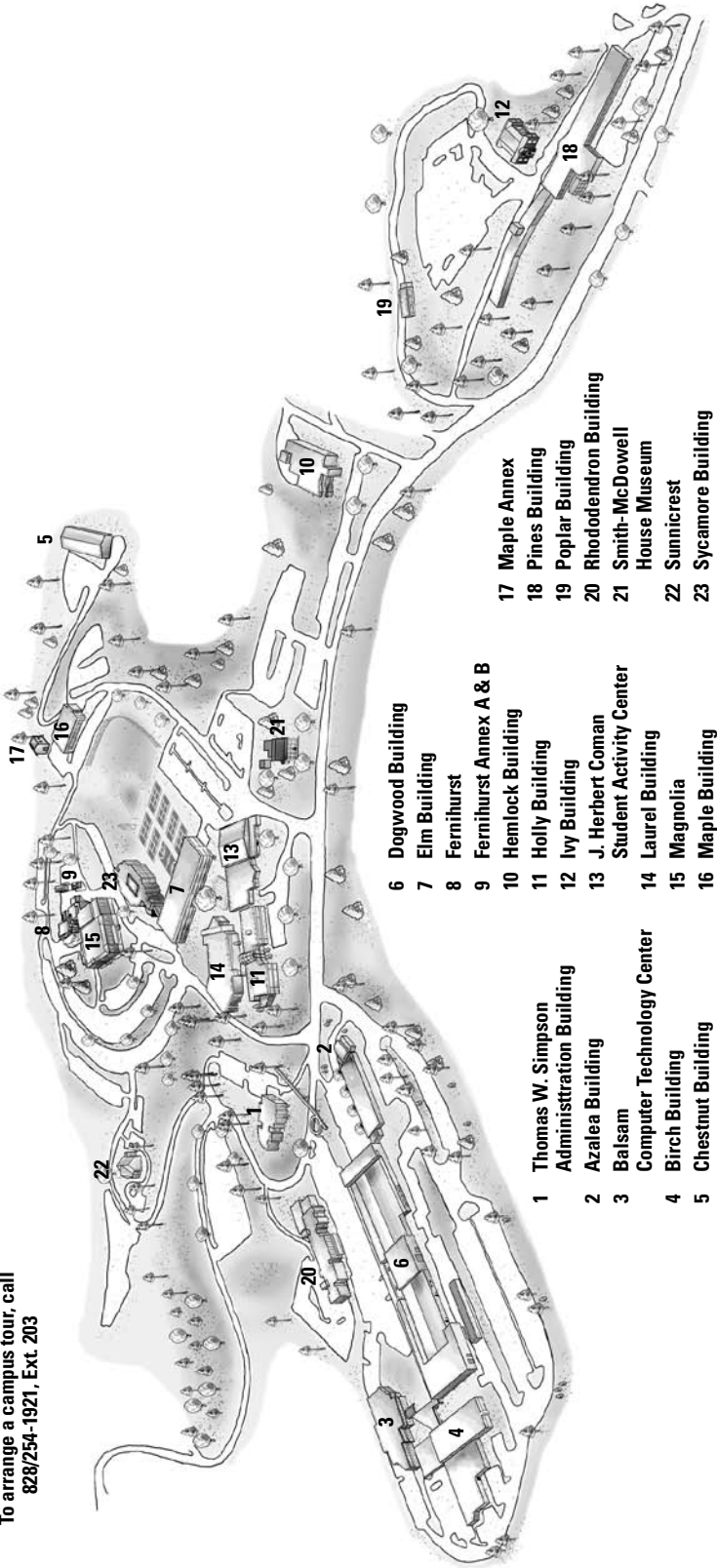


# Campus Locator Map



# Asheville-Buncombe Technical Community College - Asheville Campus

To arrange a campus tour, call  
828/254-1921, Ext. 203

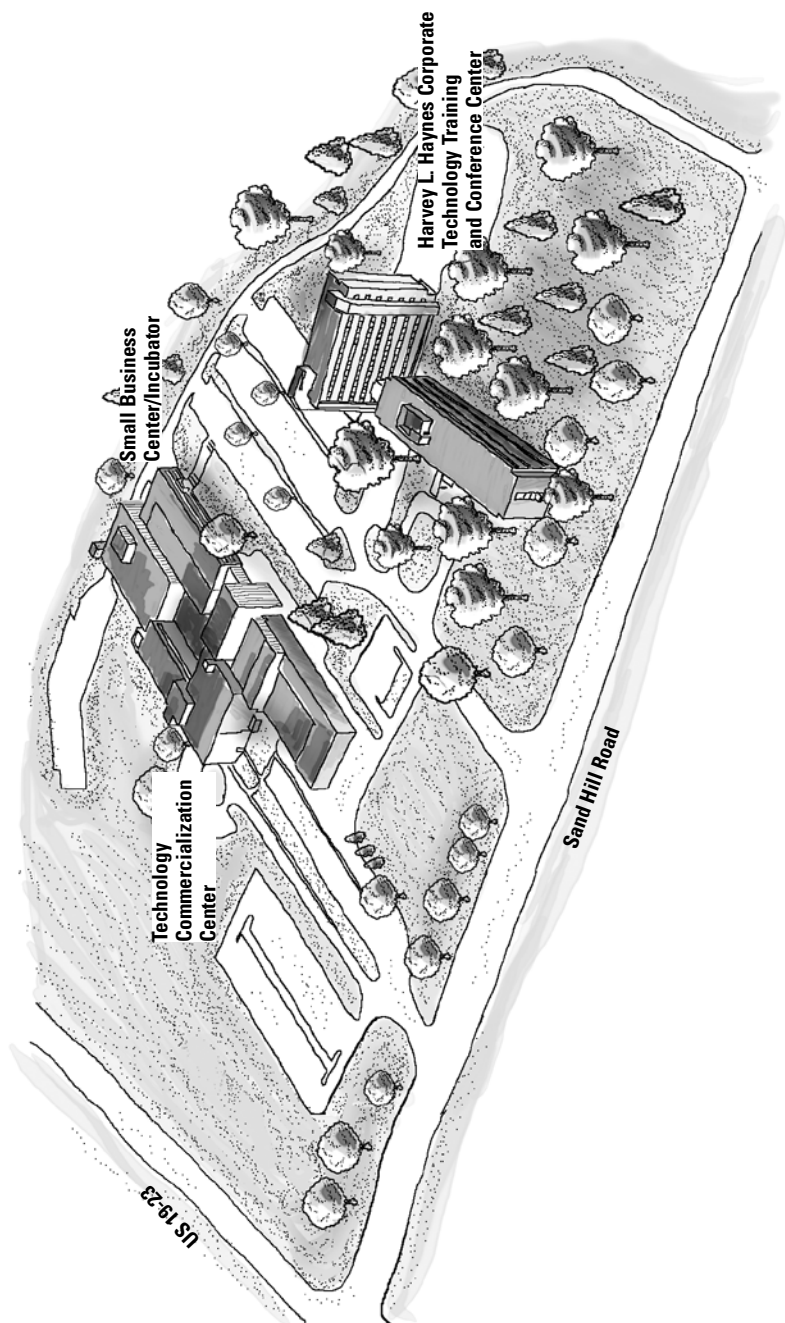


- 1 Thomas W. Simpson Administration Building
- 2 Azalea Building
- 3 Balsam Computer Technology Center
- 4 Birch Building
- 5 Chestnut Building

- 6 Dogwood Building
- 7 Elm Building
- 8 Fernhurst
- 9 Fernhurst Annex A & B
- 10 Hemlock Building
- 11 Holly Building
- 12 Ivy Building
- 13 J. Herbert Coman Student Activity Center
- 14 Laurel Building
- 15 Magnolia
- 16 Maple Building

- 17 Maple Annex
- 18 Pines Building
- 19 Poplar Building
- 20 Rhododendron Building
- 21 Smith-McDowell House Museum
- 22 Sunnicrest
- 23 Sycamore Building

# Asheville-Buncombe Technical Community College - Enka Campus



Campus  
Map

# Buildings Legend

Buildings  
Legend

## Asheville Campus Facilities

### Thomas W. Simpson

#### Administration Building

- Administrative Services
- Business Office
- College Relations Office
- Communications Office
- Elevated Lecture Room
- Foundation Office
- Grants Office
- Instructional Services
- Office of the President
- Resource Development Office

#### Azalea Building

- Admissions Office
- Career Center
- Counseling Center
- Disability Services
- Financial Aid Office
- International Student Services
- Organizational and Professional Development Office
- Placement Testing
- Records and Registration(Registrar)
- Research and Planning Office
- Veterans Representative

#### Balsam Computer Technology Center

- Cisco Networking Academy Program
- Computer Information Technology
- Digital Media Technology
- Medical Coding
- Medical Office Administration
- Medical Transcription
- Networking Technology
- Office Systems Technology
- Red Hat Academy
- Web Technologies
- Word Processing/Desktop Publishing

#### Birch Building

- Accounting
- Business Administration
- Cosmetology
- Early College
- Human Resources Management
- Marketing and Retailing
- Real Estate
- Real Estate Appraisal
- Resort and Spa Management
- Therapeutic Massage

#### Chestnut Building

- Plant Operations
- Receiving
- Security Office

#### Coman Student Activity Center

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

#### Dogwood Building

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

#### Elm Building

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

#### Fernihurst

- Baking and Pastry Arts
- Conference Rooms
- Culinary Technology
- Dining Rooms
- Hotel and Restaurant Management

#### 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 Building**

- Computer Lab
- Distance Learning
- Educational Technology Services
- Library
- Service Learning Center

**Ivy Building**

- Continuing Education Classes
- Decorative Restoration

**Laurel Building**

- Academic Learning Center
- Developmental Studies
- Ferguson Auditorium
- Social/Behavioral Sciences

**Magnolia**

- Baking and Pastry Arts
- Culinary Technology
- Demonstration Hall
- Dining Rooms
- Hotel and Restaurant Management
- Mountain Tech Lodge

**Maple Building**

- Continuing Education Classes
- JobLink Career Center
- Workforce Development Office

**Maple Annex**

- Continuing Education Classes

**The Pines**

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

**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
- Human Resources

**Sycamore Building**

- Biology
- Chemistry/Physics
- Distance Learning
- Video Conference Center

**Enka Campus Facilities**

**Harvey L. Haynes Corporate Technology  
Training and Conference Center**

- Cisco Networking Academy Program
- Continuing Education Administration
- Continuing Education Classes
- Continuing Education Business Office/Registration
- Corporate and Economic Development
- Occupational and Public Service Training

**Technology Commercialization Center**

- BioNetwork/BioBusiness
- Biotechnology
- BioWork Classroom/Lab
- Core Technology Lab
- Technology Incubator

**Small Business Center**

- Small Business Incubator
- Student Incubator

**Madison Campus Facilities**

**Liston B. Ramsey Building**

- Administrative Offices
- Auditorium
- Classrooms
- Computer Lab
- Conference Room
- Shop

Buildings

Legend



# 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.

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

## Administration

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



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

## Curricula

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

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

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

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.



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

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

Organization

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 24,000 in 2005-2006.

## **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.

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. A-B Tech at the Mall is located at the Asheville Mall on South Tunnel Road in Asheville, NC.

## College Mission and Vision

### College Mission Statement

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

### College Vision Statement

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

## Nondiscrimination Policy

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

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

Director of Human Resources

Asheville-Buncombe Technical Community College

340 Victoria Road

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, or materials in alternative accessible formats should contact the Disability Services Counselor in the Azalea Building. Persons who wish to file a complaint of alleged discrimination on the basis of disability should contact the Director of Human Resources listed above.

## Communicable Disease Policy

Asheville-Buncombe Technical Community College shall not discriminate against applicants, employees, students, or persons utilizing A-B Tech services who have or are suspected of having a communicable disease. As long as employees are able to perform satisfactorily the essential functions of the job, and there is no medical evidence indicating

that the employee's condition is a threat to the health or safety of the individual, coworkers, students, or the public, an employee shall not be denied continued employment. Applicants shall not be denied employment, nor shall students be denied admission to the campus or classes, nor shall persons utilizing A-B Tech services be denied services based on whether they are suspected of having a communicable disease so long as there is no threat to the health and safety of students, staff, or others involved. A-B Tech will consider the educational or employment status of individuals with a communicable disease or suspected of a communicable disease on an individual, case-by-case basis following any procedures outlined by the President.

Organization

## **Internet and Campus Network Acceptable Use Policy**

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

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

1. The internet and associated resources contain a wide variety of material and information. Information available on the internet is not generated or selected by Asheville-Buncombe Technical Community College. The College is not responsible for the accuracy or quality of the information obtained through or stored on the campus network.
2. The creation, display, or transmittal of illegal, malicious, or obscene material is prohibited.
3. Asheville-Buncombe Technical Community College will not be liable for the actions of anyone connecting to the internet through College facilities. All users shall assume full liability (legal, financial, or otherwise) for their actions.
4. The user is responsible for complying with laws protecting software or other accessed information. Downloading programs and files may violate United States copyright laws that protect information and software. Although the internet provides easy access to software distributed by companies on a trial basis, this does not mean that the software is free or that it may be distributed freely. All files downloaded from a source external to the campus must be scanned for viruses.

5. Because of the 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.us/sitPolicies.asp](http://www.scio.state.nc.us/sitPolicies.asp)**.

# 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 exempt from registration fees. There are no registration fees for basic skills classes.

## Course Repetition

### Continuing Education

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.

## 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) 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 company, 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, vendor provided, and company reimbursement.

**Customized Industry Training (CIT)** provides the flexibility to meet the retraining needs for existing industries which are making an appreciable capital investment, deploying new technology, and increasing the wages of employees who obtain advanced skills. The CIT Program augments the services of the New and Expanding Industry Training (NEIT) and Focused Industrial Training (FIT) Programs. Training is customized for the individual companies served and projects are approved on a case-by-case basis. The CIT Program is a new option for assisting business and industry in remaining productive and profitable.

Continuing  
Education

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

The Incubator is a model which allows entrepreneurs a 'jump start' for their business. This relatively new program is a dynamic process that provides: physical space for one's business, consulting and technical assistance, access to business services and equipment, technology support and guidance in obtaining financing.

The **Quality Program** provides training and technical assistance in total quality practices and international quality standards for businesses, healthcare providers and public and private sector agencies. Offerings include Six Sigma, Lean, job and workforce assessment, quality skills, statistical process control, facilitator development, 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 Training Department** provides hundreds of offerings each year. A-B Tech works to meet the needs of those in the marketplace who want to master emerging technologies, gain the professional certifications that allow them to advance in their professions, or enter a field that promises continued growth. For Administrative, Technical, Customer Service and Professional workers alike, computer skills are a constant. A-B Tech's programs provide training in a variety of disciplines, to help North Carolina's workforce grow and learn. From basic courses to intensive professional programs, A-B Tech provides critical and thorough instruction in areas of software, hardware, and peripherals. Designed for both beginning students and professionals seeking to update their skills, our courses and programs cover such timely subjects as administrative and financial software, relational database technology, software-specific training programs, operating systems, and beyond. Courses are offered in traditional instructor-led, online, and hybrid formats.

## 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 Rescue, Emergency Services, Criminal Justice/Law Enforcement, Nurse Aide I and II, and Dental Radiography. Other offerings include programs for the following occupational areas: effective teacher training, emission standards “OBD,” equine management, notary public, biowork, and public safety education.

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

**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 Chinese, French, German, Italian, Japanese, Russian, 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.



## Basic Skills and Human Resources Development

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.

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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
- Mathematics
- Social Studies
- Science
- Reading

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

To be eligible for testing, an applicant must:

- be at least 18 years old (16- and 17-year-olds may test with special permission).
- be a current North Carolina resident.
- be certified to test through the GED Preparation Program (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 independent as possible, primarily by improving academic, social, survival, and independent-liv-

ing 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.

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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

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

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

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Persons applying for admission into all degree and diploma programs are required to take the Accuplacer Test or submit acceptable SAT/ACT scores earned within the preceding three years. Requests for reasonable accommodations or test exemption by transfer credit will be reviewed individually. Alternate testing formats will be made available to individuals with disabilities upon request to the Disability Services Counselor.
4. In the case of the seven 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 program for details).
5. A complete physical examination may be required by some programs, but only after the student is admitted.

Upon completion of this procedure, the student 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. There is a limited application period. Competitive Allied Health programs include Associate Degree Nursing, Dental Assisting, Dental Hygiene, Medical Sonography, Practical Nursing, Radiography, and Surgical Technology. Applicants are selected for admission to these programs based upon special criteria. Selection criteria vary for each program. The exact admissions evaluation criteria for each competitive Allied Health program can be found in the Admissions section of the college web page at **www.abtech.edu**. The printed version is available in the Admissions Office. The criteria are revised and updated annually.

## Placement Testing

The purpose of placement testing is to match the academic readiness of the incoming student with the academic requirements of the curriculum. Persons applying for admission into all degree and diploma programs are required to take the Accuplacer Test. Students who are unclassified (not desiring to be enrolled in a major) will need to take the placement test if they desire to take a mathematics, English, reading class or any course for which math or English are prerequisites. Alternate testing formats will be made available to individuals with disabilities upon request from the Disability Services Counselor. Documentation of disability will be required prior to the establishment of accommodations for placement testing.

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

pletes 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.

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

### **Transfer Credit from Other Institutions.**

Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other post-secondary institutions accredited by a regional accrediting agency. Applicants who seek transfer credit should make regular application to the College and obtain from the Admissions Office a Request for Transfer Credit form for the evaluation of all post-secondary work. 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.

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 evaluated by the university to which they transfer on a course-by-course basis.

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### **Credit by Examination**

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar College level credits, record of military study, certification or license, standardized test scores, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Student Records and Registration Office. This test must be administered immediately after the 10 percent point in the semester.

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

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

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

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on part-time basis. There is no extra charge for full-time students who are taking at least 16 credit hours.
2. Present evidence of proficiency, complete the written request form, and have the request approved prior to the 10 percent point of the semester.
3. Remain enrolled and attend class until the examination is administered. During this period, students who have written approval for the exam may attend class without purchasing textbooks and materials. If books are purchased and returned for refund, they must be in new condition.
4. Students who are very confident of passing the exam may request a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and will be awarded a grade of “A” or “B” for the course. Receiving credit does not entitle the student to a tuition refund.

6. Students who do not receive credit by examination will 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 credit by exam. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination.

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

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

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

**AP and CLEP.** College credit may be awarded if appropriate conditions are met by Advanced Placement (AP) 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 or higher on the AP tests offered by the College Board. CLEP is granted for scores of 50th percentile or higher. AP and CLEP credit accepted at other post-secondary institutions is not automatically transferred to A-B Tech, but is reviewed when scores are received.

A-B Tech credit may be granted to students who have satisfactorily passed certain CLEP tests. A-B Tech will accept a total of 12 semester credit hours earned through CLEP tests. See the Admissions Director in the Azalea Building for details.

**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).



# Tuition and Expenses

## North Carolina Residency

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

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

## Tuition\*

### Fall, Spring, and Summer Semester:

N.C. residents per semester .....	\$632.00
Nonresident of N.C. ....	\$3,512.00
(16 or more credit hours)	
Part-time N.C. residents per credit hour per semester .....	\$39.50
Nonresident of N.C. per credit hour per semester .....	\$219.50
(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 \$14.00 for the fall and spring semesters and \$10.00 for the summer semester. The student who enrolls for eight or fewer day, on-campus credit hours will be charged a student activity fee of \$10.00 for the fall and spring semesters and \$6.00 for the summer semester.

## 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.....	\$600-900
Supplies.....	\$200-500

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

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

### Business and Hospitality Education

Books.....	\$1,000-1,500
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. xiii-xiv) 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 for 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 Records and Registration Office on or before the 10% point of the term as defined above.

# 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 warning, written warning, disciplinary probation, particular consequences adapted to the violation, suspension and expulsion. Any disciplinary decision rendered by the Vice President for Student Services may be appealed to the President.

Any student charged with a violation of the Code of Student Conduct may receive a written copy of the charges. He or she may also be given an appointment for a hearing. Rights, as they pertain to the hearing, are listed elsewhere in this manual.

The following actions are specifically prohibited at this College under the Code of Student Conduct:

1. **Academic Dishonesty** - You may not deceive any official of the College by cheating on any assignment, examination, or paper. This includes plagiarism, which is the intentional theft or unacknowledged use of another's words or ideas. Plagiarism includes (but is not limited to) paraphrasing or summarizing another's words or works without proper acknowledgement, using direct quotes of material without proper acknowledgement, or purchasing or using a paper or presentation written or produced by another. The faculty at A-B Tech may also consider presenting as original work a paper written for one class to satisfy a requirement in another class to be academic dishonesty.
2. **Alcoholic Beverages** - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.
3. **Animals** - You may not have an animal of any kind on campus. This includes animals left within a vehicle. Working dogs, such as police dogs and Seeing Eye dogs, are permitted.

4. **Damage to Property** - You may not damage property of the College or of any other person working at or attending the College.
5. **Disobedience** - You may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.
6. **Disorderly Conduct** - You may not conduct yourself in a way which will interrupt the academic mission of the College or which will disturb the peace of the College.
7. **Disruption** - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
8. **Drugs** - You may not possess, use, or be under the influence of any narcotic or illegal drug on campus in violation of the laws of the state of North Carolina or of the United States.
9. **False Information** - You may not present to the College or its employees false information; neither may you knowingly withhold information which may have an effect on your enrollment or your status in the institution and which is properly and legally requested by the College.
10. **Assault** - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.
11. **Gambling** - You may not gamble on campus.
12. **Possession of Weapons** - You may not have a weapon of any kind, including a knife, stun gun, or any firearm in your possession on campus. Law Enforcement officers are exempt from this prohibition.
13. **Professional Conduct** - Various curricula have specific codes of professional conduct for which you may be held accountable, if you are enrolled in those curricula.
14. **Theft** - You may not steal the property of another individual or of the College. Students who are caught stealing will be required to make restitution and may be eligible for civil or criminal prosecution as well as College discipline.
15. **Public Laws** - You may not violate the laws of the state of North Carolina while on campus. Doing so may lead to legal actions as well as campus discipline.
16. **Sexual and Other Unlawful Harassment** - You may not harass any member of the college community, including other students, employees, or other persons on the college campus. This prohibition includes sexual, verbal or physical harassment for any reason including race, color, age, religion, sex, national origin, disability, veteran's status, creed, sexual orientation, or political affiliation.
17. **Use of the Internet** - The College has an extensive policy 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 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.

13. **Personal Protective Equipment.** You must properly wear personal protective equipment at all times in any area of the College in which it is required.
14. **Perfumes.** You should avoid wearing strong perfumes of any kind, as other students may be allergic to them.

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

## Student Rights of Due Process

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

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

## Student and Grade Appeals Policy

If you feel that you have been disciplined unfairly or wish to appeal some other decision 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 matter at this level, then you should bring the matter to the attention of the Vice President for Student Services.

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

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

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

If the matter remains unresolved through the level of the appropriate Vice President, then you should return to the Vice President for Student Services who will then turn the matter over to the Student Appeals Committee. This Committee, which is composed of two students, two faculty members, a Student Services employee, and a 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 whose decision is final. When this policy is used to appeal a disciplinary action taken by the Vice President of Student Services in his or her capacity as the College discipline officer, the appeal will go directly to the President whose decision is final.

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

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

## Privacy of Student Records

1. 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/President's List



Directory Information will be released to anyone who asks for it, unless the student specifies in writing to the 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 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 Vice President for Student Services.

# Academic Procedures

## Classification of Students

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

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

### Declaring, Changing, or Adding Second Majors

In order to declare a major, change majors, or add a second major, the student needs to see 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.

## Class Attendance

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

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

**To receive course credit, a student should attend a minimum of 80% of the contact hours of the class. Upon accumulating absences exceeding 20% of the course contact hours, the student may be dropped from the class and will be awarded a grade of "U," unless the student follows the official withdrawal procedure before the grade of "U" is recorded. (To receive course credit when enrolled in an Allied Health program\*, a student should attend a minimum of 90% of the contact hours of all major area\* courses. Upon accumulating absences exceeding 10% of the contact hours, the student may be dropped from the class and**

**will be awarded a grade of “U”, unless the student follows the official withdrawal procedure before the grade of “U” is recorded.) The 90% minimum attendance requirement applies to these major area course prefixes: \* NUR, DEN, EMS, MLT, SON, PBT, RAD, SUR and VET.**

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

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

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## Prerequisites and Corequisites

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

## Course Substitutions

Course substitutions must be approved by the program area dean and documented in the student's registration record. The course grade will be the grade earned in the substitute course.

## First-Year Seminar

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

## Distance Learning

Before registering in an online curriculum course, a student must demonstrate necessary computer skills by successful completion of a previous online course (with a grade of “C” or higher) or by successfully completing the online orientation.

## Schedule Adjustments

### Dropping/Withdrawing from a Class

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

The student may drop classes through the first 10% of the term. (For full semester classes the 10% point occurs on the eighth day. For mini-esters 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 Coordinator. **All withdrawal forms must be submitted to the 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 (10% for allied health courses) may be dropped from the class and awarded a grade of "U," unless the student follows the official withdrawal procedure before the grade of "U" is recorded. The "U" grade is equivalent to an "F" and will affect the quality point ratio.

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

### Adding a Class

A student may add a class to his or her schedule by 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.

## College Withdrawal

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

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

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

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

## Grading System

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

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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 WITH-DRAWS. 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.

# Transcript Codes

Other codes that may appear on the college transcript include:

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

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

## Quality Points

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

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

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

## Final Examination Policy

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

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

## Auditing Courses

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

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## Curriculum Course Repetition

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

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

As courses are repeated, the higher grade becomes the official grade. Only a grade of “D” or above can replace an existing grade. The student must submit a “Transcript Correction” form to the Records and Registration Office to request that the lower grade be excluded in the grade point average calculation.

## Independent Study

Selected courses may be available for Independent Study, with approval of the appropriate Dean. The completed “Request for Independent Study” form must be presented to the Student Records and Registration Office when the student registers.

## 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.

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

The College has established this policy to:

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

This policy applies to all students, classified and unclassified.

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

### **I. Academic Warning**

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

### **II. Probation**

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

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

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

### **III. Suspension**

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

### **IV. Appeals**

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



## V. Reenrollment After Suspension

Students may reenroll after having been suspended for one semester.

### Academic Fresh Start

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

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### 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 of F, I, U or X and students enrolled in developmental courses are not eligible for the President's List for that semester. Students receiving credit for a course by examination are not affected.
4. The President's List will be compiled by the Registrar, the Administrative Assistant for Instructional Services, and Department Chairpersons. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President for Instructional Services will be responsible for final approval and publication.

# Academic Programs, Core Competencies, and Graduation Requirements

## Degree, Diploma, and Certificate Programs

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

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

## 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.

## Core Competencies

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

1. 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.

## 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 2007 cannot use a catalog earlier than 2002-2003). 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.  
To be eligible for graduation, at least one-half of the required program hours must be completed at A-B Tech. The following programs require that selected upper-level courses be completed in residency at A-B Tech: Associate Degree Nursing, Basic Law Enforcement Training, Computed Tomography/Magnetic Resonance Imaging, Dental Assisting, Dental Hygiene, Emergency Medical Science, Medical Laboratory Technology, Medical Sonography, Phlebotomy, Practical Nursing, Radiography, Surgical Technology, Veterinary Medical Technology, Real Estate, Cosmetology, Therapeutic Massage. A student who desires to transfer credit into one of these programs should consult with the department chairperson. Exceptions may be approved by the Vice President, Instructional Services.
  - c. Earn Credit-by-Exam.
3. Earn a grade of at least "C" in each course identified in the catalog as a major course and a minimum average of 2.0 ("C") quality points for the current program. Students completing their program of study with a program grade point average of 4.0 will be graduated with highest honors. Those who have a minimum program GPA of 3.75 will be graduated with high honors and those with a minimum program GPA of 3.50 will be graduated with honors. The student must assume primary responsibility for assuring that all requirements for graduation are met.
4. **Submit an application for graduation to the Records and Registration Office the semester before completing degree requirements.** Purchase caps, gowns, and diplomas in March (Spring Graduation) or June (Summer Graduation). Students who cannot attend graduation must still pay for the diploma.

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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.)

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## Transfer of Credit to Other Institutions

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

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

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

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

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

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

# Student Support Services

## Counseling Services and the Career Center

A-B Tech provides free, confidential counseling and related services for students through the Counseling Center located in the 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, diploma, or certificate curriculum are advised by a faculty member from that curriculum. Students who are not admitted to a degree, diploma, or certificate program are advised by 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 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 or the Vice President for Student Services.

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 6:00 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, note-takers, or need other reasonable accommodations, it is your responsibility to request these services from the Disability Services Office since Federal law prohibits the College from making pre-admission inquiries about disabilities. This office is located in the Counseling Center in the 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. 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.

## 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](http://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](mailto: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](mailto: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.  
**[dharmmon@abtech.edu](mailto:dharmmon@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.  
**pbulla@abtech.edu.**
15. **Placement Testing.** Placement testing may be accomplished at any college in the North Carolina Community College System. Scores can then be faxed by the originating college. Also, SAT or ACT scores may be used instead of testing. For information, e-mail the testing coordinator.  
**kedwards@abtech.edu.**
16. **Payment of Tuition and Fees.** Tuition and fees may be paid online at the College web page.
17. **Purchase of Books.** Books may be purchased online from the College Bookstore.



# Financial Aid

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

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself of any other financial assistance 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 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 or 876.

## 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).

**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).

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

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

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

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

The second quantitative standard referred to as the maximum time frame will be measured 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.

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

## Appeal of Financial Aid Termination

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

1. A student will indicate in writing to the Director of Financial Aid the reasons why he/she did not make satisfactory progress and why financial aid should not be terminated. Documentation to support the appeal is required.
2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
3. A student wishing to appeal the decision of the Director of Financial Aid may do so, in writing, to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made through the Student 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.

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 April 20, 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.

Students may access scholarship criteria on the A-B Tech website at **[www.abtech.edu/foundation](http://www.abtech.edu/foundation)**. 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/oep:** Click on “Information for Students” for federal student aid information.

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

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

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

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## The Hope Tax Credit

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

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

## The Lifetime Learning Tax Credit

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

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

## Veteran's Educational Benefits

The Veteran's Advisor will help incoming veterans 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.

# Other Policies Affecting the Campus Environment

## Parking Regulations

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

## Workplace Violence Prevention Policy and Procedures

### Policy

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.

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## No Weapons On Campus Policy

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

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

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

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

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

# Other College Services and Information

## College Services

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

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

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

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

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

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

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

**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.

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

**Dental Clinic.** Throughout the year, the Allied Dental Department provides oral health services, such as patient education, dental X-rays, cleaning 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. Distance Learning and the Virtual Campus is located in Holly, 107; telephone extension, 300.

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

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

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

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

**Holly Library.** The library provides students with access to print and electronic resources to meet their information need. Unique collections include a North Carolina Collection, audio books and feature films. The library hours are Monday-Thursday 8 a.m.-8 p.m., Friday 8 a.m.-4:30 p.m., and Saturday 12 p.m.-4 p.m. The library has a Research Central area on the main level where students can use the internet and electronic databases. Quiet study zones, group study rooms and wireless internet access are located throughout the building. The lower level contains a computer lab and Email Central. The library's circulation telephone ext. is 301.

HOURS:	Monday-Thursday	8:00 a.m. - 8:00 p.m.
	Friday	8:00 a.m. - 4:30 p.m.
	Saturday	12:00 p.m. - 4:00 p.m.

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

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

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

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

**Student Lounge.** A Student Lounge is located in the Coman Student Activity Center for those students with spare time and who wish to socialize.

**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.

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

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# 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  
Surgical Technology  
Social Services  
Veterinary Medical Technology

## **DIPLOMA AWARDED**

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

## **CERTIFICATE AWARDED**

Basic Law Enforcement Training  
Early Childhood Associate  
- Early Childhood Certificate  
Fire Protection Technology  
Infant/Toddler Care  
Phlebotomy

## Associate Degree Nursing

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

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

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

### Specific Requirements

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details. [http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)
3. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
4. Satisfactory completion of required immunizations.
5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
6. Students applying to the Associate Degree Nursing program are encouraged to have successfully completed: BIO 168, BIO 169, CIS 110, ENG 111, ENG 114, SOC 215, and a Humanities elective prior to program admission due to the rigorous nature of the A.D.N. curriculum.
7. North Carolina Board of Nursing requires criminal background checks on all applicants for initial licensure.
8. Clinical Agencies may require criminal background checks prior to admission to clinical sites.

To be eligible for admission to the Fall 2007 Associate Degree Nursing and Practical Nursing programs, applicants will be required to hold a documented current unrestricted credential as a Certified Nursing Assistant I (CNA I) from the North Carolina Division of Facility Services by June 15, 2007.



## Associate Degree Nursing

### Associate in Applied Science Degree – Day Option (A45120)

#### Program Summary

	Hours
General Education	20
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	8
<i>Social/Behavioral Sciences</i>	3
Core Courses	52
Other Courses	3
<b>Program Total</b>	<b>75</b>

Allied Health  
and Public  
Service  
Education

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

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

### Associate in Applied Science Degree – Evening and Weekend Option (A45120)

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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

### Specific Requirements

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details. [http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)
3. Current CPR for the Professional Rescuer certification is a pre-requisite 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 - Day Option (A45120BR)

*Credit is given for NUR 117, NUR 115, NUR 135 (14 hours)*

*An additional 38 credit hours are required.*

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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>
<b>Third Semester (Summer)</b>						
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>
<b>Fourth Semester (Fall)</b>						
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>
<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>21</b>	<b>15</b>	<b>36</b>	<b>38</b>

Allied Health  
and Public  
Service  
Education

**Associate Degree Nursing Bridge – Evening and Weekend  
Option (A45120BR)**

*Credit is given for NUR 117, NUR 115, NUR 135 (14 hours)  
An additional 38 credit hours are required*

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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>
<b>Third Semester (Summer)</b>							
NUR	188	Nursing in the Community		1	0	6	3
				<b>1</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Fourth Semester (Fall)</b>							
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>
<b>Fifth Semester (Spring)</b>							
NUR	125	Maternal Child Nursing		5	3	6	8
				<b>5</b>	<b>3</b>	<b>6</b>	<b>8</b>
<b>Sixth Semester (Summer)</b>							
NUR	235(A)	Adult Nursing II		2	2	7	5
				<b>2</b>	<b>2</b>	<b>7</b>	<b>5</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>21</b>	<b>15</b>	<b>36</b>	<b>38</b>

**Basic Law Enforcement Training (C55120)**

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

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

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

Specific Requirements

- 1. General college admission requirements.
- 2. Individuals must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book—General Statute 17-A and Title-12 Chapter 9 North Carolina Administrative Code.
- 3. Individuals must be sponsored by a North Carolina law enforcement agency. The letter of sponsorship must:
  - a. be signed by the agency head; i.e., Chief or Sheriff.
  - b. include a statement of sponsorship that certifies that the applicant meets the standards for certification as stated in number two above.
  - c. state that a background investigation was conducted.
- 4. Individuals must submit their sponsorship letter and college application to the Law Enforcement Training Center director at least 15 days prior to the courses scheduled start date. Applicants are accepted on a first-come, first-serve basis. Priority will be given to full-time employees of law enforcement agencies.
- 5. Individuals must provide the School Director a certified criminal record check for local and state records for the time period since the trainee has become an adult and from all locations where the trainee has resided since becoming an adult. An Administrative Office of the Courts criminal record check or a comparable out-of-state criminal record check will satisfy this requirement.
- 6. If accepted into the program, the student must submit completed North Carolina 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.
- 7. Prior to admission each student must achieve a reading score of at least the tenth grade. This testing can be done AFTER submitting your application for enrollment. 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.

Allied Health  
and Public  
Service  
Education

Basic Law Enforcement Training  
Certificate Program – Day and Evening Schedule

Program Summary			Hours		
One major Course			19		
			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CJC	100	Basic Law Enforcement Training	9	30	19

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

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*\*Program will begin Fall 2007 pending approval by State Board of Community Colleges.*

Computed Tomography and Magnetic Resonance Imaging Technology curriculum, a specialty for radiographers, prepares the individual to use specialized equipment to visualize cross-sectional anatomical structures and aid physicians in the demonstration of pathologies and disease processes. *Individuals entering this curriculum must be registered or registry-eligible radiologic technologists by the ARRT.*

Course work prepares the technologist to provide patient care and perform studies utilizing imaging equipment, professional communication, and quality assurance in scheduled and emergency procedures through academic and clinical studies.

Graduates may be eligible to sit for the American Registry of Radiologic Technologists Advanced-Level testing in Computed Tomography and/or Magnetic Resonance Imaging examinations. They may find employment in facilities which perform these imaging procedures.

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

### Specific Requirements

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

Notice

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

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

Allied Health  
and Public  
Service  
Education

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

Program Summary	Hours
General Education	6
English/Communication	6
Core Courses	36
<b>Program Total</b>	<b>42</b>

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

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

# Criminal Justice Technology

Allied Health  
and Public  
Service  
Education

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

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

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

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

Program Summary	Hours
General Education	20
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	8
<i>Social/Behavioral Sciences</i>	3
Core Courses	22
Other Courses	34
<b>Program Total</b>	<b>76</b>

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

			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
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>



**Third Semester (Summer)**

CJC	113	Juvenile Justice	3	0	3
CJC	114	Investigative Photography (or CJC 120)	1	2	2
CJC	131	Criminal Law	3	0	2
PSY	150	General Psychology	3	0	3
		Major Elective*	3	0	3
			<b>13</b>	<b>2</b>	<b>14</b>

Allied Health  
and Public  
Service  
Education

**Fourth Semester (Fall)**

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)	3	0	3
		Major Elective*	3	0	3
			<b>15</b>	<b>2</b>	<b>16</b>

**Fifth Semester (Spring)**

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)	3	0	3
		Major Elective*	3	0	3
			<b>14</b>	<b>2</b>	<b>15</b>

<b>Program Totals</b>	<b>71</b>	<b>10</b>	<b>76*</b>
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\*Totals include a minimum of twelve credit hours of major electives to be selected from: CJC 120, CJC 151, CJC 160, CJC 170, CJC 211, CJC 214, CJC 215, CJC 223, CJC 225, CJC 232, CJC 251, CJC 252, CJC 255, CCT 110, CCT 121, or CCT 231.

Students who have successfully completed a curriculum offering of Basic Law Enforcement Training within 10 years of their application to the Criminal Justice Technology Program will receive credit for CJC 121, 131, 132, 221, and 231.

## Criminal Justice Technology

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

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<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
			<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	3	0	3
		Major Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>

<b>Third Semester (Summer)</b>						
Allied Health and Public Service Education	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>
<b>Fifth Semester (Spring)</b>						
	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>
<b>Sixth Semester (Summer)</b>						
	CJC	222	Criminalistics	3	0	3
	HUM	115	Critical Thinking	3	0	3
				<b>6</b>	<b>0</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>						
	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>
<b>Eighth Semester (Spring)</b>						
	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>Program Totals</b>				<b>71</b>	<b>10</b>	<b>76</b>

*\* Totals include a minimum of twelve credit hours of major electives to be selected from: CJC 120, CJC 151, CJC 160, CJC 170, CJC 211, CJC 214, CJC 215, CJC 223, CJC 225, CJC 232, CJC 251, CJC 252, CJC 255, CCT 110, CCT 121, or CCT 231.*

*Students who have successfully completed a curriculum offering of Basic Law Enforcement Training within 10 years of their application to the Criminal Justice Technology Program will receive credit for CJC 121, 131, 132, 221, and 231.*

## Dental Assisting

This curriculum prepares individuals to assist the dentist in the delivery of dental treatment and to function as integral members of the dental team while performing chairside and related office and laboratory procedures.

Course work includes instruction in general studies, biomedical sciences, dental sciences, clinical sciences, and clinical practice. A combination of lecture, laboratory, and clinical experiences provide students with knowledge in infection/hazard control, radiography, dental materials, preventive dentistry, and clinical procedures.

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

### Specific Requirements

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

[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)

3. Acceptable report of medical examination by first day of class.
4. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
5. Students applying to the Dental Assisting program are encouraged to have successfully completed BIO 106, CIS 110 or CIS 111, ENG 102 or ENG 111 and COM 231, and PSY 150 prior to program admission due to the rigorous nature of the Dental Assisting curriculum.

## Dental Assisting Diploma (D45240)

Program Summary		Hours
General Education		9
<i>English/Communication</i>		3
<i>Natural Sciences/Mathematics</i>		3
<i>Social/Behavioral Sciences</i>		3
Core Courses		37
Other Courses		2
<b>Program Total</b>		<b>48</b>

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

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
First Semester (Fall)						
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
			14	13	0	20

		Second Semester (Spring)					
Allied Health and Public Service Education	DEN	102	Dental Materials	3	4	0	5
	DEN	104	Dental Health Education	2	2	0	3
	DEN	105	Practice Management	2	0	0	2
	DEN	106	Clinical Practice I	1	0	12	5
				8	6	12	15
		Third Semester (Summer)					
	CIS	111	Basic PC Literacy	1	2	0	2
	DEN	107	Clinical Practice II	1	0	12	5
	ENG	102	Applied Communication II	3	0	0	3
	PSY	150	General Psychology	3	0	0	3
				8	2	12	13
Program Totals				30	21	24	48

## Dental Hygiene

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

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

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

### Specific Requirements

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.  
[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)
3. Have high school credit with grade of at least "C" for four units of English, two units of mathematics (one of which must be algebra), one unit of chemistry, and one unit of biology. Science oriented college preparatory courses are recommended.
4. Acceptable report of medical examination by the first day of class.
5. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
6. Students applying to the Dental Hygiene program are encouraged to have successfully completed: BIO 168, BIO 169, BIO 175, CIS 110 or CIS 111, COM 231, ENG 111, HUM 115, and SOC 240 prior to program admission due to the rigorous nature of the Dental Hygiene curriculum.
7. The North Carolina Board of Dental Examiners may deny license to individuals convicted of a felony or any other crime involving moral turpitude.

Dental Hygiene  
Associate in Applied Science Degree (A45260)

Allied Health  
and Public  
Service  
Education

Program Summary	Hours
General Education	12
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	60
Other Courses	2
<b>Program Total</b>	<b>74</b>

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

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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	223	Dental Pharmacology	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	222	General and Oral Pathology	2	0	0	2
			<b>6</b>	<b>4</b>	<b>6</b>	<b>10</b>
<b>Fourth Semester (Fall)</b>						
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>
<b>Fifth Semester (Spring)</b>						
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	235	Dental Hygiene Concepts	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

Allied Health and Public Service Education

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

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

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

## Specific Requirements

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

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

Program Summary	Hours
General Education	15-16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3-4
<i>Social/Behavioral Sciences</i>	3
Core Courses	32
Other Courses	26-27
<b>Program Total</b>	<b>73-75</b>

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

				Weekly				Allied Health and Public Service Education
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.	
<b>First Semester (Fall)</b>								
ACA	115	First-Year Seminar		0	2	0	1	
EDU	119	Early Childhood Education		4	0	0	4	
EDU	144	Child Development I		3	0	0	3	
EDU	151	Creative Activities		3	0	0	3	
EDU	151A	Creative Activities Lab		0	2	0	1	
ENG	111	Expository Writing		3	0	0	3	
				<b>13</b>	<b>4</b>	<b>0</b>	<b>15</b>	
<b>Second Semester (Spring)</b>								
CIS	110	Introduction to Computers		2	2	0	3	
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	
				<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)		0 (3)	2 (0)	0 (0)	1 (3)	
EDU	251	Exploration Activities		3	0	0	3	
EDU	271	Educational Technology		2	2	0	3	
				<b>8</b>	<b>4(2)</b>	<b>0</b>	<b>10(9)</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	Language and 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 (3)	0 (0)	0 (0)	3 (3)	
				<b>13</b>	<b>0</b>	<b>10</b>	<b>14</b>	
<b>Fifth Semester (Spring)</b>								
COE	131EC	Work Experience III		0	0	10	1	
COE	135EC	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)	3 (0)	0 (0)	4 (3)	
				<b>10</b>	<b>2(5)</b>	<b>10</b>	<b>13(12)</b>	
<b>Sixth Semester (Summer)</b>								
EDU	259	Curriculum Planning		3	0	0	3	
PSY	150	General Psychology		3	0	0	3	
		Humanities Elective		3	0	0	3	
				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	
<b>Program Totals</b>				<b>65</b>	<b>10-15</b>	<b>30</b>	<b>73-75</b>	

Allied Health  
and Public  
Service  
Education

## 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 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 (C55220L1)

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
EDU	119	Early Childhood Education		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>
<b>Second Semester (Spring)</b>							
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>6</b>	<b>2</b>	<b>0</b>	<b>7</b>
<b>Program Totals</b>				<b>16</b>	<b>2</b>	<b>0</b>	<b>17</b>

## Infant/Toddler Care Certificate

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

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



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

Allied Health  
and Public  
Service  
Education

**Specific Requirements:**

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

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

Program Summary			Hours			
Major Courses (EDU prefix)			17			
			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>						
EDU	119	Introduction to Early Childhood Ed.	4	0	0	4
EDU	144	Child Development I	3	0	0	3
EDU	131	Child, Family and Community	3	0	0	3
			<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Second Semester (Spring)</b>						
EDU	153	Health, Safety and Nutrition	3	0	0	3
EDU	153A	Health, Safety and Nutrition Lab	0	2	0	1
EDU	234	Infant, Toddlers, and Twos	3	0	0	3
			<b>6</b>	<b>2</b>	<b>0</b>	<b>7</b>
<b>Program Totals</b>			<b>16</b>	<b>2</b>	<b>0</b>	<b>17</b>

**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.

Allied Health  
and Public  
Service  
Education

Specific Requirements

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

Early Childhood/Teacher Associate  
Associate in Applied Science Degree (A5522B)

Program Summary	Hours
General Education	22
<i>English/Communication</i>	9
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	4
<i>Social/Behavioral Sciences</i>	6
Core Courses	32
Concentration	12
Other Courses	10
<b>Program Total</b>	<b>76</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
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>
<b>Second Semester (Spring)</b>							
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>
<b>Third Semester (Summer)</b>							
BIO 143		Field Biology Minicourse		1	2	0	2
EDU 251		Exploration Activities		3	0	0	3
EDU 271		Educational Technology		2	2	0	3
		Humanities Elective		3	0	0	3
				<b>9</b>	<b>4</b>	<b>0</b>	<b>11</b>
<b>Fourth Semester (Fall)</b>							
BIO 226		Local Fall Flora		1	2	0	2
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		Language and Literacy Experiences		3	0	0	3
				<b>12</b>	<b>4</b>	<b>0</b>	<b>14</b>

**Fifth Semester (Spring)**

COE	121E	Coop Work Experience II	0	0	10	1
COM	231	Public Speaking	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>67</b>	<b>14</b>	<b>20</b>	<b>76</b>

Allied Health  
and Public  
Service  
Education

## Emergency Medical Science

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This curriculum is designed to prepare graduates to enter the work-force as paramedics. Additionally, the program can provide an Associate Degree for individuals desiring an opportunity for career enhancement.

The course of study provides the student an opportunity to acquire basic and advanced life support knowledge and skills by utilizing classroom instruction, practical laboratory sessions, hospital clinical experience, and field internships with emergency medical service agencies.

Students progressing through the program become eligible to apply for both state and national certification exams. Employment opportunities include ambulance services, fire and rescue agencies, air medical services, specialty areas of hospitals, industry, educational institutions, and government agencies.

### Specific Requirements

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

Emergency Medical Science

Associate in Applied Science Degree (A45340)

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

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
First Semester (Fall)							
ACA	115	First-Year Seminar		0	2	0	1
BIO	168	Anatomy and Physiology I		3	3	0	4
CIS	110	Introduction to Computers		2	2	0	3
		(or CIS 111 Basic PC Literacy)		(1	2	0	2)
EMS	110	EMT-Basic		5	6	0	7
EMS	115	Defense Tactics for EMS		1	3	0	2
		(or EMS 111 Prehospital Environment)		(2	2	0	3)
EMS	150	Emergency Vehicles and EMS Communication		1	3	0	2
				11-13	18-19	0	18-20
Second Semester (Spring)							
BIO	169	Anatomy and Physiology II		3	3	0	4
EMS	120	Intermediate Interventions		2	3	0	3
EMS	121	EMS Clinical Practicum I		0	0	6	2
EMS	130	Pharmacology I for EMS		1	3	0	2
EMS	131	Advanced Airway Management		1	2	0	2
ENG	111	Expository Writing		3	0	0	3
				10	11	6	16
Third Semester (Summer)							
EMS	210	Advanced Patient Assessment		1	3	0	2
EMS	220	Cardiology		2	6	0	4
EMS	221	Clinical Practicum II		0	0	9	3
				3	9	9	9
Fourth Semester (Fall)							
EMS	140	Rescue Scene Management		1	3	0	2
EMS	140A	Rescue Skills Lab		0	3	0	1
EMS	231	Clinical Practicum III		0	0	9	3
EMS	250	Advanced Medical Emergencies		2	3	0	3
EMS	260	Advanced Trauma Emergencies		1	3	0	2
ENG	114	Professional Research and Reporting		3	0	0	3
SOC	225	Social Diversity		3	0	0	3
				10	12	9	17

**Fifth Semester (Spring)**

EMS	230	Pharmacology II For EMS	1	3	0	2
EMS	240	Special Needs Patients	1	2	0	2
EMS	241	Clinical Practicum IV	0	0	9	3
EMS	270	Life Span Emergencies	2	2	0	3
EMS	285	EMS Capstone	1	3	0	2
PHI	240	Introduction to Ethics	3	0	0	3
			<b>8</b>	<b>10</b>	<b>9</b>	<b>15</b>
<b>Program Totals</b>			<b>42-44</b>	<b>60-61</b>	<b>33</b>	<b>75-77</b>

Allied Health  
and Public  
Service  
Education

## Emergency Medical Science Bridge Program

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

### **Specific Requirements**

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

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

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

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

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>						
BIO	168	Human Anatomy and Physiology I	3	3	0	4
CIS	110	Introduction to Computers	2	2	0	3
		(or CIS 111 Basic PC Literacy)	(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>10(9)</b>	<b>14</b>	<b>0</b>	<b>15(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>26(25)</b>	<b>25</b>	<b>0</b>	<b>35(34)*</b>

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

## Fire Protection Technology

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

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

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

Allied Health  
and Public  
Service  
Education

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

Program Summary	Hours
General Education	18
<i>English/Communication</i>	9
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	15
Other Courses	40
<b>Program Total</b>	<b>73</b>

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

				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
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>

		<b>Fifth Semester (Spring)</b>					
Allied Health and Public Service Education	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>	
		<b>Sixth Semester (Summer)</b>					
	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>	
		<b>Seventh Semester (Fall)</b>					
	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>
		<b>Eighth Semester (Spring)</b>					
	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>	
<b>Program Totals</b>				<b>69</b>	<b>8</b>	<b>73</b>	

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

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

		<b>Program Summary</b>			<b>Hours</b>	
		Major courses (FIP prefix)			15	
		Related general education courses			3	
		<b>Program Total</b>			<b>18</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>				
	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>
		<b>Second Semester (Spring)</b>				
	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>
		<b>Third Semester (Summer)</b>				
	FIP	240	Fire Service Supervision	3	0	3
				<b>3</b>	<b>0</b>	<b>3</b>
<b>Certificate Totals</b>				<b>18</b>	<b>0</b>	<b>18</b>



# 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.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 W. Bryn Mawr Ave Suite 670, Chicago, IL 60631-3415, (773)-714-8880, [www.naacls.org](http://www.naacls.org)

## Specific Requirements

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

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

Program Summary	Hours
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	55
Other Courses	1
<b>Program Total</b>	<b>74</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
Allied Health							
and Public	<b>First Semester (Fall)</b>						
	BIO 163	Basic Anatomy and Physiology		4	2	0	5
Service	CHM 130	General, Organic and Biochemistry		3	0	0	3
	CHM 130A	General, Organic and Biochemistry Lab		0	2	0	1
Education	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>
<b>Second Semester (Spring)</b>							
	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>	
<b>Third Semester (Summer)</b>							
	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>	
<b>Fourth Semester (Fall)</b>							
	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>	
<b>Fifth Semester (Spring)</b>							
	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

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

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

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

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

### Specific Requirements

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

[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)

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

Allied Health  
and Public  
Service  
Education

Medical Sonography  
Associate in Applied Science Degree (A45440)

Program Summary		Hours
General Education		15
<i>English/Communication</i>		6
<i>Humanities/Fine Arts</i>		3
<i>Natural Sciences/Mathematics</i>		3
<i>Social/Behavioral Sciences</i>		3
Core Courses		54
Other Courses		7
<b>Program Total</b>		<b>76</b>

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

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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	242	Obstetrical Sonography II	2	0	0	2
SON	250	Vascular Sonography	1	3	0	2
			<b>8</b>	<b>5</b>	<b>24</b>	<b>18</b>
<b>Fifth Semester (Spring)</b>						
SON	221	SON Clinical Ed IV	0	0	24	8
SON	225	Case Studies	0	3	0	1
SON	289	Sonographic Topics	2	0	0	2
		Humanities Elective	3	0	0	3
		Social Science Elective	3	0	0	3
			<b>8</b>	<b>3</b>	<b>24</b>	<b>17</b>
<b>Program Totals</b>			<b>39</b>	<b>26</b>	<b>81</b>	<b>76</b>

## Phlebotomy

This curriculum prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis. Course work includes proper specimen collection and handling, communication skills and maintaining patient data.

Graduates may qualify for employment in hospitals, clinics, physician's offices, and other health care settings, and may be eligible to test for national certification as phlebotomy technicians.

This program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 W. Bryn Mawr Ave Suite 670, Chicago, IL 60631-3415, (773)-714-8880 [www.naacls.org](http://www.naacls.org)

Allied Health  
and Public  
Service  
Education

### Specific Requirements

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

## Phlebotomy Certificate (C45600)

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>Program offered Fall or Spring</b>						
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.

### Specific Requirements

Allied Health  
and Public  
Service  
Education

1. General college admission requirements.
2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.  
[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)
3. Final admission to the Practical Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
4. Satisfactory completion of required immunizations.
5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
6. The North Carolina Board of Nursing requires criminal background checks on all applicants.
7. 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.

Required Course for Practical Nursing	Course Substitution
BIO 163	BIO 168 and BIO 169
ENG 102	ENG 111 and ENG 114 or ENG 111 and COM 231
PSY 110	PSY 150 and PSY 241

To be eligible for admission to the Fall 2007 Associate Degree Nursing and Practical Nursing programs, applicants will be required to hold a documented current unrestricted credential as a Nursing Assistant I (NAI) from the North Carolina Division of Facility Services by June 15, 2007.

### Practical Nursing Diploma (D45660)

Program Summary	Hours
General Education	11
<i>English/Communication</i>	3
<i>Natural Sciences/Mathematics</i>	5
<i>Social/Behavioral Sciences</i>	3
Core Courses	33
Other Courses	3
<b>Program Total</b>	<b>47</b>

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

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

Allied Health  
and Public  
Service  
Education

## Radiography

The Radiography curriculum prepares the graduate to be a radiographer, a skilled health care professional who uses radiation to produce images of the human body.

Course work includes clinical rotations to area health care facilities, radiographic exposure, image processing, radiographic procedures, physics, pathology, patient care and management, radiation protection, quality assurance, anatomy and physiology, and radiobiology.

Graduates of accredited programs are eligible to apply to take the American Registry of Radiologic Technologists national examination for certification and registration as medical radiographers. Graduates may be employed in hospitals, clinics, physicians' offices, medical laboratories, government agencies, and industry.

### Specific Requirements

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

[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)

3. High school biology and one unit of high school algebra.
4. Keyboarding skills are highly recommended.
5. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes. Completed medical and immunization records must be submitted to the department chair before classes begin.
6. Either first dose of Hepatitis B vaccine or completion of series.

- 7. Documentation of current CPR certification for the Professional Rescuer or Healthcare Provider which must be renewed annually.
- 8. Completion of a 12-hour observation in the Radiology department at one of the clinical affiliates. Details are available in the Admissions Office.
- 9. Criminal background checks may be required prior to admission to clinical sites.

Notice

Candidates for certification from the American Registry of Radiologic Technologists (ARRT) must comply with the “Rules of Ethics” contained in the ARRT Standards of Ethics. Any conviction of a crime, including a felony, a gross misdemeanor, or a misdemeanor with the sole exception of speeding and parking violations must be investigated by the ARRT in order to determine eligibility for the certification examination. Additional information may be obtained from the department chairperson or on the ARRT website at [www.arrt.org](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, Weaverville and Marion. Radiography students may be expected to complete a four to eight week rotation during the late afternoon-early evening hours (3:30 - 10 p.m.) at some time during their clinic education.

Radiography  
Associate in Applied Science Degree (A45700)

Program Summary		Hours
General Education		17
<i>English/Communication</i>		6
<i>Humanities/Fine Arts</i>		3
<i>Natural Sciences/Mathematics</i>		5
<i>Social/Behavioral Sciences</i>		3
Core Courses		53
Other Courses		5
<b>Program Total</b>		<b>75</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
First Semester (Fall)							
BIO	163	Basic Anatomy and Physiology		4	2	0	5
ENG	111	Expository Writing		3	0	0	3
RAD	110	Radiography Introduction 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
				12	8	12	19



**Second Semester (Spring)**

CIS	110	Introduction to Computers	2	2	0	3
COM	231	Public Speaking	3	0	0	3
RAD	112	RAD Procedures II	3	3	0	4
RAD	121	Radiographic Imaging I	2	3	0	3
RAD	161	RAD Clinical Education II	0	0	15	5
			<b>10</b>	<b>8</b>	<b>15</b>	<b>18</b>

Allied Health  
and Public  
Service  
Education

**Third Semester (Summer)**

RAD	122	Radiographic Imaging II	1	3	0	2
RAD	131	Radiographic Physics I	1	3	0	2
RAD	171	RAD Clinical Education III	0	0	12	4
			<b>2</b>	<b>6</b>	<b>12</b>	<b>8</b>

**Fourth Semester (Fall)**

RAD	211	RAD Procedures III	2	3	0	3
RAD	231	Radiographic Physics II	1	3	0	2
RAD	241	Radiobiology/Protection	2	0	0	2
RAD	251	RAD Clinical Education IV	0	0	21	7
		Social Science Elective	3	0	0	3
			<b>8</b>	<b>6</b>	<b>21</b>	<b>17</b>

**Fifth Semester (Spring)**

PHI	240	Introduction to Ethics	3	0	0	3
RAD	245	RAD Quality Management	1	3	0	2
RAD	261	RAD Clinical Education V	0	0	21	7
RAD	271	Radiography Capstone	0	3	0	1
			<b>4</b>	<b>6</b>	<b>21</b>	<b>13</b>

<b>Program Totals</b>			<b>36</b>	<b>34</b>	<b>81</b>	<b>75</b>
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## **Human Services Technology/Social Services**

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

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

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

**Specific Requirements**

1. General college admission requirements.
2. Acceptable reports of medical examinations and immunizations by the end of the first semester of enrollment in the Social Services program.
3. Three character/employment references by the end of the first semester of enrollment in this program.

Allied Health  
and Public  
Service  
Education

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

Program Summary	Hours
General Education	15
English/Communication	6
Humanities/Fine Arts	3
Natural Sciences/Mathematics	3
Social/Behavioral Sciences	3
Core Courses	25
Concentration	15
Other Courses	17
Program Total	72

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

			Weekly			
			Class	Lab	Clinic	Credit
			Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	0	1
CIS	110	Introduction to Computers	2	2	0	3
ENG	111	Expository Writing	3	0	0	3
HSE	110	Introduction to Human Services	2	2	0	3
PSY	150	General Psychology	3	0	0	3
SWK	113	Working with Diversity	3	0	0	3
			<b>13</b>	<b>6</b>	<b>0</b>	<b>16</b>
<b>Second Semester (Spring)</b>						
HSE	123	Interview Techniques	2	2	0	3
HSE	220	Case Management	2	2	0	3
MAT	115	Mathematical Models	2	2	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>6</b>	<b>0</b>	<b>15</b>
<b>Third Semester (Summer)</b>						
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>						
COE	111SS	Co-op Work Experience I	0	0	10	1
COE	115SS	Work Experience Seminar I	1	0	0	1
HSE	112	Group Process I	1	2	0	2
HSE	125	Counseling	2	2	0	3
SOC	213	Sociology of the Family	3	0	0	3
SWK	214	Social Work Law	3	0	0	3
			<b>10</b>	<b>4</b>	<b>10</b>	<b>13</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

### (A4538D)

Allied Health  
and Public  
Service  
Education

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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
PSY	150	General Psychology		3	0	0	3
SWK	131	Working with Diversity		3	0	0	3
				<b>10</b>	<b>6</b>	<b>0</b>	<b>13</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	112	Group Process I		1	2	0	2
HSE	123	Interviewing Techniques		2	2	0	3
SOC	213	Sociology of the Family		3	0	0	3
				<b>6</b>	<b>4</b>	<b>0</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>							
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>
<b>Sixth Semester (Summer)</b>							
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>
<b>Seventh Semester (Fall)</b>							
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>
<b>Eighth Semester (Spring)</b>							
*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>
<b>Ninth Semester (Summer)</b>							
*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>
<b>Program Totals</b>				<b>61</b>	<b>18</b>	<b>20</b>	<b>72</b>

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

# Surgical Technology

Allied Health and Public Service Education      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 Requirements

- 1. General college admission requirements.
- 2. This program has a competitive selection process. See Selection Criteria and Procedures for Allied Health Programs on the college admissions office web page for full details.  
[http://www.abtech.edu/Student\\_Services/admissions/allied\\_health.asp](http://www.abtech.edu/Student_Services/admissions/allied_health.asp)
- 3. Final admission to the Surgical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant’s ability to provide safe care to the public.
- 4. Satisfactory completion of required immunizations.
- 5. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.
- 6. Clinical agencies and/or credentialing bodies may require criminal background checks prior to admission to clinical sites or issuance of credentials.
- 7. Students applying to the Surgical Technology program are encouraged to have successfully completed: ACA 115, BIO 163 (or BIO 168 and BIO 169), BIO 175, CIS 110, and ENG 111 prior to program admission due to the rigorous nature of the Surgical Technology curriculum.

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

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	51
Other Courses	1
<b>Program Total</b>	<b>67</b>

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

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	0	1
BIO	163	Basic Anatomy & Physiology	4	2	0	5
ENG	111	Expository Writing	3	0	0	3
SUR	110	Introduction to Surgical Technology	3	0	0	3
SUR	111	Periop Patient Care	5	6	0	7
			<b>15</b>	<b>10</b>	<b>0</b>	<b>19</b>
<b>Second Semester (Spring)</b>						
BIO	175	General Microbiology	2	2	0	3
SUR	122	Surgical Procedures I	5	3	0	6
SUR	123	Surgical Clinical I	0	0	21	7
			<b>7</b>	<b>5</b>	<b>21</b>	<b>16</b>
<b>Third Semester (Summer)</b>						
CIS	110	Introduction to Computers	2	2	0	3
SUR	134	Surgical Procedures II	5	0	0	5
SUR	135	Surgical Clinical II	0	0	12	4
SUR	137	Professional Success Preparation	1	0	0	1
			<b>8</b>	<b>2</b>	<b>12</b>	<b>13</b>
<b>Fourth Semester (Fall)</b>						
BUS	135	Principles of Supervision	3	0	0	3
COM	120	Interpersonal Communication (or ENG 114)	3	0	0	3
PSY	150	General Psychology	3	0	0	3
SUR	211	Advanced Theoretical Concepts	2	0	0	2
			<b>9</b>	<b>0</b>	<b>6</b>	<b>11</b>
<b>Fifth Semester (Spring)</b>						
HUM	115	Critical Thinking	3	0	0	3
PHI	240	Introduction to Ethics	3	0	0	3
SOC	215	Group Processes	3	0	0	3
SUR	210	Advanced Clinical Practice	0	0	6	2
			<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>
<b>Program Totals</b>			<b>47</b>	<b>17</b>	<b>39</b>	<b>67</b>

Allied Health  
and Public  
Service  
Education

Surgical Technology Diploma (D45740)

Program Summary	Hours
General Education	6
English/Communication	3
Natural Sciences/Mathematics	3
Core Courses	41
Other Courses	1
<b>Program Total</b>	<b>48</b>

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

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

**Surgical Technology Bridge Program**

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

**Specific Requirements**

1. General college admission requirements.
  - a. Complete application for admission
  - b. Successfully complete college placement test.
  - c. High school transcript or GED scores on file with admissions office.
  - d. Official transcript of any prior college credit on file with admissions office.
  - e. Diploma or Certificate in Surgical Technology from a CAAHEP accredited program.

2. Current Basic Cardiac Life Support for the health care provider.
3. Current Certification in Surgical Technology (CST) through the Liaison Council on Certification for Surgical Technologist (LCC-ST).
4. Two letters of recommendation from a previous or current director, supervisor, operation room educator, or specialty service line team leader.
5. A letter documenting 1,500 hours or more work experience signed by an operating room director or supervisor that validates the work experience.
6. Documentation of at least 125 independently scrubbed surgical procedures within both core and specialty surgical service lines. This log may be obtained from the surgical technology department chairperson and must be signed by an operating room director or supervisor.

Allied Health  
and Public  
Service  
Education

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

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

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

\*Beginning fall 2007, students may apply to be admitted into the A.A.S. bridge program. Related and general education courses may be taken beginning fall 2007. It should be noted that SUR 210 and SUR 211 courses will NOT be offered until fall 2008.

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

<b>Program Summary</b>	<b>Hours</b>
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	51
<b>Program Total</b>	<b>66</b>

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

Allied Health  
and Public  
Service  
Education

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

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

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

## Veterinary Medical Technology

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 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.



# Veterinary Medical Technology

## Associate in Applied Science Degree (A45780)

Allied Health  
and Public  
Service  
Education

Program Summary		Hours
General Education		15
<i>English/Communication</i>		6
<i>Humanities/Fine Arts</i>		3
<i>Natural Sciences/Mathematics</i>		3
<i>Social/Behavioral Sciences</i>		3
Core Courses		55
Other Courses		4
<b>Program Total</b>		<b>74</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
MAT	115	Mathematical Models		2	2	0	3
		(or MAT 140 Survey of Mathematics)		3	0	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 Medical Tech		1	0	0	1
VET	120	Veterinary Anatomy and Physiology		3	3	0	4
				<b>11(12)</b>	<b>9(7)</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 Diseases 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 & 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>
<b>Fifth Semester (Spring)</b>							
VET	212	Veterinary Laboratory Techniques III		2	3	0	3
VET	214	Veterinary Clinical Practices III		1	9	0	4
VET	217	Large Animal Clinical Practices		2	3	0	3
VET	237	Animal Nutrition		3	0	0	3
		Social Science Elective		3	0	0	3
				<b>11</b>	<b>17</b>	<b>0</b>	<b>16</b>
<b>Sixth Semester (Summer)</b>							
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(53)</b>	<b>56(54)</b>	<b>20</b>	<b>74</b>



# Business and Hospitality Education

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

## **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**

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

*All degree programs in the Division of Business and Hospitality Education are five to six 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**

Cosmetology  
 Medical Office Administration  
 Medical Transcription  
 Office Systems Technology  
 Therapeutic Massage

**Certificates Awarded**

Accounting - Level I and Level II  
 Baking and Pastry Arts - Cake Designs  
 Baking and Pastry Arts - Restaurant Desserts  
 Business Administration - Entrepreneurship  
 Computer Information Technology - Database Management  
 Computer Information Technology - GIS Certificate  
 Computer Information Technology - Microcomputer Applications  
 Computer Information Technology - PC Installation and Maintenance  
 Digital Media Technology - Digital Video  
 Digital Media Technology - Interactive Multimedia  
 Hotel Restaurant Management - Bed and Breakfast/Inn Management  
 Hotel Restaurant Management - Hospitality Management  
 Marketing and Retailing - Retail Marketing  
 Medical Office Administration - Medical Coding  
 Networking Technology - Basic Network Administration Certificate  
 Networking Technology - CCNA Preparation Certificate  
 Networking Technology - CCNP Preparation Certificate  
 Networking Technology - RHCT Preparation Certificate  
 Office Systems Technology - Word Processing and Desktop Publishing  
 Real Estate  
 Real Estate Appraisal  
 Web Technologies - Web Designer  
 Web Technologies - Web Programming

Accounting (A25100)

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

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

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

Business and  
Hospitality  
Education

Accounting  
Associate in Applied Science Degree (A25100)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	24
Other Courses	35
<b>Program Total</b>	<b>74</b>

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

			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
CTS	130	Spreadsheet	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>

Business and Hospitality	<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
Education			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 116, BUS 151, BUS 230, BUS 240, BUS 260, BUS 270.

## Accounting

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

				<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
ENG	111	Expository Writing		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
MAT	115	Mathematical Models		2	2	3
				<b>7</b>	<b>6</b>	<b>10</b>
<b>Third Semester (Summer)</b>						
ACC	240	Government and				
		Not-for-Profit Accounting		3	0	3
BUS	137	Principles of Management		3	0	3
		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>

**Fifth Semester (Spring)**

ACC	130	Business Income Taxes	2	2	3
CTS	130	Spreadsheet	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
		Related Elective*	3	0	3
			<b>10</b>	<b>4</b>	<b>12</b>

Business and

Hospitality

Education

**Sixth Semester (Summer)**

ACC	150	Accounting Software Applications	1	2	2
BUS	225	Business Finance	2	2	3
			<b>3</b>	<b>4</b>	<b>5</b>

**Seventh Semester (Fall)**

ACC	140	Payroll Accounting	1	2	2
ACC	220	Intermediate Accounting I	3	2	4
BUS	147	Business Insurance	3	0	3
			<b>7</b>	<b>4</b>	<b>9</b>

**Eighth Semester (Spring)**

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>
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*\*Related Electives: ACC 131, BUS 116, BUS 151, BUS 230, BUS 240, BUS 260, BUS 270.*

## Accounting – Certificates

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

### Accounting Level I – Certificate (C25100L1)

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

Accounting Level II – Certificate (C25100L2)

	Weekly		
	Class Hrs.	Lab Hrs.	Credit Hrs.
Business and Hospitality  Education	<b>First Semester (Fall)</b>		
	ACC 129	Individual Income Taxes	2 2 3
	ACC 220	Intermediate Accounting I	3 2 4
			<b>5 4 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 0 6</b>
	<b>Program Totals</b>		
			<b>11 4 13</b>

Baking and Pastry Arts (A55130)

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

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

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

Specific 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 (A55130)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	20
Other Courses	40
<b>Program Total</b>	<b>75</b>

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



			Weekly			
			Class Hrs.	Lab Hrs.	Work Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>						
ACA	115	First-Year Seminar	0	2	0	1
BPA	165	Hot and Cold Desserts (or CUL 285 Competition Fundamentals)	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
CUL	160A	Baking Lab I	0	3	0	1
MAT	115	Mathematical Models	2	2	0	3
			<b>9</b>	<b>21</b>	<b>0</b>	<b>19</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	112	Co-op Work Experience	0	0	20	2
			<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
<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>63</b>	<b>20</b>	<b>75</b>

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Baking and Pastry Arts - Cake Designs\* (C55130L1)

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.

- \* Offered day only.
- \*\* Applicants must obtain BPA advisor approval and complete a minimum of two years industry experience in a bake/pastry shop or kitchen.

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>					
CUL	110	Sanitation and Safety	2	0	2
CUL	160	Baking I	1	4	3
			<b>3</b>	<b>4</b>	<b>5</b>
<b>Second Semester (Spring)</b>					
BPA	130	European Cakes and Tortes	1	4	3
BPA	210	Cake Design and Decorating	1	4	3
BPA	220	Confection Artistry	1	6	4
BPA	230	Chocolate Artistry	1	4	3
			<b>4</b>	<b>18</b>	<b>13</b>
<b>Certificate Totals</b>			<b>7</b>	<b>22</b>	<b>18</b>

Baking and Pastry Arts - Restaurant Desserts\* (C55130L2)

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.
- \*\* Applicants must obtain BPA advisor approval and complete a minimum of two years industry experience in a bake/pastry shop or kitchen.

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>

**Second Semester (Spring)**

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>

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**Business Administration**

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

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

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

**Business Administration  
Associate in Applied Science (A25120)**

<b>Program Summary</b>	<b>Hours</b>
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	19
Other Courses	42
<b>Program Total</b>	<b>76</b>

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

			<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	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 Managerial Accounting	3	2	4
BUS	137	Principles of Management	3	0	3
ENG	111	Expository Writing	3	0	3
MKT	120	Principles of Marketing	3	0	3
OST	136	Word Processing	1	2	2
			<b>13</b>	<b>4</b>	<b>15</b>

		<b>Third Semester (Summer)</b>					
Business and Hospitality	BUS	115	Business Law I	3	0	3	
	BUS	153	Human Resource Management	3	0	3	
	COM	231	Public Speaking	3	0	3	
	ECO	251	Principles of Microeconomics	3	0	3	
			Humanities Elective	3	0	3	
				<b>15</b>	<b>0</b>	<b>15</b>	
		<b>Fourth Semester (Fall)</b>					
Education	BUS	135	Principles of Supervision	3	0	3	
	BUS	139	Entrepreneurship I (or BUS 230 Small Business Management)	3	0	3	
	BUS	230	Small Business Management				
	BUS	225	Business Finance	2	2	3	
	CTS	130	Spreadsheet	2	2	3	
	ECO	252	Principles of Macroeconomics	3	0	3	
			Related Elective*	3	0	3	
				<b>16</b>	<b>4</b>	<b>18</b>	
		<b>Fifth Semester (Spring)</b>					
	BUS	147	Business Insurance	3	0	3	
	BUS	239	Business Applications Seminar	1	2	2	
			Related Elective*	3	0	3	
			Related Elective*	3	0	3	
			Related Elective*	3	0	3	
				<b>13</b>	<b>2</b>	<b>14</b>	
		<b>Program Totals</b>			<b>67</b>	<b>18</b>	<b>76</b>

*\*Related Electives: BUS 116, BUS 151, BUS 240, BUS 245, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 224.*

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

			<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 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 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>					
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
CTS	130	Spreadsheet	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>					
COM	231	Public Speaking	3	0	3
		Related Elective*	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>					
BUS	139	Entrepreneurship I (or BUS 230 Small Business Management)	3	0	3
BUS	147	Business Insurance	3	0	3
		Related Elective*	3	0	3
		Related Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>
<b>Eighth Semester (Spring)</b>					
BUS	225	Business Finance	2	2	3
BUS	239	Business Applications Seminar I	1	2	2
		Related Elective*	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>
<b>Program Totals</b>			<b>67</b>	<b>18</b>	<b>76</b>

*\*Related Electives: BUS 116, BUS 151, BUS 240, BUS 245, BUS 260, BUS 270, MKT 121, MKT 123, MKT 220, MKT 224.*

## Business Administration

### Entrepreneurship Certificate (C25120L1)

The Entrepreneurship Certificate is designed to provide students with basic knowledge and skills necessary in establishing a new business venture. Course work includes financial accounting and understanding of the operation of a business in the free enterprise system, principles of marketing, as well as principles of entrepreneurship and development of a business plan. Students will develop a detailed business plan that may be used for the establishment of a business venture

Successful applicants for this certificate must have earned a high school diploma or GED.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
ACC	120	Principles of Financial Accounting	3	2	4
BUS	110	Introduction to Business	3	0	3
BUS	139	Entrepreneurship I	3	0	3
BUS	245	Entrepreneurship II	3	0	3
MKT	120	Principles of Marketing	3	0	3
<b>Certificate Totals</b>			<b>15</b>	<b>2</b>	<b>16</b>

Business and  
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# Computer Information Technology

Business and  
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Education

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

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

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

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

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	36
Other Courses	22
<b>Program Total</b>	<b>73</b>

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

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<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 (or MAT 171 PreCalculus Algebra)	2	2	3
NOS	110	Operating System Concepts	2	3	3
			<b>12</b>	<b>9</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
CIS	115	Intro to Programming and Logic	2	3	3
DBA	110	Database Concepts	2	3	3
NET	110	Networking Concepts	2	2	3
WEB	115	Web Markup and Scripting	2	2	3
WEB	140	Web Development Tools	2	2	3
			<b>10</b>	<b>12</b>	<b>15</b>

**Third Semester (Summer)**

COM	231	Public Speaking	3	0	3
NOS	130	Windows Single User	2	2	3
		Humanities Elective	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>

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**Fourth Semester (Fall)**

CTS	120	Hardware/Software Support	2	3	3
CTS	285	Systems Analysis and Design	3	0	3
GIS	111	Introduction to GIS	2	2	3
NOS	230	Windows Admin I	2	2	3
		Major Elective 1*	2	2	3
			<b>11</b>	<b>9</b>	<b>15</b>

**Fifth Semester (Spring)**

CTS	288	Professional Practices in IT	2	2	3
CTS	289	System Support Project	1	4	3
SEC	110	Security Concepts	3	0	3
		Major Elective 2*	2	2	3
		Major Elective 3*	2	2	3
			<b>10</b>	<b>10</b>	<b>15</b>

<b>Program Totals</b>			<b>54</b>	<b>42</b>	<b>73</b>
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*\*Students have the ability to select an area of interest through the selection of their Major Electives. The following are the five interest areas and the associated classes. Students should meet with their advisor to help determine the courses that best meet their needs.*

**\*Option I - Database:**

Elective 1	DBA	120	Database Programming I
Elective 2	WEB	182	PHP Programming
Elective 3	DBA	210	Database Administration or Co-op Work Experience

**\*Option II - Tech Support:**

Elective 1	CTS	155	Tech Support Functions
Elective 2	CTS	217	Computer Training and Support
Elective 3	CTS	220	Adv. Hardware/Software Support or Co-op Work Experience

**\*Option III - Design:**

Elective 1	DME	110	Introduction to Digital Media
Elective 2	DME	120	Intro to Multimedia Applications
Elective 3	CTS	125	Presentation Graphics or Co-op Work Experience

**\*Option IV - Business Support:**

Elective 1	CTS	155	Tech Support Functions
Elective 2	CTS	135	Integrated Software Intro
Elective 3	CTS	125	Presentation Graphics or Co-op Work Experience

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

Elective 1	DBA	120	Database Programming I
Elective 2	GIS	121	Georeferencing and Mapping
Elective 3	GIS	215	GIS Data Models or Co-op Work Experience

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

*(Begins in even years only)*

				Weekly		
				Class Hrs.	Lab Hrs.	Credit 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 (or MAT 171 PreCalculus Algebra)		2	2	3
				<b>7</b>	<b>6</b>	<b>10</b>
<b>Second Semester (Spring)</b>						
BUS	110	Introduction to Business		3	0	3
CIS	115	Intro to Programming and Logic		2	3	3
WEB	115	Web Markup and Scripting		2	2	3
				<b>7</b>	<b>5</b>	<b>9</b>
<b>Third Semester (Summer)</b>						
NOS	110	Operating Systems Concepts		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>Fourth Semester (Fall)</b>						
DBA	110	Database Concepts		2	3	3
NOS	130	Windows Single User		2	2	3
WEB	140	Web Development Tools		2	2	3
				<b>6</b>	<b>7</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>						
COM	231	Public Speaking		3	0	3
NET	110	Networking Concepts		2	2	3
GIS	111	Introduction to GIS		2	2	3
				<b>7</b>	<b>4</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>						
CTS	120	Hardware/Software Support		2	3	3
SEC	110	Security Concepts		3	0	3
				<b>5</b>	<b>3</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>						
CTS	285	Systems Analysis and Design		3	0	3
NOS	230	Windows Admin I		2	2	3
		Major Elective 1*		2	2	3
				<b>7</b>	<b>4</b>	<b>9</b>



**Eighth Semester (Spring)**

CTS	288	Professional Practices in IT	2	2	3
		Major Elective 2*	2	2	3
		Major Elective 3*	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

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**Ninth Semester (Summer)**

CTS	289	System Support Project	1	4	3
			<b>1</b>	<b>4</b>	<b>3</b>

**Program Totals****54 42 73**

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

**\*Option I - Database:**

Elective 1	DBA	120	Database Programming I
Elective 2	WEB	182	PHP Programming
Elective 3	DBA	210	Database Administration or Co-op Work Experience

**\*Option II - Tech Support:**

Elective 1	CTS	155	Tech Support Functions
Elective 2	CTS	217	Computer Training and Support
Elective 3	CTS	220	Adv. Hardware/Software Support or Co-op Work Experience

**\*Option III - Design:**

Elective 1	DME	110	Introduction to Digital Media
Elective 2	DME	120	Intro to Multimedia Applications
Elective 3	CTS	125	Presentation Graphics or Co-op Work Experience

**\*Option IV - Business Support:**

Elective 1	CTS	155	Tech Support Functions
Elective 2	CTS	135	Integrated Software Intro
Elective 3	CTS	125	Presentation Graphics or Co-op Work Experience

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

Elective 1	DBA	120	Database Programming I
Elective 2	GIS	121	Georeferencing and Mapping
Elective 3	GIS	215	GIS Data Models or Co-op Work Experience

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**Computer Information Technology**  
**Database Management (C25260L1)**

Students will learn how to design, manipulate and update databases using a variety of database programs. Upon completion of the certificate students should be able to write programs which create, update and produce databases, tables and reports representative of industry standards.

This certificate is designed for students who have experience with computers and want to improve database skills.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
DBA	110	Database Concepts	2	3	3
DBA	120	Database Programming I	2	2	3
DBA	210	Database Administration	2	2	3
WEB	182	PHP Programming	2	2	3
<b>Certificate Totals</b>			<b>8</b>	<b>9</b>	<b>12</b>

**Computer Information Technology**  
**GIS Certificate (C25260L4)**

The Geographic Information Systems Program (GIS) certificate provides a curriculum based on a solid foundation in GIS concepts. Students enrolled in GIS Certificate courses will learn the different forms of spatial data and their essential properties; principles, and methods for collecting spatial data; principles of map design and effective cartographic communication; ways spatial data can be used to investigate complex problems; and customization of GIS software to meet individual needs.

Course work in basic programming is also included to provide students with a foundation in language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. 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	115	Intro to Programming and Logic	2	3	3
GIS	111	Introduction to GIS	2	2	3
GIS	121	Georeferencing and Mapping	2	2	3
GIS	215	GIS Data Models	2	2	3
<b>Certificate Totals</b>			<b>8</b>	<b>9</b>	<b>12</b>

# **Computer Information Technology** **Microcomputer Applications (C25260L2)**

Participants in this certificate program learn about computer hardware as well as a variety of the most popular software application packages used in business. Applicants must have earned a high school diploma or GED to apply for this certificate program.

This certificate is designed for students who have little or no computer experience who want to improve their skills for home or the workplace.

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			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>Required Courses:</b>					
CIS	110	Introduction to Computers	2	2	3
CTS	135	Integrated Software	2	4	4
DBA	110	Database Concepts	2	3	3
NOS	110	Operating Systems Concepts	2	3	3
<b>Certificate Totals</b>			<b>8</b>	<b>12</b>	<b>13</b>

# **Computer Information Technology** **PC Installation and Maintenance Certificate (C25260L3)**

Students learn how to install, optimize, upgrade, and troubleshoot personal computer hardware and software. They gain both theoretical and hands-on experience using a variety of current hardware and software technologies. Topics such as testing electrical components, using diagnostics utilities, and user PC support interactions will be covered.

Preparation for the A+ Certification examination is an integral objective of this certificate program. Success as a PC technician requires essential knowledge and skills that may be tested by the internationally recognized A+ Certification exam.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CIS	110	Introduction to Computers	2	2	3
CTS	120	Hardware/Software Support	2	3	3
CTS	220	Advanced Hardware/Software Support	2	3	3
NOS	110	Operating System Concepts	2	3	3
<b>Certificate Totals</b>			<b>8</b>	<b>11</b>	<b>12</b>

# Cosmetology\*

Business and  
Hospitality  
Education

The Cosmetology curriculum is designed to provide competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the cosmetology industry. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional imaging, hair design, chemical processes, skin care, nail care, multi-cultural practices, business/computer principles, product knowledge, and other selected topics.

Graduates should qualify to sit for the State Board of Cosmetic Arts examination. Upon successfully passing the State Board exam, graduates will be issued a license. Employment is available in beauty salons and related businesses.

*\*Program will begin Fall 2007 pending State Board of Community Colleges approval.*

## 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.

## Cosmetology Associate in Applied Science (A55140)

Program Summary		Hours
General Education		15
<i>English/Communication</i>		6
<i>Humanities/Fine Arts</i>		3
<i>Natural Sciences/Mathematics</i>		3
<i>Social/Behavioral Sciences</i>		3
Core Courses		34
Other Courses		17
<b>Program Total</b>		<b>66</b>

*Courses requiring a grade of "C" or better: BUS, CIS, and COS*

				Weekly		
				Class	Lab	Credit
				Hrs.	Hrs.	Hrs.
First Semester (Fall)						
ACA	115	First-Year Seminar		0	2	1
CIS	113	Computer Basics		0	2	1
COS	111	Cosmetology Concepts I		4	0	4
COS	112	Salon I		0	24	8
				4	28	14

**Second Semester (Spring)**

COS	113	Cosmetology Concepts II	4	0	4
COS	114	Salon II	0	24	8
PSY	118	Interpersonal Psychology	3	0	3
			<b>7</b>	<b>24</b>	<b>15</b>

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**Third Semester (Summer)**

COM	120	Interpersonal Communications	3	0	3
COS	115	Cosmetology Concepts III	4	0	4
COS	116	Salon III	0	12	4
			<b>7</b>	<b>12</b>	<b>11</b>

**Fourth Semester (Fall)**

COS	117	Cosmetology Concepts IV	2	0	2
COS	118	Salon IV	0	21	7
COS	260	Design Applications	1	3	2
ENG	110	Freshman Composition	3	0	3
			<b>6</b>	<b>24</b>	<b>14</b>

**Fifth Semester (Spring)**

BUS	151	People Skills	3	0	3
BUS	230	Small Business Management	3	0	3
MAT	115	Mathematical Models	2	2	3
		Humanities Elective	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>

**Program Totals****35 90 66****Cosmetology - Diploma (D55140)****Program Summary****Hours**

General Education	6
<i>English/Communication</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	34
Other Courses	8
<b>Program Total</b>	<b>48</b>

*Courses requiring a grade of "C" or better: CIS and COS*

Weekly		
Class	Lab	Credit
Hrs.	Hrs.	Hrs.

**First Semester (Fall)**

COS	111	Cosmetology Concepts I	4	0	4
COS	112	Salon I	0	24	8
			<b>4</b>	<b>24</b>	<b>12</b>

**Second Semester (Spring)**

COS	113	Cosmetology Concepts II	4	0	4
COS	114	Salon II	0	24	8
			<b>4</b>	<b>24</b>	<b>12</b>

**Third Semester (Summer)**

COS	115	Cosmetology Concepts III	4	0	4
COS	116	Salon III	0	12	4
			<b>4</b>	<b>12</b>	<b>8</b>

**Fourth Semester (Fall)**

COS	117	Cosmetology Concepts IV	2	0	2
COS	118	Salon IV	0	21	7
			<b>2</b>	<b>21</b>	<b>9</b>

		Fifth Semester (Spring)				
Business and Hospitality Education	CIS	113	Computer Basics	0	2	1
	COM	120	Interpersonal Communications	3	0	3
	PSY	118	Interpersonal Psychology	3	0	3
				6	2	7
Program Totals				20	83	48

Culinary Technology

The Culinary Technology curriculum provides specific training required to prepare students to assume positions as trained culinary professionals in a variety of food service settings including full service restaurants, hotels, resorts, clubs, catering operations, contract food service, and health care facilities.

Course offerings emphasizing practical application, a strong theoretical knowledge base, and professionalism and provides the critical competencies to successfully meet industry demands. Courses also include sanitation, food/beverage service and control, baking, garde-manger, American/international cuisines, food production, and hospitality supervision.

Graduates should qualify for entry-level positions, such as line cook, station chef, and assistant pastry chef. American Culinary Federation certification 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 (A55200)

<b>Program Summary</b>	<b>Hours</b>
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	17
Other Courses	44
<b>Program Total</b>	<b>76</b>

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

				Weekly			
				Class	Lab	Work	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<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	112	Co-op Work Experience I		0	0	20	2
				<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
<b>Fourth Semester (Fall)</b>							
COM	231	Public Speaking		3	0	0	3
CUL	130	Menu Design		2	0	0	2
CUL	180	Internatnl/American Regional Cuisine (or CUL 275 Catering Cuisine)		1	8	0	5
CUL	260	Baking II (or CUL 285 Competition Fundamentals)		1	4	0	3
CUL	270	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>
<b>Fifth Semester (Spring)</b>							
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>13</b>	<b>12</b>	<b>0</b>	<b>19</b>
<b>Program Totals</b>				<b>44</b>	<b>61</b>	<b>20</b>	<b>76</b>

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Education

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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.

Students develop skills in communication, critical thinking, and problem solving as well as interface design, multimedia formats, application programming, data architecture, and client/server technologies. The program develops technical skills through practical applications that employ current and emerging standards and technologies.

Graduates should qualify for employment as web designers, graphic artists/designers, multimedia specialists, web developers, web content specialists, media specialists, information specialists, digital media specialists, animation specialists, interface designers, and many new jobs yet to be defined in this expanding field.

## Digital Media Technology Associate in Applied Science Degree (A25210)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	21
Other Courses	40
<b>Program Total</b>	<b>76</b>

Courses requiring a grade of "C" or better: ART, CIS, COE, CSC, CTS, DBA, DME, FVP and WEB

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
ART	171	Computer Art I	0	6	3
CIS	110	Introduction to Computers	2	2	3
DME	110	Introduction to Digital Media	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	115	Mathematical Models	2	2	3
(or MAT 171 PreCalculus Algebra)					
			<b>9</b>	<b>14</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
ART	271	Computer Art II	0	6	3
CIS	115	Intro to Programming and Logic	2	3	3
DME	130	Digital Animation I	2	2	3
WEB	140	Web Development Tools	2	2	3
Major Elective 1*			2	2	3
			<b>8</b>	<b>15</b>	<b>15</b>



**Third Semester (Summer)**

DME	120	Intro to Multimedia Applications	2	2	3
DME	140	Introduction to Audio/Video Media	2	2	3
WEB	210	Web Design	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

Business and

**Fourth Semester (Fall)**

DBA	110	Database Concepts	2	3	3
DME	210	User Interface Design	2	2	3
DME	230	Digital Animation II	2	2	3
		Major Elective 2*	2	2	3
		Major Elective 3*	2	2	3
			<b>10</b>	<b>11</b>	<b>15</b>

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**Fifth Semester (Spring)**

DME	260	Emerging Technologies in Digital Media	2	2	3
COM	231	Public Speaking	3	0	3
		(or ENG 114 Prof. Research and Reporting)			
DME	285	Systems Project	2	2	3
		Major Elective 4*	2	2	3
			<b>9</b>	<b>6</b>	<b>12</b>

**Sixth Semester (Fall)**

DME	270	Professional Practices in Digital Media	2	2	3
		Humanities Elective	3	0	3
		Social Sciences Elective	3	0	3
			<b>8</b>	<b>2</b>	<b>9</b>

**Program Totals**

**50    54    76**

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

**\*Web/Multimedia Programming Track:**

Elective 1	WEB	115	Web Markup and Scripting
Elective 2	WEB	182	PHP Programming
Elective 3	DME	220	Interactive Multimedia Programming
Elective 4	CSC	151	JAVA Programming
			or Co-op Work Experience

**\*Graphic Artist/Design Track:**

Elective 1	ART	264	Digital Photography I
Elective 2	WEB	115	Web Markup and Scripting
Elective 3	DME	115	Graphic Design Tools
Elective 4			Co-op Work Experience
			or Art course approved by instructor

**\*Video Track:**

Elective 1	ART	256	Digital Photography I
Elective 2	ART	266	Videography
Elective 3	FVP	212	Production Techniques I
Elective 4	DME	240	Media Compression
			or Co-op Work Experience

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Digital Media Technology  
Associate in Applied Science Degree – Evening Schedule  
(A25210)

(Begins in even years only)

			Weekly		
			Class Hrs.	Lab Hrs.	Credit 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
(or MAT 171 PreCalculus Algebra)					
			<b>7</b>	<b>6</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
ART	171	Computer Art I	0	6	3
DME	110	Introduction to Digital Media	2	2	3
WEB	115	Web Markup and Scripting	2	2	3
			<b>4</b>	<b>10</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
CIS	115	Intro to Programming and Logic	2	3	3
Social Sciences Elective			3	0	3
			<b>5</b>	<b>3</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
ART	271	Computer Art II	0	6	3
DME	130	Digital Animation I	2	2	3
WEB	140	Web Development Tools	2	2	3
			<b>4</b>	<b>10</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
DME	120	Introduction to Multimedia Applications	2	2	3
DME	140	Introduction to Audio/Video media	2	2	3
Major Elective 1*			2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>					
COM	231	Public Speaking	3	0	3
(or ENG 114 Prof. Research and Reporting)					
DBA	110	Database Concepts	2	3	3
Humanities Elective			3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>
<b>Seventh Semester (Fall)</b>					
DME	210	User Interface Design	2	2	3
DME	230	Digital Animation II	2	2	3
Major Elective 2*			2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Eighth Semester (Spring)</b>					
DME	260	Emerging Technologies in Digital Media	2	2	3
DME	270	Professional Practices in Digital Media	2	2	3
Major Elective 3*			2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Ninth Semester (Summer)</b>					
DME	285	System Project	2	2	3
Major Elective 4*			2	2	3
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Program Totals</b>			<b>50</b>	<b>54</b>	<b>76</b>

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

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**\*Web/Multimedia Programming Track:**

Elective 1	WEB	115	Web Markup and Scripting
Elective 2	WEB	182	PHP Programming
Elective 3	DME	220	Interactive Multimedia Programming
Elective 4	CSC	151	JAVA Programming or Co-op Work Experience

**\*Graphic Artist/Design Track:**

Elective 1	ART	264	Digital Photography I
Elective 2	WEB	115	Web Markup and Scripting
Elective 3	DME	115	Graphic Design Tools
Elective 4			Co-op Work Experience or Art course approved by instructor

**\*Video Track:**

Elective 1	ART	256	Digital Photography I
Elective 2	ART	266	Videography
Elective 3	FVP	212	Production Techniques I
Elective 4	DME	240	Media Compression or Co-op Work Experience

**Digital Media Technology  
Digital Video Certificate (C25210L1)**

The Digital Video certificate provides training in multiple aspects of digital video and audio technologies including: creating graphics for video, camera and lighting techniques, capturing video, non-linear editing, and compression of audio/video media.

This certificate is designed for students who have experience with computers and want to improve digital audio and video skills.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

				Weekly		
				Class	Lab	Credit
				Hrs.	Hrs.	Hrs.
ART	171	Computer Art		0	6	3
ART	266	Videography I		0	6	3
DME	140	Introduction to Audio/Video Media		2	2	3
DME	240	Media Compression		2	2	3
FVP	212	Production Techniques I		1	12	5
<b>Certificate Totals</b>				<b>5</b>	<b>28</b>	<b>17</b>

**Digital Media Technology**  
**Interactive Multimedia Certificate (C25210L2)**

Business and  
Hospitality  
Education

The Interactive Multimedia Certificate provides training in multiple aspects of interactive multimedia using the industry standard software Adobe Flash. Topics will include: drawing with Flash, using symbols, animation and motion graphics, using audio and video, designing for interactivity and Actionscript programming.

This certificate is designed for students who have experience with computers and want to improve Flash design and programming skills. Previous experience with Adobe Photoshop, Adobe Illustrator, and web design suggested.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
DME	110	Introduction to Digital Media	2	2	3
DME	120	Intro to Multimedia Applications	2	2	3
DME	130	Digital Animation I	2	2	3
DME	220	Interactive Multimedia Programming	2	2	3
<b>Certificate Totals</b>			<b>8</b>	<b>8</b>	<b>12</b>

**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 (A25240)**

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	16
Other Courses	44
<b>Program Total</b>	<b>75</b>

Business and  
 Hospitality  
 Education

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

				Weekly			
				Class Hrs.	Lab Hrs.	Work Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
CUL	110	Sanitation and Safety		2	0	0	2
CUL	110A	Sanitation and Safety Lab		0	2	0	1
CUL	142	Fundamentals of Food		2	6	0	5
HRM	110	Introduction to Hospitality		2	0	0	2
HRM	124	Introduction to Service Management		2	2	0	3
MAT	115	Mathematical Models		2	2	0	3
				<b>10</b>	<b>14</b>	<b>0</b>	<b>17</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	112	Co-op Work Experience I		0	0	20	2
				<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
<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>

		Fifth Semester (Spring)					
Business and Hospitality Education	COM 231	Public Speaking	3	0	0	3	
	HRM 140	Hospitality Tourism Law	3	0	0	3	
	HRM 210	Meetings and Conventions	3	0	0	3	
	HRM 280	Hospitality Management Problems	3	0	0	3	
	PSY 150	General Psychology	3	0	0	3	
		Humanities Elective	3	0	0	3	
			18	0	0	18	
	Program Totals		61	24	20	75	

**Hotel and Restaurant Management  
Bed and Breakfast/Inn Management – Certificate\* (C25240L1)**

The B&B/Inn Management certificate program addresses the essential skills and concepts required to manage small lodging facilities, prepares individuals to enter the profession, and provides additional education to meet professional development needs. Courses cover lodging operations, preparation of basic pastries and breakfast items, business and financial issues, sales and marketing, and federal, state and local regulations and standards.

**Specific 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.*

		<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 Financial Accounting	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>

**Hotel and Restaurant Management  
Hospitality Management Certificate (C25240L2)**

The Hospitality Management Certificate provides line employees the concepts and skills to upgrade or cross-train in their careers in the hotel and restaurant management industry. In addition, successful completion of CUL 110 leads to a nationally recognized ServSafe Certification from the National Restaurant Association.

Specific 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.

Business and  
Hospitality  
Education

			Weekly		
			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
Certificate Totals			14	0	14

Human Resources Management

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

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

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

Human Resources Management  
Associate in Applied Science Degree – Evening Schedule  
(A2512C)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	19
Concentrations	15
Other Courses	27
Program Total	76

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

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
Business and Hospitality	<b>First Semester (Fall)</b>					
	ACA	115	First-Year Seminar	0	2	1
	ACC	120	Principles of Financial Accounting	3	2	4
Education	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>						
	BUS	137	Principles of Management	3	0	3
	OST	136	Word Processing	1	2	2
			<b>4</b>	<b>2</b>	<b>5</b>	
<b>Fourth Semester (Fall)</b>						
	ACC	140	Payroll Accounting	1	2	2
	BUS	115	Business Law I	3	0	3
	BUS	256	Recruitment, Selection, and Personnel Planning	3	0	3
	MAT	115	Mathematical Models	2	2	3
			<b>9</b>	<b>4</b>	<b>11</b>	
<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
	CTS	130	Spreadsheet	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
			<b>6</b>	<b>0</b>	<b>6</b>	
<b>Seventh Semester (Fall)</b>						
	BUS	234	Training and Development	3	0	3
	BUS	258	Compensation and Benefits	3	0	3
	ECO	251	Principles of Microeconomics	3	0	3
	MKT	120	Principles of Marketing	3	0	3
			<b>12</b>	<b>0</b>	<b>12</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
			Related Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>	
<b>Program Totals</b>			<b>68</b>	<b>16</b>	<b>76</b>	

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



# Information Systems Security

Information Systems Security covers a broad expanse of technology concepts. This curriculum provides individuals with the skills required to implement effective and comprehensive information security controls.

Coursework includes networking technologies, operating systems administration, information policy, intrusion detection, security administration, and industry best practices to protect data communications.

Graduates should be prepared for employment as security administrators. Additionally, they will acquire the skills that allow them to pursue security certifications.

Business and  
Hospitality  
Education

## Information Systems Security Associate in Applied Science Degree (A25270)

Program Summary	Hours
General Education	16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	4
<i>Social/Behavioral Sciences</i>	3
Core Courses	45
Other Courses	13
<b>Program Total</b>	<b>74</b>

Courses requiring a grade of "C" or better: BUS, CIS, CTS, DBA, NET, NOS and SEC

			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
NET	125	Networking Basics	1	4	3
NOS	110	Operating System Concepts	2	3	3
			<b>8</b>	<b>11</b>	<b>13</b>
<b>Second Semester (Spring)</b>					
MAT	171	PreCalculus Algebra	3	0	3
MAT	171A	PreCalculus Algebra Lab	0	2	1
NET	126	Routing Basics	1	4	3
NOS	120	Linux/UNIX Single User	2	2	3
NOS	130	Windows Single User	2	2	3
			<b>8</b>	<b>10</b>	<b>13</b>
<b>Third Semester (Summer)</b>					
CIS	115	Intro to Programming and Logic	2	3	3
NOS	220	Linux/UNIX Administration I	2	2	3
SEC	110	Security Concepts	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>10</b>	<b>5</b>	<b>12</b>

Business and Hospitality  Education	<b>Fourth Semester (Fall)</b>					
	NET	175	Wireless Technology	2	2	3
	NET	225	Routing and Switching I	1	4	3
	SEC	160	Secure Administration I	2	2	3
	SEC	150	Secure Communication	2	2	3
			Humanities/Fine Arts Elective	3	0	3
				<b>10</b>	<b>10</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>						
	BUS	110	Introduction to Business	3	0	3
	DBA	110	Database Concepts	2	3	3
	NET	226	Routing and Switching II	1	4	3
	SEC	220	Defense In-Depth	2	2	3
				<b>8</b>	<b>9</b>	<b>12</b>
<b>Sixth Semester (Summer)</b>						
	COM	231	Public Speaking	3	0	3
	SEC	210	Intrusion Detection	2	2	3
	SEC	289	Security Capstone Project	1	4	3
				<b>6</b>	<b>6</b>	<b>9</b>
<b>Program Totals</b>				<b>50</b>	<b>51</b>	<b>74</b>

**Information Systems Security**  
**Associate in Applied Science Degree - Evening Schedule**  
**(A25270)**

*(Begins in even 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>					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
NET	125	Networking Basics	1	4	3
		Social/Behavioral Science Elective	3	0	3
			<b>6</b>	<b>8</b>	<b>10</b>
<b>Second Semester (Spring)</b>					
ENG	111	Expository Writing	3	0	3
NET	126	Routing Basics	1	4	3
NOS	110	Operating System Concepts	2	3	3
			<b>6</b>	<b>7</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
NOS	120	Linux/UNIX Single User	2	2	3
NOS	130	Windows/Single User	2	3	3
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
NET	225	Routing and Switching I	1	4	3
NOS	220	Linux/UNIX Admin I	2	2	3
SEC	110	Security Concepts	3	0	3
			<b>6</b>	<b>6</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
BUS	110	Introduction to Business	3	0	3
NET	175	Wireless Technology	2	2	3
NET	226	Routing and Switching II	1	4	3
			<b>6</b>	<b>6</b>	<b>9</b>

**Sixth Semester (Summer)**

DBA	110	Database Concepts	2	3	3
		Humanities/Fine Arts Elective	3	0	3
			<b>5</b>	<b>3</b>	<b>6</b>

**Seventh Semester (Fall)**

MAT	171	Pre-Calculus Alegebra	3	0	3
MAT	171A	Pre-Calculus Alegebra Lab	0	2	1
SEC	160	Secure Administration I	2	2	3
SEC	150	Secure Communication	2	2	3
			<b>7</b>	<b>6</b>	<b>10</b>

**Eighth Semester (Spring)**

CIS	115	Intro to Programming and Logic	2	3	3
SEC	220	Defense In-Depth	2	2	3
SEC	210	Intrusion Detection	2	2	3
			<b>6</b>	<b>7</b>	<b>9</b>

**Ninth Semester (Summer)**

COM	120	Interpersonal Communications	3	0	3
SEC	289	Security Capstone Project	1	4	3
			<b>4</b>	<b>4</b>	<b>6</b>

<b>Program Totals</b>			<b>50</b>	<b>51</b>	<b>74</b>
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Business and  
Hospitality  
Education

**Marketing and Retailing**

Marketing and Retailing is a concentration under the curriculum title of Business Administration. This curriculum is designed to provide students with fundamental skills in marketing and retailing.

Course work includes marketing, retailing, merchandising, selling, advertising, computer technology, and management.

Graduates should qualify for marketing positions within manufacturing, retailing, and service organizations.

**Marketing and Retailing  
Associate in Applied Science Degree (A2512F)**

<b>Program Summary</b>	<b>Hours</b>
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	19
Concentration	15
Other Courses	27
<b>Program Total</b>	<b>76</b>

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

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
Business and Hospitality Education	First Semester (Fall)					
	ACC	120	Principles of Financial Accounting	3	2	4
	BUS	110	Introduction to Business	3	0	3
	CIS	110	Introduction to Computers	2	2	3
	ENG	111	Expository Writing	3	0	3
	MAT	115	Mathematical Models	2	2	3
			13	6	16	
Second Semester (Spring)						
	ACC	121	Principles of Managerial Accounting	3	2	4
	BUS	137	Principles of Management	3	0	3
	MKT	120	Principles of Marketing	3	0	3
	OST	136	Word Processing	1	2	2
			Humanities Elective	3	0	3
			13	4	15	
Third Semester (Summer)						
	BUS	115	Business Law I	3	0	3
	ECO	251	Principles of Microeconomics	3	0	3
	MKT	122	Visual Merchandising	3	0	3
	MKT	221	Consumer Behavior	3	0	3
			Related Elective*	3	0	3
			15	0	15	
Fourth Semester (Fall)						
	CTS	130	Spreadsheet	2	2	3
	ECO	252	Principles of Macroeconomics	3	0	3
	MKT	121	Retailing	3	0	3
	MKT	123	Fundamentals of Selling	3	0	3
	MKT	224	International Marketing	3	0	3
			14	2	15	
Fifth Semester (Spring)						
	COM	231	Public Speaking	3	0	3
	MKT	220	Advertising and Sales Promotion	3	0	3
	MKT	225	Marketing Research	3	0	3
	MKT	227	Marketing Applications	3	0	3
			Related Elective*	3	0	3
			15	0	15	
Program Totals			70	12	76	

*\*Related Electives: BUS 116, BUS 135, BUS 147, BUS 153, BUS 225, BUS 230, BUS 240, BUS 260, BUS 270, CTS 125.*

# Marketing and Retailing

## Associate in Applied Science Degree - Evening Schedule

### (A2512F)

Business and

Hospitality

Education

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACC	120	Principles of Financial Accounting	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 Managerial Accounting	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	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
MKT	120	Principles of Marketing	3	0	3
		Related Elective*	3	0	3
			<b>12</b>	<b>0</b>	<b>12</b>
<b>Fifth Semester (Spring)</b>					
CTS	130	Spreadsheet	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
MKT	123	Fundamentals of Selling	3	0	3
MKT	220	Advertising and Sales Promotion	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>
<b>Sixth Semester (Summer)</b>					
MKT	122	Visual Merchandising	3	0	3
MKT	221	Consumer Behavior	3	0	3
			<b>6</b>	<b>0</b>	<b>6</b>
<b>Seventh Semester (Fall)</b>					
COM	231	Public Speaking	3	0	3
MKT	121	Retailing	3	0	3
		Related Elective*	3	0	3
			<b>9</b>	<b>0</b>	<b>9</b>
<b>Eighth Semester (Spring)</b>					
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>
<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, CTS 125.

Business and  
Hospitality  
Education

# Marketing and Retailing

## Retail Marketing Certificate (C2512FL1)

The Retail Marketing Certificate is designed to prepare students to be successful in a retail marketing environment. Students will learn the fundamentals of marketing goods and services. This certificate will provide students with the essential knowledge of retailing, including effective operations, retail structure, non-store retailing, and upcoming trends. Students will learn how to design stimulating visual displays and the importance of visual merchandising. The uniqueness of consumer behavior will be explored with emphasis on the decision-making process.

Successful applicants for this certificate must have earned a high school diploma or GED.

			Weekly		Credit
			Class	Lab	
			Hrs.	Hrs.	Hrs.
MKT	120	Principles of Marketing	3	0	3
MKT	121	Retailing	3	0	3
MKT	122	Visual Merchandising	3	0	3
MKT	221	Consumer Behavior	3	0	3
Certificate Totals			12	0	12

## Medical Office Administration

This curriculum prepares individuals for employment in medical and other health-care related offices. Course work will include medical terminology; information systems; office management; medical coding, billing, and insurance; legal and ethical issues; and formatting and word processing. Students will learn administrative and support functions and develop skills applicable in medical environments. Employment opportunities are available in medical and dental offices, hospitals, insurance companies, laboratories, medical supply companies, and other health-care related organizations.

## Medical Office Administration - Diploma (D25310)

Program Summary	Hours
General Education	8
<i>English/Communication</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	5
Core Courses	24
Other Courses	16
Program Total	48

*Courses requiring a grade of "C" or better: BUS, CIS, MED and OST*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
MED	121	Medical Terminology I	3	0	3
OST	136	Word Processing	1	2	2
OST	164	Text Editing Applications	3	0	3
			<b>12</b>	<b>4</b>	<b>14</b>
<b>Second Semester (Spring)</b>					
BIO	163	Basic Anatomy and Physiology	4	2	5
MED	122	Medical Terminology II	3	0	3
OST	134	Text Entry and Formatting	2	2	3
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>16</b>	<b>8</b>	<b>20</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>

Business and  
Hospitality  
Education

*\*Major Electives: ACC 120, ACC 140, CTS 130, DBA 110, NET 110, OST 233, OST 286, SPA 120.*

### Medical Office Administration - Diploma - Evening Schedule (D25310)

*(Begins in even years only)*

*Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CIS	110	Introduction to Computers	2	2	3
OST	136	Word Processing	1	2	2
OST	164	Text Editing Applications	3	0	3
			<b>6</b>	<b>4</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
BIO	163	Basic Anatomy and Physiology	4	2	5
MED	121	Medical Terminology I	3	0	3
OST	134	Text Entry and Formatting	2	2	3
			<b>9</b>	<b>4</b>	<b>11</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)			
Business and Hospitality Education	OST	184	Records Management	1	2	2
	OST	201	Medical Transcription I	3	2	4
	OST	289	Office Systems Management	2	2	3
				6	6	9
			Fifth Semester (Spring)			
Business and Hospitality Education	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
			12	0	12	
			Program Totals			
			40	16	48	

*\*Major Electives: ACC 120, ACC 140, CTS 130, DBA 110, NET 110, OST 233, OST 286, SPA 120.*

**Medical Office Administration**  
**Medical Coding Certificate - Evening Schedule (C25310)**

*(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.)

			<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>					
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>
<b>Second Semester (Spring)</b>					
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>
<b>Third Semester (Summer)</b>					
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>
<b>Certificate Totals</b>			<b>15</b>	<b>6</b>	<b>18</b>



# 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.

Business and  
Hospitality  
Education

## Medical Transcription - Diploma (D25320)

Program Summary	Hours
General Education	8
<i>English/Communication</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	5
Core Courses	19
Other Courses	17
<b>Program Total</b>	<b>44</b>

*Courses requiring a grade of "C" or better: CIS, COE, MED and OST*

*Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwam at 98% accuracy using the touch system and college English placement test.*

				Weekly			
				Class Hrs.	Lab Hrs.	Work Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
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	136	Word Processing		1	2	0	2
OST	164	Text Editing Applications		3	0	0	3
				<b>11</b>	<b>6</b>	<b>0</b>	<b>14</b>
<b>Second Semester (Spring)</b>							
BIO	163	Basic Anatomy and Physiology		4	2	0	5
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	201	Medical Transcription I		3	2	0	4
				<b>14</b>	<b>6</b>	<b>0</b>	<b>17</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>								
Business and Hospitality Education		COE	111	Co-op Work Experience	0	0	10	1
					<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
		<b>Program Totals</b>			<b>35</b>	<b>16</b>	<b>10</b>	<b>44</b>
<i>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.</i>								

**Medical Transcription  
Diploma - Evening Schedule (D25320)**

*(Begins in even years only)*  
*Entrance requirements: Keyboarding placement test into OST 134 consisting of 25 gwm at 98% accuracy using the touch system and college English placement test.*

				Weekly			
				Class Hrs.	Lab Hrs.	Work Hrs.	Credit 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	111	Co-op Work Experience		0	0	10	1
				<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
<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 network infrastructure environments. Students will learn how to use technologies to provide reliable transmission and delivery of data, voice, image, and video communications in business, industry, and education.

Coursework includes design, installation, configuration, and management of network infrastructure technologies and network operating systems. Emphasis is placed on the implementation and management of network software and the implementation and management of hardware such as switches and routers.

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

Business and  
Hospitality  
Education

## Networking Technology Associate in Applied Science Degree

Program Summary	Hours
General Education	16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	4
<i>Social/Behavioral Sciences</i>	3
Core Courses	45
Other Courses	13
<b>Program Total</b>	<b>74</b>

*Courses requiring a grade of "C" or better: BUS, CIS, CTS, DBA, NET and SEC*

			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
NET	125	Networking Basics	1	4	3
NOS	110	Operating System Concepts	2	3	3
			<b>8</b>	<b>11</b>	<b>13</b>
<b>Second Semester (Spring)</b>					
MAT	171	PreCalculus Algebra	3	0	3
MAT	171A	PreCalculus Algebra Lab	0	2	1
NET	126	Routing Basics	1	4	3
NOS	120	Linux/UNIX Single User	2	2	3
NOS	130	Windows Single User	2	2	3
			<b>8</b>	<b>10</b>	<b>13</b>

		<b>Third Semester (Summer)</b>			
Business and Hospitality Education	BUS 110	Introduction to Business	3	0	3
	NET 260	Internet Development & Support	3	0	3
	NOS 220	Linux/UNIX Admin I	2	2	3
	SEC 110	Security Concepts	3	0	3
			<b>11</b>	<b>2</b>	<b>12</b>
		<b>Fourth Semester (Fall)</b>			
	DBA 110	Database Concepts	2	3	3
	NET 175	Wireless Technology	2	2	3
	NET 225	Routing and Switching I	1	4	3
	NOS 230	Windows Admin I	2	2	3
		Humanities/Fine Arts Elective	3	0	3
			<b>10</b>	<b>11</b>	<b>15</b>
		<b>Fifth Semester (Spring)</b>			
	CIS 115	Intro to Programming and Logic	2	3	3
	CTS 120	Hardware/Software Support	2	3	3
	NET 226	Routing and Switching II	1	4	3
	NET 231	Windows Admin II	2	2	3
			<b>7</b>	<b>12</b>	<b>12</b>
		<b>Sixth Semester (Summer)</b>			
	COM 120	Interpersonal Communications	3	0	3
	NET 289	Networking Project	1	4	3
		Social/Behavioral Science Elective	3	0	3
			<b>7</b>	<b>4</b>	<b>9</b>
		<b>Program Totals</b>	<b>51</b>	<b>50</b>	<b>74</b>

**Networking Technology**  
**Associate in Applied Science Degree – Evening Schedule**  
**(A25340)**

*(Begins in even years only)*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
First Semester (Fall)					
ACA	115	First-Year Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
NET	125	Networking Basics	1	4	3
		Social/Behavioral Science Elective	3	0	3
			6	8	10
Second Semester (Spring)					
ENG	111	Expository Writing	3	0	3
NET	126	Routing Basics	1	4	3
NOS	110	Operating System Concepts	2	3	3
			6	7	9
Third Semester (Summer)					
NOS	120	Linux/UNIX Single User	2	2	3
NOS	130	Windows Single User	2	2	3
			4	4	6
Fourth Semester (Fall)					
NET	225	Routing and Switching I	1	4	3
NOS	220	Linux/UNIX Admin I	2	2	3
SEC	110	Security Concepts	3	0	3
			6	6	9

**Fifth Semester (Spring)**

BUS	110	Introduction to Business	3	0	3
NET	175	Wireless Technology	2	2	3
NET	226	Routing and Switching II	1	4	3
			<b>6</b>	<b>6</b>	<b>9</b>

Business and

**Sixth Semester (Summer)**

DBA	110	Database Concepts	2	3	3
		Humanities/Fine Arts Elective	3	0	3
			<b>5</b>	<b>3</b>	<b>6</b>

Hospitality

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**Seventh Semester (Fall)**

CTS	120	Hardware/Software Support	2	3	3
MAT	171	PreCalculus Algebra	3	0	3
MAT	171A	PreCalculus Algebra Lab	0	2	1
NOS	230	Windows Admin I	2	2	3
			<b>7</b>	<b>7</b>	<b>10</b>

**Eighth Semester (Spring)**

CIS	115	Intro to Programming and Logic	2	3	3
NET	260	Internet Development and Support	3	0	3
NOS	231	Windows Admin II	2	2	3
			<b>7</b>	<b>5</b>	<b>9</b>

**Ninth Semester (Summer)**

COM	120	Interpersonal Communication	3	0	3
NET	289	Networking Project	1	4	3
			<b>4</b>	<b>4</b>	<b>6</b>

<b>Program Totals</b>			<b>51</b>	<b>50</b>	<b>74</b>
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## Networking Technology

### Basic Network Administration Certificate (C25340L3)

This certificate is designed for the office professional with responsibilities for an organization's local area network administration. Students will learn the basics of network administration including file management, network infrastructure, user management, security concepts, and troubleshooting using operating systems such as Microsoft Windows™ and Linux. Upon successful completion of this certificate program students will have the knowledge they need to perform basic administrative tasks on servers in a small office-home office (SOHO) environment.

Applicants must have earned a high school diploma or GED to apply for this certificate. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
NET	125	Networking Basics	1	4	3
NOS	110	Operating System Concepts	2	3	3
NOS	120	Linux/UNIX Single User	2	2	3
NOS	130	Windows Single User	2	4	3
NOS	220	Linux/UNIX Admin 1	2	2	3
NOS	230	Windows Admin 1	2	2	3
<b>Certificate Totals</b>			<b>11</b>	<b>17</b>	<b>18</b>

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Education

## Networking Technology CCNA Preparation Certificate (C25340L1)

This certificate is designed to help prepare students for the Cisco Certified Network Association (CCNA) examination. Topics include network topologies and design, router configuration and protocols, switching theory, virtual LANS and threaded case studies. Upon successful completion of the four course sequence, students will have acquired the knowledge necessary to perform entry level design, construction, and maintenance of network infrastructures. This certificate will help prepare students for the Cisco Certified Network Associate certification exam.

Applicants must have earned a high school diploma or GED. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
NET	125	Networking Basics	1	4	3
NET	126	Routing Basics	1	4	3
NET	225	Routing and Switching I	1	4	3
NET	226	Routing and Switching II	1	4	3
Certificate Totals			4	16	12

## Networking Technology CCNP Preparation Certificate (C25340L2)

Students will learn advanced internetworking concepts. Topics will include multi-layer switching, fault tolerance, remote access, controlling overhead, ad-vanced routed protocols, WAN troubleshooting. Upon successful completion of this certificate, students will have the skills to implement and build scalable campus networks using multilayer switching technologies, create and deploy a global intranet, and troubleshoot a complex network environment using routers and switches for multiprotocol client hosts and services. This certificate will help prepare students for the Cisco Certified Network Professional 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
Certificate Totals			4	16	12

# Networking Technology RHCT Preparation Certificate (C25340L6)

Students will learn concepts related to administration of open source operating systems. Red Hat™ 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 and client machine utilizing an open source operating system. This certificate will help prepare students for the Red Hat Certified Technician certification exam. Applicants must have earned a high school diploma or GED to apply for this certificate. Applicants must also successfully complete a basic computer concepts assessment or have completed CIS 110.

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			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
NOS	110	Operating System Concepts	2	3	3
NOS	120	Linux/UNIX Single User	2	2	3
NOS	220	Linux/UNIX Admin I	2	2	3
NOS	221	Linux/UNIX Admin II	2	2	3
<b>Certificate Totals</b>			<b>8</b>	<b>9</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 (A25360)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	14
Other Courses	44
<b>Program Total</b>	<b>73</b>

*Courses requiring a grade of "C" or better: ACC, BUS, CTS, DBA, OST and WEB*

			Weekly			
			Class	Lab	Credit	
			Hrs.	Hrs.	Hrs.	
Business and Hospitality	<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
Education	OST	131	Keyboarding	1	2	2
	OST	286	Professional Development	3	0	3
				<b>12</b>	<b>8</b>	<b>16</b>
<b>Second Semester (Spring)</b>						
	CTS	130	Spreadsheet	2	2	3
	MAT	115	Mathematical Models	2	2	3
	OST	134	Text Entry and Formatting	2	2	3
	OST	136	Word Processing	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
	COM	231	Public Speaking	3	0	3
	OST	132	Keyboard Skill Building	1	2	2
	OST	289	Office Systems Management	2	2	3
	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
	DBA	110	Database Concepts	2	3	3
	OST	137	Office Systems Applications	1	2	2
	WEB	140	Web Development Tools	2	2	3
			Major Elective*	3	0	3
			<b>11</b>	<b>7</b>	<b>14</b>	
<b>Fifth Semester (Spring)</b>						
	CTS	155	Technical Support Functions	2	2	3
	OST	233	Office Publications Design	2	2	3
			Humanities Elective	3	0	3
			Major Elective*	5	0	5
			<b>12</b>	<b>4</b>	<b>14</b>	
<b>Program Totals</b>			<b>56</b>	<b>35</b>	<b>73*</b>	

*\*The hour totals include a minimum of eight credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, BUS 240, COE 211OS, NET 110, SPA 120.*

**Office Systems Technology Diploma (D25360)**

Program Summary	Hours
General Education	6
English/Communication	6
Core Courses	14
Other Courses	21
<b>Program Total</b>	<b>41</b>

*Courses requiring a grade of "C" or better: BUS, CIS, CTS and OST*



			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACC	120	Principles of Financial Accounting	3	2	4
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
OST	131	Keyboarding	1	2	2
OST	286	Professional Development	3	0	3
			<b>12</b>	<b>6</b>	<b>15</b>
<b>Second Semester (Spring)</b>					
CTS	130	Spreadsheet	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
COM	231	Public Speaking	3	0	3
OST	132	Keyboard Skill Building	1	2	2
OST	289	Office Systems Management	2	2	3
		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>

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*\*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, DBA 110, NET 110, SPA 120.*

## Office Systems Technology

### Word Processing/Desktop Publishing Certificate (C25360L1)

This certificate program gives essential training in word processing and desktop publishing. You will learn state-of-the-art computer software that is used in offices and businesses today. Applicants must have earned a high school diploma or GED to apply for this certificate program.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
CIS	110	Introduction to Computers	2	2	3
CTS	125	Presentation Graphics	2	2	3
OST	131	Keyboarding	1	2	2
		or tested keyboarding proficiency			
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>

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# 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 license examination. They should be able to enter apprenticeship training and to provide real estate services to consumers in a competent manner.

## Real Estate Certificate - Evening Schedule (C25400)

*(Day classes may be available)*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
RLS	112	Broker Prelicensing	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>					
MKT	123	Fundamentals of Selling	3	0	3
RLS	120	Real Estate Practice	2	0	2
			<b>5</b>	<b>0</b>	<b>5</b>
<b>Certificate Totals</b>			<b>12</b>	<b>0</b>	<b>12</b>

# Real Estate Appraisal

The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels.

Course work includes appraisal theory and concepts with applications, the North Carolina Appraisers Act, the North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice

Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

## Notice

REA courses must be taken in sequence. State licensure or certification requires qualifying education, an examination and a substantial experience component. In addition to the appraisal courses, one must have at least 21 semester credit hours covering the following subject matter courses: English Composition, Principles of Economics (Micro or Macro), Finance, Algebra, Geometry or higher mathematics, Statistics, Introduction to Computers - Word Processing/Spreadsheets, and Business or Real Estate Law. In lieu of the required courses, an Associate degree will qualify. Please contact the Real Estate Program Coordinator for additional information.

## Real Estate Appraisal Certificate (C25420)

(Evening only)

			Weekly			Business and Hospitality Education
			Class Hrs.	Lab Hrs.	Credit Hrs.	
<b>First Semester (Fall)</b>						
REA	111	Introduction to Real Estate Appraisal R-1	2	0	2	
REA	112	Valuation Principle and Practices R-2	2	0	2	
			<b>4</b>	<b>0</b>	<b>4</b>	
<b>Second Semester (Spring)</b>						
REA	113	Applied Residential Property Valuation R-3	1	0	1	
REA	114	USPAP R-4	1	0	1	
REA	210	Intro to Income Property Appraisal G-1	2	0	2	
			<b>4</b>	<b>0</b>	<b>4</b>	
<b>Third Semester (Fall)</b>						
REA	212	Adv. Income Capitalization Procedures G-2	2	0	2	
REA	213	Applied Income Property Valuation G-3	2	0	2	
			<b>4</b>	<b>0</b>	<b>4</b>	
<b>Certificate Totals</b>			<b>12</b>	<b>0</b>	<b>12</b>	

## Resort and Spa Management\*

The Resort and Spa Management curriculum prepares individuals with the skills and knowledge required for employment in the resort and spa industry including day spas, beach resorts, mountain resorts, golf resorts, extended stay spas and cruise lines.

Course work includes physical fitness management, nutrition, spa cuisine, hospitality law, spa equipment and management, club and resort management, accounting and marketing. Courses emphasizing a practical application, a strong theoretical base, and professionalism provide the critical competencies to meet industry demands.

Upon completion, graduates should qualify for entry or mid-level management positions in the resort and spa industry including member/guest services directors, spa assistant directors, spa managers, spa attendant supervisors, spa sales managers, and assistant club house managers.

*\*This program will begin Fall 2007 pending State Board of Community Colleges approval.*

### 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.

**Resort and Spa Management  
Associate in Applied Science (A55410)**

Program Summary		Hours
Business and	General Education	15
	English/Communication	6
Hospitality	Humanities/Fine Arts	3
Education	Natural Sciences/Behavioral Sciences	3
	Social/Behavioral Sciences	3
Core Courses		19
Other Courses		40
<b>Program Total</b>		<b>74</b>

Courses requiring a grade of "C" or better: ACC, CIS, COE, CUL, HEA, HRM, PSF and RSM

				Weekly			
				Class Hrs.	Lab Hrs.	Work Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
CIS	110	Introduction to Computers		2	2	0	3
MAT	115	Mathematical Models		2	2	0	3
PSF	110	Exercise Science		4	0	0	4
RSM	110	Intro to Resort & Spa Ind		3	0	0	3
RSM	125	Spa Services Mgt.		3	0	0	3
RSM	125A	Spa Services Mgt. Lab		0	2	0	1
				<b>14</b>	<b>8</b>	<b>0</b>	<b>18</b>
<b>Second Semester (Spring)</b>							
ACC	120	Principles of Financial Accounting		3	2	0	4
CUL	110	Sanitation and Safety		2	0	0	2
ENG	111	Expository Writing		3	0	0	3
RSM	120	Reqmt & Scope of Practice		3	0	0	3
RSM	130	Controls/Resorts and Spas		2	0	0	2
RSM	210	Staffing & HR Mgmt		3	0	0	3
				<b>16</b>	<b>2</b>	<b>0</b>	<b>17</b>
<b>Third Semester (Summer)</b>							
HEA	112	First Aid and CPR		1	2	0	2
PSY	150	General Psychology		3	0	0	3
		Humanities Elective		3	0	0	3
				<b>7</b>	<b>2</b>	<b>0</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>							
COM	231	Public Speaking		3	0	0	3
CUL	185	Spa Cuisine		2	4	0	4
HRM	240	Hospitality Marketing		3	0	0	3
RSM	113	Ethics of Touch		2	0	0	2
RSM	115	Resort & Spa Technologies		3	0	0	3
RSM	190	Customer Service		1	2	0	2
				<b>14</b>	<b>6</b>	<b>0</b>	<b>17</b>
<b>Fifth Semester (Spring)</b>							
COE	111	Co-op Work Experience I		0	0	10	1
COE	115	Work Experience Seminar		1	0	0	1
PSF	212	Exercise Programming		2	2	0	3
RSM	180	Retail Marketing for Spas		3	0	0	3
RSM	245	Resort & Spa Law		3	0	0	3
RSM	210	Resort & Spa Mgmt Issues		3	0	0	3
				<b>12</b>	<b>2</b>	<b>10</b>	<b>14</b>
<b>Program Totals</b>				<b>63</b>	<b>20</b>	<b>10</b>	<b>74</b>

## Therapeutic Massage\*

The Therapeutic Massage curriculum prepares graduates to work in direct client care settings to provide manipulation, methodical pressure, friction and kneading of the body for maintaining wellness or treating alterations in wellness throughout the lifespan.

Courses will include content in normal human anatomy and physiology, therapeutic massage, ethical/legal issues, business practices, nutrition and psychology.

Employment opportunities in North Carolina may be found in hospitals, rehabilitation centers, health departments, home health, medical offices, nursing homes, spas, health and sports clubs, and private practice. Graduates may be eligible to take the National Certification for Therapeutic Massage and Bodywork.

*\*This program will begin Fall 2007 pending State Board of Community Colleges approval.*

### 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.

## Therapeutic Massage Associate in Applied Science (A45750)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	49
Other Courses	12
<b>Program Total</b>	<b>76</b>

*Courses requiring a grade of "C" or better: BIO, BUS, CIS, MED, MTH and PSY*

				Weekly			
				Class	Lab	Work	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
BIO	163	Basic Anatomy and Physiology		4	2	0	5
MED	120	Survey of Medical Terminology		2	0	0	2
MTH	110	Fundamentals of Massage		6	12	0	10
				<b>12</b>	<b>16</b>	<b>0</b>	<b>18</b>
<b>Second Semester (Spring)</b>							
BIO	271	Pathophysiology		3	0	0	3
ENG	111	Expository Writing		3	0	0	3
MTH	120	Therapeutic Massage Applications		6	12	0	10
PSY	118	Interpersonal Psychology		3	0	0	3
				<b>15</b>	<b>12</b>	<b>0</b>	<b>19</b>

Business and  
Hospitality  
Education

		<b>Third Semester (Summer)</b>				
Business and Hospitality Education	MAT 115	Mathematical Models	2	2	0	3
	MTH 125	Ethics of Massage	2	0	0	2
		Social/Behavioral Science Elective	3	0	0	3
			<b>7</b>	<b>2</b>	<b>0</b>	<b>8</b>
		<b>Fourth Semester (Fall)</b>				
Education	BIO 155	Nutrition	3	0	0	3
	COM 120	Interpersonal Communications	3	0	0	3
	MTH 210	Advanced Skills of Massage Therapy	4	12	0	8
		Humanities Elective	3	0	0	3
			<b>13</b>	<b>12</b>	<b>0</b>	<b>17</b>
		<b>Fifth Semester (Spring)</b>				
	BUS 230	Small Business Management (or BUS 137 Principles of Management)	3	0	0	3
	CIS 110	Introduction to Computers	2	2	0	3
	COE 111	Co-Op Work Experience I	0	0	10	1
	MTH 220	Outcome Based Massage	4	9	0	7
			<b>9</b>	<b>11</b>	<b>10</b>	<b>14</b>
		<b>Program Totals</b>				
			<b>56</b>	<b>53</b>	<b>10</b>	<b>76</b>

Therapeutic Massage - Diploma (D45750)

<b>Program Summary</b>	<b>Hours</b>
General Education	9
<i>English/Communication</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	28
Other Courses	8
<b>Program Total</b>	<b>45</b>

Courses requiring a grade of "C" or better: BIO, BUS, CIS, MED, MTH and PSY

			<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
BIO 163	Basic Anatomy and Physiology		4	2	5
MED 120	Survey of Medical Terminology		2	0	2
MTH 110	Fundamentals of Massage		6	12	10
			<b>12</b>	<b>16</b>	<b>18</b>
<b>Second Semester (Spring)</b>					
BIO 271	Pathophysiology		3	0	3
ENG 111	Expository Writing		3	0	3
MTH 120	Therapeutic Massage Applications		6	12	10
PSY 118	Interpersonal Psychology		3	0	3
			<b>15</b>	<b>12</b>	<b>19</b>
<b>Third Semester (Summer)</b>					
MAT 115	Mathematical Models		2	2	3
MTH 125	Ethics of Massage		2	0	2
	Social/Behavioral Science Elective		3	0	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Program Totals</b>			<b>34</b>	<b>30</b>	<b>45</b>

# Web Technologies

The Web Technologies curriculum prepares graduates for careers in the information technology arena using computers and distributed computing to disseminate and collect information via the web.

Coursework in this program covers the terminology and use of computers, network devices, networks, servers, databases, applications, programming languages, as well as web applications, site development and design. Studies will provide opportunity for students to learn related industry standards.

Graduates should qualify for career opportunities as designers, administrators, or developers in the areas of web applications, websites, web services, and related areas of distributed computing.

Business and  
Hospitality  
Education

## Web Technologies Associate in Applied Science (A25290)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Behavioral Sciences</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	42
Other Courses	19
<b>Program Total</b>	<b>76</b>

Courses requiring a grade of "C" or better: BUS, CIS, CSC, CTS, DBA, DME, NET, NOS, SEC, WEB

			Weekly		
			Class Hrs.	Lab Hrs.	Credit 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 (or MAT 171 PreCalculus Algebra)	2	2	3
NOS	110	Operating Systems Concepts	2	2	3
WEB	110	Internet/Web Fundamentals	2	2	3
			<b>11</b>	<b>11</b>	<b>16</b>
<b>Second Semester (Spring)</b>					
CIS	115	Intro to Programming and Logic	2	3	3
DBA	110	Database Concepts	2	3	3
NET	110	Networking Concepts	2	2	3
WEB	115	Web Markup and Scripting	2	2	3
WEB	140	Web Development Tools	2	2	3
			<b>10</b>	<b>12</b>	<b>15</b>

			<b>Third Semester (Summer)</b>			
Business and Hospitality Education	NOS	120	Linux/UNIX Single User	2	2	3
	WEB	120	Introduction to Internet Multimedia	2	2	3
	COM	231	Public Speaking	3	0	3
				<b>7</b>	<b>4</b>	<b>9</b>
			<b>Fourth Semester (Fall)</b>			
	DBA	120	Database Programming I	2	2	3
	WEB	182	PHP Programming	2	2	3
	WEB	210	Web Design	2	2	3
	WEB	250	Database Driven Websites	2	2	3
				2	2	3
				<b>10</b>	<b>10</b>	<b>15</b>
			<b>Fifth Semester (Spring)</b>			
	SEC	110	Security Concepts	3	0	3
	WEB	230	Implementing Web Serv	2	2	3
	WEB	289	Internet Technologies Project	1	4	3
				2	2	3
				<b>8</b>	<b>8</b>	<b>12</b>
			<b>Sixth Semester (Spring)</b>			
	BUS	110	Introduction to Business	3	0	3
				3	0	3
				3	0	3
				<b>9</b>	<b>0</b>	<b>9</b>
			<b>Program Totals</b>			
			<b>55</b>	<b>45</b>	<b>76</b>	

*\*Choose two of the following major electives:*

- CSC 139 Visual Basic Programming
- CSC 151 Java Programming
- DBA 210 Database Administration
- NOS 220 Linux/UNIX Admin I
- NOS 221 Linux/UNIX Admin II
- WEB 186 XML Technology
- WEB 215 Adv. Markup and Scripting

**Web Technologies**  
**Associate in Applied Science - Evening Schedule (A25290)**  
*(Begins in even years only)*

			<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
WEB	110	Internet/Web Fundamentals	2	2	3
			<b>4</b>	<b>6</b>	<b>7</b>
			<b>Second Semester (Spring)</b>		
ENG	111	Expository Writing	3	0	3
MAT	115	Mathematical Models (or MAT 171 PreCalculus Algebra)	2	2	3
WEB	115	Web Markup and Scripting	2	2	3
WEB	140	Web Development Tools	2	2	3
			<b>9</b>	<b>6</b>	<b>12</b>



**Third Semester (Summer)**

BUS	110	Introduction to Business	3	0	3
NOS	110	Operating System Concepts	2	3	3
		Humanities Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>

Business and

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**Fourth Semester (Fall)**

CIS	115	Intro to Programming and Logic	2	3	3
DBA	110	Database Concepts	2	3	3
			<b>4</b>	<b>6</b>	<b>6</b>

**Fifth Semester (Spring)**

COM	231	Public Speaking	3	0	3
NET	110	Networking Concepts	2	2	3
WEB	120	Introduction to Internet Multimedia	2	2	3
		Social/Behavioral Science Elective	3	0	3
			<b>10</b>	<b>4</b>	<b>12</b>

**Sixth Semester (Summer)**

NOS	120	Linux/UNIX Single User	2	2	3
WEB	210	Web Design	2	2	3
			<b>4</b>	<b>4</b>	<b>6</b>

**Seventh Semester (Fall)**

DBA	120	Database Programming I	2	2	3
WEB	182	PHP Programming	2	2	3
WEB	230	Implementing Web Serv	2	2	3
			<b>6</b>	<b>6</b>	<b>9</b>

**Eighth Semester (Spring)**

SEC	110	Security Concepts	3	0	3
WEB	250	Database Driven Websites	2	2	3
		Major Elective*	2	2	3
			<b>7</b>	<b>4</b>	<b>9</b>

**Ninth Semester (Summer)**

WEB	289	Internet Technologies Project	1	4	3
		Major Elective*	2	2	3
			<b>3</b>	<b>6</b>	<b>6</b>

<b>Program Totals</b>			<b>55</b>	<b>45</b>	<b>76</b>
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*\*Choose two of the following major electives:*

CSC	139	Visual Basic Programming
CSC	151	Java Programming
DBA	210	Database Administration
NOS	220	Linux/UNIX Admin I
NOS	221	Linux/UNIX Admin II
WEB	186	XML Technology
WEB	215	Adv. Markup and Scripting

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Web Technologies  
Web Designer Certificate (C25290L1)

The Web Designer certificate provides students with an essential set of courses that prepares them to create effective Web sites. Students will learn essential skills of Web design and gain proficiency in the software tools necessary to create Web sites. Courses cover multiple aspects of Internet-related technologies, including: Internet protocols and tools, web site design, markup languages, client-side scripting, and multimedia development.

This certificate is designed for students who wish to acquire a credential that provides evidence of their proficiency in web design.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
WEB	110	Internet/Web Fundamentals	2	2	3
WEB	115	Web Markup and Scripting	2	2	3
WEB	120	Introduction to Internet Multimedia	2	2	3
WEB	140	Web Development Tools	2	2	3
WEB	210	Web Design	2	2	3
Certificate Totals			10	10	15

Web Technologies  
Web Programmer Certificate (C25290L2)

The Web Programming certificate provides courses in the programming/database aspects of Internet-related technologies. Coursework includes client- and server-side scripting, Web/database programming, and an advanced programming elective (XML, Java, or Advanced Markup and Scripting).

This certificate is designed for students who wish to acquire a credential that provides evidence of their proficiency in web programming.

Successful applicants for this certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
DBA	120	Database Programming I	2		3
WEB	115	Web Markup and Scripting	2	2	3
WEB	182	PHP Programming	2	2	3
WEB	250	Database Driven Websites	2	2	3
Select ONE of the following courses:					
CSC	145	Java Programming	2	3	3
WEB	186	XML Technology	2	2	3
WEB	215	Adv. Markup and Scripting	2	2	3
Certificate Totals			10	10-11	15

# Engineering and Applied Technology

The Engineering and Applied Technology division offers a variety of Associate in Applied Science degree programs in engineering technologies and applied technologies. Most programs are available on a day and evening basis.

Students enrolled in this division are provided an appropriate mix of theory and hands-on applications. Students in the diploma programs spend much of their time working under industrial shop conditions. Modern facilities include well-equipped laboratories and shops to support goals of the programs. Emphasis is placed on student proficiency in the use of procedures, equipment, and instruments related to the specific program area. Appropriate related and general education courses support these applied programs.

Engineering  
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Technology

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

Automotive Systems Technology  
Civil Engineering Technology  
Computer-Aided Drafting Technology  
Computer Engineering Technology  
Construction Management Technology  
Electrical/Electronics Technology  
Electronics Engineering Technology  
Heavy Equipment and Transport Technology  
Industrial Systems Technology  
Machining Technology  
Mechanical Engineering Technology  
Surveying Technology  
Welding Technology

### **Diplomas Awarded**

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

### **Certificates**

Air Conditioning, Heating and Refrigeration Technology – Basic  
Air Conditioning, Heating and Refrigeration Technology – Intermediate  
Air Conditioning, Heating and Refrigeration Technology – Advanced  
Automotive Systems Technology - Basic Automotive Repair  
Automotive Systems Technology - Drive Trains  
Automotive Systems Technology - Electrical/Electronics  
Automotive Systems Technology - Under-Car  
Computer Engineering Technology  
    - Personal Computer and Network Maintenance  
Computer-Aided Drafting Technology  
Construction Management Technology  
Electrical/Electronics Technology – Electrical Wiring  
Electronics Engineering Technology – Instrumentation and Control  
Heavy Equipment and Transport Technology  
Industrial Systems Technology – Basic Maintenance  
Industrial Systems Technology – Metal Fabrication  
Machining Technology - Basic  
Machining Technology - CNC Programming Certificate  
Mechanical Engineering Technology - Manufacturing  
Surveying Technology - Civil/Surveying CAD  
Surveying Technology - Surveying Fundamentals  
Welding Technology - Basic Welding I  
Welding Technology - Basic Welding II

# Air Conditioning, Heating and Refrigeration Technology (A35100)

Engineering  
and Applied  
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.

## Air Conditioning, Heating and Refrigeration Technology Diploma - Day Schedule (D35100)

Program Summary			Hours		
General Education			7		
<i>English/Communication</i>			3		
<i>Natural Sciences/Mathematics</i>			4		
Core Courses			20		
Other Courses			17		
<b>Program Total</b>			<b>44</b>		
<i>Courses requiring a grade of "C" or better: AHR, and ELC 111 and 132</i>					
			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	1	3	2
COM	120	Interpersonal Communication (or COM 231)	3	0	3
PHY	122	Applied Physics II	3	2	4
			<b>12</b>	<b>14</b>	<b>18</b>
<b>Second Semester (Spring)</b>					
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
AHR	210	Residential Building Code (or AHR 211, or AHR 212)	1	2	2
			<b>9</b>	<b>20</b>	<b>18</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>26</b>	<b>41</b>	<b>44</b>

Engineering  
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Technology

Air Conditioning, Heating and Refrigeration Technology  
Diploma - Evening Schedule (D35100)

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>					
AHR	112	Heating Technology	2	4	4
ELC	111	Introduction to Electricity	2	2	3
			<b>4</b>	<b>6</b>	<b>7</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>					
BPR	135	Schematics and Diagrams	2	0	2
COM	120	Interpersonal Communication (or COM 231)	3	0	3
			<b>5</b>	<b>0</b>	<b>5</b>
<b>Fourth Semester (Fall)</b>					
AHR	110	Introduction to Refrigeration	2	6	5
AHR	113	Comfort Cooling	2	4	4
			<b>4</b>	<b>10</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
AHR	115	Refrigeration Systems	1	3	2
AHR	114	Heat Pump Technology	2	4	4
AHR	125	HVAC Electronics	1	3	2
			<b>4</b>	<b>10</b>	<b>8</b>
<b>Sixth Semester (Summer)</b>					
No Courses Scheduled					
<b>Seventh Semester (Fall)</b>					
PHY	122	Applied Physics II	3	2	4
AHR	210	Residential Building Code (or AHR 211, or AHR 212)	1	2	2
			<b>4</b>	<b>4</b>	<b>6</b>
<b>Program Totals</b>			<b>26</b>	<b>41</b>	<b>44</b>

Air Conditioning, Heating and Refrigeration Technology  
Basic Certificate (C35100L1)

The Basic Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair various types of domestic furnaces and air conditioners.

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
AHR	110	Introduction to Refrigeration	2	6	5
AHR	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
<b>Certificate Totals</b>			<b>8</b>	<b>18</b>	<b>16</b>

# Air Conditioning, Heating and Refrigeration Technology

## Intermediate Certificate (C35100L2)

The Intermediate Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair domestic heat pumps, light commercial air conditioning, and light commercial heating units. The material for the EPA's CFC license will be covered, and the exam for this will be given during the program.

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

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			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
AHR	113	Introduction to Cooling	2	4	4
AHR	115	Refrigeration Systems	1	3	2
AHR	125	HVAC Electronics	1	3	2
AHR	130	HVAC Controls	2	2	3
BPR	135	Schematics and Diagrams	2	0	2
WLD	111	Oxy-Fuel Welding	1	3	2
<b>Certificate Totals</b>			<b>9</b>	<b>15</b>	<b>15</b>

# Air Conditioning, Heating and Refrigeration Technology

## Advanced Certificate (C35100L3)

*(Evening Program only)*

Students taking the Advanced Air Conditioning and Heating Certificate program will be able to perform accurate heat load and heat loss calculations for the correct sizing of furnaces and cooling units for homes. They will also be able to design and install air duct systems as to the manufacturer's and building code's specifications. Studies of hot water and steam heating systems, commercial cooling equipment, and ground source heat pumps will further help the students acquire technical knowledge and skills.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
AHR	114	Heat Pump Technology	2	4	4
AHR	210	Residential Building Code-HVAC	1	2	2
AHR	211	Residential Systems Design	2	2	3
AHR	212A	Advanced Comfort Systems I	1	3	2
AHR	212B	Advanced Comfort Systems II	1	3	2
<b>Certificate Totals</b>			<b>7</b>	<b>14</b>	<b>13</b>

# Automotive Systems Technology

*This program of study includes curriculum changes that are pending approval of the North Carolina State Board of Community Colleges.*

The Automotive Systems Technology curriculum prepares individuals for employment as Automotive Service Technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic course work. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

## Automotive Systems Technology Associate in Applied Science Degree (A60160)

Program Summary	Hours
General Education	16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	4
<i>Social/Behavioral Sciences</i>	3
Core Courses	16
Other Courses	36
<b>Program Total</b>	<b>68</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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	116	Engine Repair		2	3	0	3
AUT	116A	Engine Repair Lab		0	3	0	1
AUT	161	Basic Automotive Electricity		4	3	0	5
PHY	122	Applied Physics II		3	2	0	4
(or PHY 110/100A, or CHM 121/121A)							
				<b>11</b>	<b>15</b>	<b>0</b>	<b>17</b>
<b>Second Semester (Spring)</b>							
AUT	114	Safety and Emissions		1	2	0	2
AUT	151	Brake Systems		2	3	0	3
AUT	151A	Brake Systems Lab		0	3	0	1
AUT	163	Advanced Automotive Electricity		2	3	0	3
AUT	181	Engine Performance I		2	3	0	3
ENG	110	Freshman Composition		3	0	0	3
(or ENG 111)							
				<b>10</b>	<b>14</b>	<b>0</b>	<b>15</b>



**Third Semester (Summer)**

AUT	141	Suspension and Steering Systems	2	3	0	3
AUT	141A	Suspension and Steering Sys. Lab	0	3	0	1
AUT	171	Auto Climate Control	2	4	0	4
AUT	281	Advanced Engine Performance	2	2	0	3
			<b>6</b>	<b>12</b>	<b>0</b>	<b>11</b>

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**Fourth Semester (Fall)**

AUT	231	Manual Trans/Axles/D. Trains	2	4	0	4
AUT	231A	Manual Trans/Axles/D. Trains Lab	0	3	0	1
CIS	110	Introduction to Computers	2	2	0	3
COE	112	Co-operative Work Experience	0	0	20	2
		Communications Elective*	3	0	0	3
			<b>7</b>	<b>9</b>	<b>20</b>	<b>13</b>

**Fifth Semester (Spring)**

AUT	221	Automotive Transmissions	2	3	0	3
AUT	221A	Automotive Transmissions Lab	0	3	0	1
COE	122	Co-operative Work Experience	0	0	20	2
		Humanities/Fine Arts Elective	3	0	0	3
		Social/Behavioral Science Elective	3	0	0	3
			<b>8</b>	<b>6</b>	<b>20</b>	<b>12</b>

<b>Program Totals</b>			<b>42</b>	<b>56</b>	<b>40</b>	<b>68</b>
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*\*Select from COM 231, COM 120, or ENG 114*

**Automotive Systems Technology  
Associate in Applied Science Degree - Evening Schedule  
(A60160)**

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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	161	Basic Automotive Electricity	4	3	0	5
			<b>6</b>	<b>7</b>	<b>0</b>	<b>9</b>
<b>Second Semester (Spring)</b>						
AU	114	Safety and Emissions	1	2	0	2
AUT	116	Engine Repair	2	3	0	3
AUT	116A	Engine Repair Lab	0	3	0	1
AUT	163	Advanced Automotive Electricity	2	3	0	3
			<b>5</b>	<b>11</b>	<b>0</b>	<b>9</b>
<b>Third Semester (Summer)</b>						
AUT	171	Auto Climate Control	2	4	0	4
AUT	181	Engine Performance I	2	3	0	3
			<b>4</b>	<b>7</b>	<b>0</b>	<b>7</b>
<b>Fourth Semester (Fall)</b>						
AUT	141	Suspension and Steering Systems	2	3	0	3
AUT	141A	Suspension and Steering Sys. Lab	0	3	0	1
AUT	151	Brake Systems	2	3	0	3
AUT	151A	Brake Systems Lab	0	3	0	1
			<b>4</b>	<b>12</b>	<b>0</b>	<b>8</b>

Engineering and Applied Technology	Fifth Semester (Spring)						
	AUT	281	Advanced Engine Performance	2	2	0	3
	ENG	110	Freshman Composition (or ENG 111)	3	0	0	3
	PHY	122	Applied Physics II (or PHY 110/100A, or CHM 121/121A)	3	2	0	4
				8	4	0	10
	Sixth Semester (Fall)						
	AUT	231	Manual Trans/Axles/D. Trains	2	4	0	4
	AUT	231A	Manual Trans/Axles/D. Trains Lab	0	3	0	1
	CIS	110	Introduction to Computers	2	2	0	3
	COE	112	Co-operative Work Experience Communications Elective*	0	0	20	2
			3	0	0	3	
			7	9	20	13	
Seventh Semester (Spring)							
AUT	221	Automotive Transmissions	2	3	0	3	
AUT	221A	Automotive Transmissions Lab	0	3	0	1	
COE	122	Co-operative Work Experience	0	0	20	2	
			3	0	0	3	
			3	0	0	3	
			8	6	20	12	
Program Totals			42	56	40	68	

*\*Select from COM 231, COM 120, or ENG 114*

**Automotive Systems Technology  
Diploma (D60160)**

<b>Program Summary</b>	<b>Hours</b>
General Education	8
<i>English/Communication</i>	3
<i>Natural Sciences/Mathematics</i>	4
Core Courses	17
Other Courses	18
<b>Program Total</b>	<b>43</b>

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
First Semester (Fall)							
ACA	115	First-Year Seminar		0	2	0	1
AUT	110	Introduction to Automotive Technology		2	2	0	3
AUT	116	Engine Repair		2	3	0	3
AUT	116A	Engine Repair Lab		0	3	0	1
AUT	161	Basic Automotive Electricity		4	3	0	5
PHY	122	Applied Physics II (or PHY 110/100A, or CHM 121/121A)		3	2	0	4
				11	15	0	17

**Second Semester (Spring)**

AUT	114	Safety and Emissions	1	2	0	2
AUT	151	Brake Systems	2	3	0	3
AUT	151A	Brake Systems Lab	0	3	0	1
AUT	163	Advanced Automotive Electricity	2	3	0	3
AUT	181	Engine Performance I	2	3	0	3
ENG	110	Freshman Composition (or ENG 111)	3	0	0	3
			<b>10</b>	<b>14</b>	<b>0</b>	<b>15</b>

**Third Semester (Summer)**

AUT	141	Suspension and Steering Systems	2	3	0	3
AUT	141A	Suspension and Steering Sys. Lab	0	3	0	1
AUT	171	Auto Climate Control	2	4	0	4
AUT	281	Advanced Engine Performance	2	2	0	3
			<b>6</b>	<b>12</b>	<b>0</b>	<b>11</b>

<b>Program Totals</b>			<b>27</b>	<b>41</b>	<b>0</b>	<b>43</b>
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## Automotive Systems Technology Diploma - Evening Schedule (D60160)

			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<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	161	Basic Automotive Electricity	4	3	0	5
			<b>6</b>	<b>7</b>	<b>0</b>	<b>9</b>
<b>Second Semester (Spring)</b>						
AUT	114	Safety and Emissions	1	2	0	2
AUT	116	Engine Repair	2	3	0	3
AUT	116A	Engine Repair Lab	0	3	0	1
AUT	163	Advanced Automotive Electricity	2	3	0	3
			<b>5</b>	<b>11</b>	<b>0</b>	<b>9</b>
<b>Third Semester (Summer)</b>						
AUT	171	Auto Climate Control	2	4	0	4
AUT	181	Engine Performance I	2	3	0	3
			<b>4</b>	<b>7</b>	<b>0</b>	<b>7</b>
<b>Fourth Semester (Fall)</b>						
AUT	141	Suspension and Steering Systems	2	3	0	3
AUT	141A	Suspension and Steering Sys. Lab	0	3	0	1
AUT	151	Brake Systems	2	3	0	3
AUT	151A	Brake Systems Lab	0	3	0	1
			<b>4</b>	<b>12</b>	<b>0</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>						
AUT	281	Advanced Engine Performance	2	2	0	3
ENG	110	Freshman Composition (or ENG 111)	3	0	0	3
PHY	122	Applied Physics II (or PHY 110/100A, or CHM 121/121A)	3	2	0	4
			<b>8</b>	<b>4</b>	<b>0</b>	<b>10</b>
<b>Program Totals</b>			<b>27</b>	<b>41</b>	<b>0</b>	<b>43</b>

Engineering  
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Technology

**Automotive Systems Technology**  
**Basic Automotive Repair Certificate (C60160L5)**

			Weekly		Credit Hrs.
			Class Hrs.	Lab Hrs.	
<b>First Semester (Fall)</b>					
AUT	110	Introduction to Automotive	2	2	3
AUT	151	Brake Systems	2	3	3
AUT	151A	Brake Systems Lab	0	3	1
AUT	161	Basic Automotive Electricity	4	3	5
AUT	163	Advanced Automotive Electricity	2	3	3
<b>Certificate Totals</b>			<b>10</b>	<b>14</b>	<b>15</b>

**Automotive Systems Technology**  
**Drive-Trains Certificate (C60160L2)**

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
First Semester (Fall)					
AUT	110	Introduction to Automotive	2	2	3
AUT	116	Engine Repair	2	3	3
AUT	116A	Engine Repair Lab	0	3	1
AUT	221	Automotive Transmissions	2	3	3
AUT	221A	Automotive Transmissions Lab	0	3	1
AUT	231	Manual Trans/Axles/D. Trains	2	4	4
AUT	231A	Manual Trans/Axles/D. Trains Lab	0	3	1
Certificate Totals			8	21	16

**Automotive Systems Technology**  
**Electrical/Electronics Certificate (C60160L3)**

			Weekly		Credit Hrs.
			Class Hrs.	Lab Hrs.	
<b>First Semester (Fall)</b>					
AUT	110	Introduction to Automotive	2	2	3
AUT	161	Basic Automotive Electricity	4	3	5
AUT	163	Advanced Automotive Electricity	2	3	3
AUT	281	Advanced Engine Performance	2	2	3
<b>Certificate Totals</b>			<b>10</b>	<b>10</b>	<b>14</b>

# Automotive Systems Technology Under-Car Certificate (C60160L4)

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
First Semester (Fall)					
AUT	110	Introduction to Automotive	2	2	3
AUT	114	Safety and Emissions	1	2	2
AUT	141	Suspension and Steering Systems	2	3	3
AUT	141A	Suspension and Steering Sys. Lab	0	3	1
AUT	151	Brake Systems	2	3	3
AUT	152	Brake Systems Lab	0	3	1
Certificate Totals			7	16	13

Engineering  
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## Carpentry

The Carpentry curriculum is designed to train students to construct residential structures using standard building materials and hand and power tools. Carpentry skills and a general knowledge of residential construction methods will also be taught.

Course work includes footings and foundations, framing, interior and exterior trim, cabinetry, blueprint reading, residential planning and estimating, and other related topics. Students will develop skills through hands-on participation.

Graduates should qualify for employment in the residential building construction field as rough carpenters, framing carpenters, roofers, maintenance carpenters, and other related job titles.

## Carpentry - Diploma (D35180)

Program Summary	Hours
General Education	6
<i>English/Communication</i>	3
<i>Natural Sciences/Mathematics</i>	3
Core Courses	29
Other Courses	11
<b>Program Total</b>	<b>46</b>

*Courses requiring a grade of "C" or better: BPR, CAB, CAR and DFT*

			Weekly		
			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
ENG	110	Freshman Composition (or ENG 111, or COM 120)	3	0	3
			9	17	15

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<b>Second Semester (Spring)</b>					
CAR	112	Carpentry II	3	15	8
CAB	111A	Cabinetmaking I	4	3	5
DFT	115	Architectural Drafting	1	2	2
			<b>8</b>	<b>20</b>	<b>15</b>
<b>Third Semester (Summer)</b>					
CAR	115	Residential Planning/Estimating	3	0	3
MAT	101	Applied Mathematics I (or PHY 122, MAT 121)	2	2	3
			<b>5</b>	<b>2</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
CAB	111B	Cabinetmaking I	0	6	2
CAR	113	Carpentry III	3	9	6
DFT	119	Basic CAD	1	2	2
			<b>4</b>	<b>17</b>	<b>10</b>
<b>Program Totals</b>			<b>26</b>	<b>56</b>	<b>46</b>

**Carpentry - Diploma - Evening Schedule (D35180)**

*(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>					
CAR	110A	Introduction to Carpentry	1	0	1
CAR	111A	Carpentry I	2	6	4
BPR	130	Blueprint Reading/Construction	1	2	2
			<b>4</b>	<b>8</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
CAB	111A	Cabinetmaking I	4	3	5
CAR	111B	Carpentry I	1	9	4
			<b>5</b>	<b>12</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
ENG	110	Freshman Composition (or ENG 111, or COM 120)	3	0	3
MAT	101	Applied Mathematics I (or PHY 122, MAT 121)	2	2	3
			<b>5</b>	<b>2</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
CAB	111B	Cabinetmaking I	0	6	2
CAR	110B	Introduction to Carpentry	1	0	1
CAR	112A	Carpentry II	2	3	3
			<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>3</b>	<b>9</b>	<b>6</b>
<b>Program Totals</b>			<b>26</b>	<b>56</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.

Engineering  
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## Civil Engineering Technology Associate in Applied Science Degree (A40140)

Program Summary	Hours
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	29
Other Courses	21
<b>Program Total</b>	<b>68</b>

*Courses requiring a grade of "C" or better: CIV,EGR and SRV*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First Year Seminar (or EGR 110)	0	2	1
EGR	115	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT171/171A)	2	2	3
			<b>8</b>	<b>9</b>	<b>12</b>
<b>Second Semester (Spring)</b>					
CIV	110	Statics/Strength of Materials	2	6	4
CIV	125	Civil/Surveying CAD	1	6	3
ENG	114	Professional Research and Reporting (or COM 120, or COM 231)	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT172/172A)	2	2	3
SRV	110	Surveying I	2	6	4
			<b>10</b>	<b>20</b>	<b>17</b>

Engineering and Applied Technology	<b>Third Semester (Summer)</b>					
	CIV	211	Hydraulics and Hydrology	2	3	3
	SRV	111	Surveying II	2	6	4
			Social/Behavioral Sciences Elective	3	0	3
				<b>7</b>	<b>9</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
	CIV	240	Project Management	2	3	3
				<b>9</b>	<b>18</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	250	Civil Eng Tech Project	1	3	2
			Humanities/Fine Arts Elective	3	0	3
				<b>10</b>	<b>12</b>	<b>14</b>
<b>Program Totals</b>				<b>44</b>	<b>68</b>	<b>68</b>

**Civil Engineering Technology**  
**Associate in Applied Science Degree – Evening Schedule**  
**(A40140)**

*(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	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
MAT	121	Algebra/Trigonometry I (or MAT 171/171 A)	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ACA	115	First Year Seminar (or EGR 110)	0	2	1
MAT	122	Algebra/Trigonometry II (or MAT 172/172 A)	2	2	3
SRV	110	Surveying I	2	6	4
			<b>4</b>	<b>10</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
ENG	111	Expository Writing	3	0	3
			<b>4</b>	<b>6</b>	<b>6</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>



**Fifth Semester (Spring)**

CIV	111	Soils and Foundations	2	3	3
CIV	210	Engineering Materials	1	3	2
ENG	114	Professional Research and Reporting (or COM 120, or COM 231)	3	0	3
			<b>6</b>	<b>6</b>	<b>8</b>

Engineering  
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**Sixth Semester (Summer)**

CIV	211	Hydraulics and Hydrology	2	3	3
			<b>2</b>	<b>3</b>	<b>3</b>

**Seventh Semester (Fall)**

CIV	215	Highway Technology	1	3	2
CIV	220	Basic Structural Concepts	1	3	2
			<b>2</b>	<b>6</b>	<b>4</b>

**Eighth Semester (Spring)**

CIV	212	Environmental Planning	2	3	3
CIV	221	Steel and Timber Design	2	3	3
CIV	230	Construction Estimating	2	3	3
			<b>6</b>	<b>9</b>	<b>9</b>

**Ninth Semester (Summer)**

CIV	240	Project Management	2	3	3
CIV	250	Civil Eng Tech 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 Sciences Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>

<b>Program Totals</b>			<b>44</b>	<b>68</b>	<b>68</b>
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# 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 (A50150)**

Engineering and Applied Technology	<b>Program Summary</b>		<b>Hours</b>
	General Education		15
	<i>English/Communication</i>		6
	<i>Humanities/Fine Arts</i>		3
	<i>Natural Sciences/Mathematics</i>		3
	<i>Social/Behavioral Sciences</i>		3
	Core Courses		18
	Other Courses		41
	<b>Program Total</b>		<b>74</b>

*Courses requiring a grade of "C" or better: ARC, ART, BPR, BUS, CET, CIS, CST, DFT, EGR, GIS, and MEC*

			<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 (or EGR 110)	0	2	1
ARC	111	Intro to Architecture Technology	1	6	3
BPR	111	Blueprint Reading	1	2	2
EGR	125	App. Soft. for Tech. (or CIS 110, or CIS 111)	1	2	2
DFT	151	CAD I	2	3	3
MAC	114	Introduction to Metrology (or MEC 161)	2	0	2
			<b>7</b>	<b>15</b>	<b>13</b>
<b>Second Semester (Spring)</b>					
ARC	112	Construction Materials and Methods	3	2	4
ARC	113	Residential Architecture Technology	1	6	3
CET	111	Computer Upgrade/Repair I	2	3	3
DFT	152	CAD II	2	3	3
MAT	121	Algebra/Trig. I (or MAT 171/171A)	2	2	3
			<b>10</b>	<b>16</b>	<b>16</b>
<b>Third Semester (Summer)</b>					
Technical Elective*			0-3	0-6	1-3
CST	211	Construction Surveying (or SRV 110)	2	3	3
DFT	153	CAD III	2	3	3
ENG	111	Expository Writing	3	0	3
			<b>7-10</b>	<b>6-12</b>	<b>10-12</b>
<b>Fourth Semester (Fall)</b>					
ARC	230	Environmental Systems	3	3	4
DFT	154	Intro to Solid Modeling	2	3	3
DFT	251	Customizing CAD Software	2	2	3
GIS	125	CAD for GIS	2	2	3
Humanities/Fine Arts Elective			3	0	3
			<b>12</b>	<b>10</b>	<b>16</b>

**Fifth Semester (Spring)**

COM	231	Public Speaking (or ENG 114)	3	0	3
DFT	253	CAD Data Management	2	2	3
DFT	259	CAD Project	1	4	3
MEC	110	Introduction to CAD/CAM	1	2	2
		Social/Behavioral Science Elective	3	0	3
		Technical Elective*	0-3	0-6	1-3
			<b>10-13</b>	<b>8-14</b>	<b>15-17</b>
<b>Program Totals</b>			<b>46-52</b>	<b>55-67</b>	<b>70-74*</b>

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*\*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 131, ART 121, ART 171, BPR 121, BUS 230, CET 211, CIV 230, COE 111, DFT 110, DFT 170, DFT 189, and EGR 115.*

**Computer-Aided Drafting Technology  
Associate in Applied Science Degree - Evening Schedule  
(A50150)**

			Weekly Class Hrs.	Lab Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar (or EGR 110)	0	2	1
ARC	111	Intro to Architecture Technology	1	6	3
EGR	125	App. Soft. for Tech. (or CIS 110, or CIS 111)	1	2	2
			<b>2</b>	<b>10</b>	<b>6</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>
<b>Third Semester (Summer)</b>					
ENG	111	Expository Writing	3	0	3
		Social/Behavioral Science Elective	3	0	3
		Technical Elective*	0-3	0-6	1-3
			<b>6-9</b>	<b>0-6</b>	<b>7-9</b>
<b>Fourth Semester (Fall)</b>					
ARC	112	Construction Materials and Methods	3	2	4
MAT	121	Algebra/Trig. I (or MAT 171/171A)	2	2	3
			<b>5</b>	<b>4</b>	<b>7</b>
<b>Fifth Semester (Spring)</b>					
ARC	113	Residential Architecture Technology	1	6	3
DFT	152	CAD II	2	3	3
			<b>3</b>	<b>9</b>	<b>6</b>
<b>Sixth Semester (Summer)</b>					
DFT	153	CAD III	2	3	3
		Humanities/Fine Arts Elective	3	0	3
			<b>4</b>	<b>5</b>	<b>6</b>

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<b>Seventh Semester (Fall)</b>					
ARC	230	Environmental Systems	3	3	4
COM	231	Public Speaking (or ENG 114)	3	0	3
DFT	251	Customizing CAD Software	2	2	3
			<b>8</b>	<b>5</b>	<b>10</b>
<b>Eighth Semester (Spring)</b>					
CST	211	Construction Surveying (or SRV 110)	2	3	3
DFT	154	Intro to Solid Modeling	2	3	3
GIS	125	CAD for GIS	2	2	3
			<b>6</b>	<b>8</b>	<b>9</b>
<b>Ninth Semester (Summer)</b>					
Technical Elective*			0-3	0-6	1-3
DFT	253	CAD Data Management	2	2	3
			<b>2-5</b>	<b>2-8</b>	<b>4-6</b>
<b>Tenth Semester (Fall)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
DFT	259	CAD Project	1	4	3
MEC	110	Introduction to CAD/CAM	1	2	2
			<b>4</b>	<b>9</b>	<b>8</b>
<b>Program Totals</b>			<b>46-52</b>	<b>55-67</b>	<b>70-74*</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 131, ART 121, ART 171, BPR 121, BUS 230, CET 211, CIV 230, COE 111, DFT 110, DFT 170, DFT 189, and EGR 115.*

**Computer-Aided Drafting Technology  
Certificate (C50150L1)**

The purpose of this certificate program is to provide basic computer-aided drafting (CAD) skills. Students learn CAD techniques for producing 2D and 3D technical drawings using different CAD software programs. Accurate and efficient use of the computer and software are emphasized. Students may choose the fourth CAD course from the following options.

			<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>					
DFT	151	CAD I	2	3	3
			<b>2</b>	<b>3</b>	<b>3</b>
<b>Second Semester (Spring)</b>					
DFT	152	CAD II	2	3	3
			<b>2</b>	<b>3</b>	<b>3</b>
<b>Third Semester (Summer)</b>					
DFT	153	CAD III	2	3	3
			<b>2</b>	<b>3</b>	<b>3</b>
<b>Fourth Semester (Fall)</b>					
DFT	251	Customizing CAD Software (or DFT 154 Intro to Solid Modeling)	2	2-3	3
			<b>2</b>	<b>2-3</b>	<b>3</b>
<b>Certificate Totals</b>			<b>8</b>	<b>11-12</b>	<b>12</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.

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

## Computer Engineering Technology Associate in Applied Science Degree (A40160)

Program Summary	Hours
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	21
Other Courses	36
<b>Program Total</b>	<b>75</b>

Courses requiring a grade of "C" or better: CET, COE, EGR, ELC, and ELN

			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	1	2	2
ELC	138	DC Circuit Analysis	2	3	3
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A)**	2	2	3
			<b>10</b>	<b>10</b>	<b>14</b>
<b>Second Semester (Spring)</b>					
CET	211	Computer Upgrade/Repair II	2	3	3
EGR	125	Application Software for Technology	1	2	2
ELC	139	AC Circuit Analysis	2	3	3
MAT	122	Algebra/Trigonometry II (or MAT 172/172A)**	2	2	3
HUM		Humanities Electives	3	0	3
			<b>10</b>	<b>10</b>	<b>14</b>
<b>Third Semester (Summer)</b>					
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 (or PHY 151)**	3	2	4
			<b>9</b>	<b>14</b>	<b>14</b>

Engineering and Applied Technology	Fourth Semester (Fall)					
	CSC	143	Object-Oriented Programming (or CET 161)	2	3	3
	ELC	128	Introduction to PLC	2	3	3
	ELN	133	Digital Electronics	3	3	4
	ELN	137	Electrical Devices & Circuits	4	3	5
			Social/Behavioral Science Elective	3	0	3
				14	12	18
	Fifth Semester (Spring)					
	CET	212	Integrated Manufacturing Systems	1	3	2
	ELN	232	Introduction to Microprocessors	3	3	4
ENG	114	Professional Research and Reporting	3	0	3	
ELN	154	Introduction to Data Communications (or ELN 234)	2	3	3	
			9	9	12	
Program Totals				52	55	75*

*\*The credit hours total includes a minimum of three credit hours to be selected from the following: CET 125, CHM 135, ELC 213, ELC 228, EGR 285, MAT 151, COE 112 with COE 115.*

*\*\*Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

**Computer Engineering Technology  
Associate in Applied Science Degree - Evening Schedule  
(A40160)**

			<b>Weekly</b>		
			<b>Class Hrs.</b>	<b>Lab Hrs.</b>	<b>Credit Hrs.</b>
<b>First Semester (Fall)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
EGR	110	Introduction to Engineering	1	2	2
ELC	138	DC Circuit Analysis	2	3	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A)**	2	2	3
			<b>7</b>	<b>10</b>	<b>11</b>
<b>Second Semester (Spring)</b>					
CET	211	Computer Upgrade/Repair II	2	3	3
ELC	139	AC Circuit Analysis	2	3	3
MAT	122	Algebra/Trigonometry II (or MAT 172/172A)**	2	2	3
			<b>6</b>	<b>8</b>	<b>9</b>
<b>Third Semester (Summer)</b>					
EGR	125	Application Software for Technology	1	2	2
ENG	111	Expository Writing	3	0	3
PHY	131	Physics-Mechanics (or PHY 151)**	3	2	4
			<b>7</b>	<b>4</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>					
ELN	137	Electrical Devices & Circuits	4	3	5
ELN	237	Local Area Networks	2	3	3
			<b>6</b>	<b>6</b>	<b>8</b>

**Fifth Semester (Spring)**

ELN	133	Digital Electronics	3	3	4
ELN	238	Advanced LANs	2	3	3
			<b>5</b>	<b>6</b>	<b>7</b>

**Sixth Semester (Summer)**

CSC	143	Object Oriented Programming (or CET 161)	2	3	3
		Humanities Elective	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>8</b>	<b>3</b>	<b>9</b>

**Seventh Semester (Fall)**

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>

**Eighth Semester (Spring)**

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>

**Ninth Semester (Summer)**

CET	212	Integrated Manufacturing Systems	1	3	2
ENG	114	Prof. Research and Report Writing	3	0	3
			<b>4</b>	<b>3</b>	<b>5</b>

<b>Program Totals</b>			<b>52</b>	<b>55</b>	<b>75*</b>
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*\*The credit hours total includes a minimum of three credit hours to be selected from the following: CET 125, CHM 135, ELC 213, ELC 228, EGR 285, MAT 151, MAT 271, PHY 152, COE 112 with COE 115.*

*\*\*Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

## Computer Engineering Technology

### Personal Computer and Network Maintenance Certificate (C40160L1)

This Training program provides the individual the theory and hands-on experience to become a PC specialist capable of performing maintenance and upgrades on all types of personal computer systems. This program combines the theory of computer and network operation with the practical skills necessary for efficient diagnosis and repair work in the field. The program provides the foundation for further study of networks and new computer-based products.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
CET	111	Computer Upgrade/Repair I	2	3	3
CET	125	Voice and Data Cabling	2	3	3
CET	211	Computer Upgrade/Repair II	2	3	3
ELN	237	Local Area Networks	2	3	3
ELN	238	Advanced LAN	2	3	3
<b>Certificate Totals</b>			<b>10</b>	<b>15</b>	<b>15</b>

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# Construction Management Technology

This curriculum is designed to prepare individuals for careers in the construction management field. Such positions may include project manager, superintendent, estimator, or foreman.

Course work includes safety, planning, scheduling, cost control, productivity, human relations, estimating, and building codes. Students will also gain proficiency in specific construction-related skills.

Graduates should qualify for entry-level positions in the field of construction management.

## Construction Management Technology Associate in Applied Science - Evening Schedule (A35190)

Program Summary	Hours
General Education	16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	31-33
Other Courses	27-25
<b>Program Total</b>	<b>74</b>

Courses requiring a grade of "C" or better: ARC, BPR, CIS, CIV, CMT, COE, and SPA

				Weekly			
				Class	Lab	Clinic	Credit
				Hrs.	Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>							
ACA	115	First-Year Seminar		0	2	0	1
		(or EGR 110)					
		Humanities/Fine Arts Elective		3	0	0	3
		Technical Elective(s)		2	9	0	3
				<b>8</b>	<b>9</b>	<b>0</b>	<b>7</b>
<b>Second Semester (Spring)</b>							
		Social Science Elective		3	0	0	3
		Technical Elective(s)		0	0	0	3
				<b>3</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Third Semester (Summer)</b>							
		Technical Elective(s)		0	0	0	3
				<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Fourth Semester (Fall)</b>							
ENG	111	Expository Writing		3	0	0	3
		(or ENG 110)					
		Technical Elective(s)		0	0	0	3
				<b>3</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Fifth Semester (Spring)</b>							
BPR	130	Blueprint Reading/Construction		1	2	0	2
ENG	114	Professional Research and Reporting		3	0	0	3
		Technical Elective(s)		0	0	0	4
		(or COM 120, or COM 231)		3	0	0	3
				<b>4</b>	<b>2</b>	<b>0</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>							
		Estimation/Code Elective		3	2	0	3
		(May be taken in a previous semester)		<b>3</b>	<b>2</b>	<b>0</b>	<b>3</b>



**Seventh Semester (Fall)**

ARC	112	Construction Materials and Methods	3	2	0	4
CIS	110	Introduction to Computers	2	2	0	3
		(or CIS 111 Basic PC Literacy, or EGR 125)	1	2	0	2
CMT	210	Professional Construction Supervision	3	0	0	3
CMT	212	Total Safety Performance	3	0	0	3
			<b>10-11</b>	<b>4</b>	<b>0</b>	<b>12-13</b>

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**Eighth Semester (Spring)**

CIV	230	Construction Estimating	2	3	0	3
SPA	120	Spanish for the Workplace**	3	0	0	3
			<b>5</b>	<b>3</b>	<b>0</b>	<b>6</b>

**Ninth Semester (Summer)**

COE	111	Co-op Work Experience	0	0	10	1
			<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>

**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>

**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* (or MAT 121 Algebra/Trigonometry I, or PHY 122)	2	2	0	3
			<b>8-9</b>	<b>0-2</b>	<b>0</b>	<b>9</b>

<b>Program Totals</b>			<b>45-6</b>	<b>24-6</b>	<b>10</b>	<b>74</b>
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\*Students who meet the requirements may substitute MAT 171/171A or MAT 151/151A for the math requirement.

\*\*Students who meet the requirements may substitute SPA 111 for SPA 120 with department chair approval.

*Estimation/Code Electives: Students must select one course from:*

*AHR 210, CAR 114, ARC 131, and ELC 118; and either: CAR 115 or ELC 121.*

*Technical Electives: At least 17 Semester Hours Credit selected from one of the following areas of specialization\*\*:*

*- AHR 110, AHR 112, AHR 113, AHR 114, AHR 115, AHR 120, AHR 125, AHR 130  
- CAR 111, CAR 112, CAR 113*

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

*- ELC 112 or ELC 113, ELC 115, ELC 117, ELC 118, ELC 128, ELC 132, ELC 213*

*- WLD 111, WLD 112, WLD 115, WLD 116, WLD 141*

*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.*

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**Construction Management Technology  
Certificate - Evening Schedule (C35190L1)**

The Construction Management Technology certificate is designed for the skilled tradesman who is experienced in the construction industry and has the desire to advance to construction management. Recent high school graduates will also be accepted.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
BPR	130	Blueprint Reading/Construction	1	2	2
CMT	210	Professional Construction Supervision	3	0	3
CMT	212	Total Safety Performance	3	0	3
CMT	214	Planning and Scheduling	3	0	3
CMT	216	Costs and Productivity	3	0	3
CMT	218	Human Relations Issues	3	0	3
<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 (A35220)**

*(Evening Program Only)*

<b>Program Summary</b>	<b>Hours</b>
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	28
Other Courses	26
<b>Program Total</b>	<b>72</b>

*Courses requiring a grade of "C" or better: COE, EGR, ELC, and ELN*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
EGR	110	Introduction to Engineering Tech.	1	2	2
ELC	112AB	DC/AC Electricity (or ELC 138)	2	3	3
ELC	113	Basic Wiring I	2	6	4
ENG	111	Expository Writing (or ENG 110)	3	0	3
MAT	121	Algebra/Trigonometry	2	2	3
			<b>10</b>	<b>13</b>	<b>15</b>
<b>Second Semester (Spring)</b>					
EGR	125	Application Software for Tech	1	2	2
ELC	112BB	DC/AC Electricity (or ELC 139)	1	3	2
ELC	115	Industrial Wiring	2	6	4
ELN	152	Fabrication Techniques	1	3	2
MAT	122	Algebra/Trigonometry II (or Nat Science/Mathematics Elective)	2	2	3
			<b>7</b>	<b>16</b>	<b>13</b>
<b>Third Semester (Summer)</b>					
ELC	117	Motors and Controls	2	6	4
PHY	131	Physics-Mechanics	3	2	4
		Humanities Elective	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>11</b>	<b>8</b>	<b>14</b>
<b>Fourth Semester (Fall)</b>					
ELC	128	Introduction to PLC	2	3	3
ELN	133	Digital Electronics	3	3	4
ELN	137	Electronic Devices & Circuits	4	3	5
ENG	114	Prof Research and Report Writing (or COM 120, or COM 231)	3	0	3
			<b>12</b>	<b>9</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>					
ELC	118	National Electrical Code	1	2	2
ELC	213	Instrumentation	3	2	4
ELC	228	PLC Applications	2	6	4
ELC	229	Application Project (or COE 112)	1	3	2
HYD	110	Hydraulics/Pneumatics	2	2	3
			<b>9</b>	<b>15</b>	<b>15</b>
<b>Program Totals</b>			<b>49</b>	<b>61</b>	<b>72</b>

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## Electrical/Electronics Technology

### Associate in Applied Science Degree - Evening Schedule (A35220)

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			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>					
EGR	110	Introduction to Engineering Tech.	1	2	2
ELC	112AB	DC/AC Electricity (or ELC 138)**	2	3	3
MAT	121	Algebra/Trigonometry I	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ELC	112BB	DC/AC Electricity (or ELC 139)**	1	3	2
ELN	152	Fabrication Techniques	1	3	2
MAT	122	Algebra/Trigonometry II (or Nat Science/Mathematics Elective)	2	2	3
			<b>4</b>	<b>8</b>	<b>7</b>
<b>Third Semester (Summer)</b>					
EGR	125	Application Software for Tech	1	2	2
ENG	111	Expository Writing (or ENG 110)	3	0	3
PHY	131	Physics-Mechanics	3	2	4
			<b>7</b>	<b>4</b>	<b>9</b>
<b>Fourth Semester (Fall)</b>					
ELC	113	Basic Wiring I	2	6	4
ELN	137	Electronic Devices & Circuits	4	3	5
			<b>6</b>	<b>9</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
ELC	115	Industrial Wiring	2	6	4
ELN	133	Digital Electronics	3	3	4
			<b>5</b>	<b>9</b>	<b>8</b>
<b>Sixth Semester (Summer)</b>					
ELC	118	National Electrical Code	1	2	2
ELC	213	Instrumentation	3	2	4
		Social Science Elective	3	0	3
			<b>7</b>	<b>4</b>	<b>9</b>
<b>Seventh Semester (Fall)</b>					
ELC	117	Motors and Controls	2	6	4
ELC	128	Introduction to PLC	2	3	3
		Humanities Elective	3	0	3
			<b>7</b>	<b>9</b>	<b>10</b>
<b>Eight Semester (Spring)</b>					
ELC	228	PLC Applications	2	6	4
HYD	110	Hydraulics/Pneumatics	2	2	3
			<b>4</b>	<b>8</b>	<b>7</b>
<b>Ninth Semester (Summer)</b>					
ELC	229	Application Project (or COE 112)	1	3	2
ENG	114	Prof. Research and Report Writing (or COM 120, or COM 231)	3	0	3
			<b>4</b>	<b>3</b>	<b>5</b>
<b>Program Totals</b>			<b>49</b>	<b>61</b>	<b>72</b>

# Electrical/Electronics Technology

## Diploma - Evening Schedule (D35220)

(Evening Program Only)

Program Summary	Hours
General Education	6
English/Communication	3
Natural Sciences/Mathematics	3
Core Courses	17
Other Courses	13
<b>Program Total</b>	<b>36</b>

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Courses requiring a grade of "C" or better: EGR, ELC and ELN

			Weekly Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ELC	112AB	DC/AC Electricity (or ELC 138)**	2	3	3
MAT	101	Applied Mathematics I (or MAT 121*)	2	2	3
			<b>4</b>	<b>5</b>	<b>6</b>
<b>Second Semester (Spring)</b>					
ELC	112BB	DC/AC Electricity (or ELC 139)**	1	3	2
ELN	152	Fabrication Techniques	1	3	2
			<b>2</b>	<b>6</b>	<b>4</b>
<b>Third Semester (Summer)</b>					
EGR	125	Application Software for Tech	1	2	2
ENG	102	Applied Communications II (or ENG 111*)	3	0	3
			<b>4</b>	<b>2</b>	<b>5</b>
<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>22</b>	<b>38</b>	<b>36</b>

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

\*\*Students who meet the requirements may substitute ELC 138 & ELC 139 for ELC 112 with department chair approval.

**Electrical/Electronics Technology**  
**Electrical Wiring Certificate - Evening Schedule (C35220L1)**

The Electrical Wiring Certificate program teaches the student the concepts and skills needed to install and repair residential, commercial, and industrial wiring systems. Preparation for State and local licenses are achieved through laboratory and classroom studies that focus on the National Electrical Code.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
ELC	112	DC/AC Electricity**	3	6	5
ELC	113	Basic Wiring I	2	6	4
ELC	115	Industrial Wiring	2	6	4
<b>Certificate Totals</b>			<b>7</b>	<b>18</b>	<b>13</b>

**Electrical/Electronics Technology**  
**Instrumentation and Control Certificate (C35220L2)**

The Instrumentation and Control Certificate program teaches the student the concepts and skills needed to program, install, calibrate and service systems that acquire and record industrial and environmental data.

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
ELC	128	Introduction to PLC	2	3	3
ELC	138	DC Circuit Analysis	2	3	3
ELC	139	AC Circuit Analysis	2	3	3
ELC	213	Instrumentation	3	2	4
<b>Certificate Totals</b>			<b>9</b>	<b>11</b>	<b>13</b>

**Electronics Engineering Technology**

The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, communication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student's ability to analyze and troubleshoot electronic systems. Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

# **Electronics Engineering Technology** **Associate in Applied Science Degree (A40200)**

Program Summary		Hours	
General Education		18	Engineering and Applied Technology
<i>English/Communication</i>		6	
<i>Humanities/Fine Arts</i>		3	
<i>Natural Sciences/Mathematics</i>		6	
<i>Social/Behavioral Sciences</i>		3	
Core Courses		18	
Other Courses		35	
<b>Program Total</b>		<b>71</b>	

*Courses requiring a grade of "C" or better: COE, ELC, and ELN*

			Weekly	Lab	Credit
			Class	Hrs.	Hrs.
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
ELC	138	DC Circuit Analysis	2	3	3
EGR	110	Introduction to Engineering Tech.	1	2	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT171/171A**)	2	2	3
			<b>10</b>	<b>10</b>	<b>14</b>
<b>Second Semester (Spring)</b>					
DFT	151	CAD I	2	3	3
EGR	125	Application Software for Tech	1	2	2
ELC	139	AC Circuit Analysis	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>
<b>Third Semester (Summer)</b>					
ELC	117	Motors and Controls	2	6	4
PHY	131	Physics-Mechanics (or PHY 151**)	3	2	4
		Humanities Elective	3	0	3
		Social/Behavioral Science Elective	3	0	3
			<b>11</b>	<b>8</b>	<b>14</b>
<b>Fourth Semester (Fall)</b>					
ELC	128	Introduction to PLC	2	3	3
ELN	137	Electronic Devices & Circuits	4	3	5
ELN	133	Digital Electronics	3	3	4
ENG	114	Prof. Research and Report Writing	3	0	3
			<b>12</b>	<b>9</b>	<b>15</b>
<b>Fifth Semester (Spring)</b>					
ELN	232	Introduction to Microprocessors	3	3	4
ELN	234	Communications Systems	3	3	4
			<b>6</b>	<b>6</b>	<b>8</b>
<b>Program Totals</b>			<b>48</b>	<b>46</b>	<b>71*</b>

*\*Includes a minimum of six hours of major electives to be selected from: CET 125, CSC 143, CET 211, CET 212, CHM 135, EGR 285, ELC 213, ELC 228, ELC 229, ELC 213, ELC 228, ELC 229, ELN 237, MAT 151, MAT 151A, MAT 271, PHY 152, COE 112 with COE 115.*

*\*\*Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

**Electronics Engineering Technology  
Associate in Applied Science Degree - Evening Schedule  
(A40200)**

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>					
EGR	110	Introduction to Engineering Tech.	1	2	2
ELC	138	DC Circuit Analysis	2	3	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A**)	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ELC	139	AC Circuit Analysis	2	3	3
ELN	152	Fabrication Techniques	1	3	2
MAT	122	Algebra/Trigonometry II (or MAT 172/172A**)	2	2	3
			<b>5</b>	<b>8</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
CET	111	Computer Upgrade/Repair I	2	3	3
ENG	111	Expository Writing	3	0	3
			<b>5</b>	<b>3</b>	<b>6</b>
<b>Fourth Semester (Fall)</b>					
ELN	137	Electronic Devices & Circuits	4	3	5
PHY	131	Physics - Mechanics (or PHY 151**)	3	2	4
			<b>7</b>	<b>5</b>	<b>9</b>
<b>Fifth Semester (Spring)</b>					
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>
<b>Sixth Semester (Summer)</b>					
Social/Behavioral Science Elective			3	0	3
			<b>3</b>	<b>0</b>	<b>3</b>
<b>Seventh Semester (Fall)</b>					
ELC	117	Motors and Controls	2	6	4
ELN	234	Communication Systems	3	3	4
			<b>5</b>	<b>9</b>	<b>8</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>



**Ninth Semester (Summer)**

ENG 114	Prof Research and Report Writing	3	0	3
	Humanities Elective	3	0	3
		<b>6</b>	<b>0</b>	<b>6</b>
<b>Program Totals</b>		<b>47</b>	<b>46</b>	<b>71*</b>

Engineering  
and Applied  
Technology

*\*Includes a minimum of six hours of major electives to be selected from: CET 125, CSC 143, CET 211, CET 212, CHM 135, EGR 285, ELC 213, ELC 228, ELC 229, ELC 213, ELC 228, ELC 229, ELN 237, MAT 151, MAT 151A, MAT 271, PHY 152, COE 112 with COE 115.*

*\*\*Recommended courses for students seeking transfer for bachelor's degree in engineering technology.*

## **Heavy Equipment and Transport Technology (Diesel)**

The Heavy Equipment and Transport Technology curriculum is designed to prepare individuals with the knowledge and skills needed to service, troubleshoot, and repair medium and heavy duty vehicles.

The course work includes the purpose, construction features, and principles of operation of medium and heavy duty vehicles.

Graduates of the curriculum should qualify for entry level employment opportunities in a dealership, fleet shop, or independent garage as a technician. Graduates that have met the work experience requirement should also be prepared to take the ASE certification exam.

## **Heavy Equipment and Transport Technology Associate in Applied Science - Evening Degree Completion Schedule (A60240)**

*(Evening Only Program)*

To be taken **after** completion of Diploma (day) program

<b>Program Summary</b>	<b>Hours</b>
General Education	16
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	4
<i>Social/Behavioral Sciences</i>	3
Core Courses	13
Other Courses	37
<b>Program Total</b>	<b>66</b>

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

Engineering  
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			Weekly			
			Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
<b>Daytime HEATT Diploma</b>						
						46
<b>Fourth Semester (Fall)</b>						
COE	112	Co-op Work Experience I	0	0	20	2
HET	114A	Powertrains	2	3	0	3
		Social/Behavioral Science Elective	3	0	0	3
			<b>5</b>	<b>3</b>	<b>20</b>	<b>8</b>
<b>Fifth Semester (Spring)</b>						
COE	122	Co-op Work Experience II	0	0	20	2
		Communications Elective*	3	0	0	3
HET	114B	Powertrains	1	3	0	2
HET	128	Medium/Heavy Duty Tune-Up	1	2	0	2
		Humanities/Fine Arts Elective	3	0	0	3
			<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>66</b>

\* Select from COM 231, COM 120, or ENG 114

Heavy Equipment and Transport Technology  
Diploma (D60240)

Program Summary		Hours
General Education		7
English/Communication		3
Natural Sciences/Mathematics		4
Core Courses		13
Other Courses		26
<b>Program Total</b>		<b>46</b>

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

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<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
PHY	122	Applied Physics II (or MAT 121)	3	2	4
			<b>10</b>	<b>18</b>	<b>17</b>
<b>Second Semester (Spring)</b>					
ENG	102	Applied Communications II (or ENG 110, or ENG 111)	3	0	3
CIS	110	Introduction to Computers	2	2	3
HET	112	Diesel Electrical System	3	6	5
HET	115	Electronic Engines	2	3	3
HET	119	Mechanical Transmissions	2	2	3
WLD	112	Basic Welding Processes	1	3	2
			<b>13</b>	<b>16</b>	<b>19</b>

**Third Semester (Summer)**

HET	116	A/C/Diesel Equipment	1	2	2
HET	231	Medium-Heavy Duty Brake Systems	1	3	2
HET	233	Suspension and Steering	2	4	4
MAC	118	Machine Shop Basics	1	3	2
			<b>5</b>	<b>12</b>	<b>10</b>
<b>Program Totals</b>			<b>28</b>	<b>46</b>	<b>46</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 (C60240L1)

			<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>					
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>3</b>	<b>6</b>	<b>5</b>
<b>Third Semester (Summer)</b>					
HET	231	Med/Heavy Brake Systems	1	3	2
			<b>1</b>	<b>3</b>	<b>2</b>
<b>Program Totals</b>			<b>10</b>	<b>21</b>	<b>17</b>

## Industrial Systems Technology

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. Instruction includes theory and skill training needed for inspecting, testing, troubleshooting, and diagnosing industrial systems.

Students will learn multi-craft technical skills in blueprint reading, mechanical systems maintenance, electricity, hydraulics/pneumatics, welding, machining or fabrication, and includes various diagnostic and repair procedures. Practical application in these industrial systems will be emphasized and additional advanced course work may be offered.

Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

Industrial Systems Technology  
Associate in Applied Science Degree (A50240)

	Program Summary	Hours
Engineering and Applied Technology	General Education	16
	English/Communication	6
	Humanities/Fine Arts	3
	Natural Sciences/Mathematics	4
	Social/Behavioral Sciences	3
	Core Courses	18
	Other Courses	37
	Program Total	71

Courses requiring a grade of "C" or better: AHR, ATR, BPR, DFT, EGR, ELC, HYD, ISC, MAC, MEC, MNT and WLD

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
First Semester (Fall)					
AHR	112	Heating Technology	2	4	4
AHR	120	HVACR Maintenance	1	3	2
BPR	111	Blueprint Reading	1	2	2
EGR	110	Introduction to Engineering Tech.	1	2	2
ELC	111	Introduction to Electricity (or ELC 139)	2	2	3
MNT	110	Introduction to Maintenance Procedures	1	3	2
			8	16	15
Second Semester (Spring)					
EGR	125	App. Software for Technicians	1	2	2
ENG	110	Freshman Composition (or ENG 111)	3	0	3
MAC	114	Introduction to Metrology	2	0	2
MEC	111	Machining Processing I (or MAC 111)	1	4	3
MNT	111	Maintenance Practices	2	2	3
WLD	112	Basic Welding Processes	1	3	2
			10	11	15
Third Semester (Summer)					
BPR	135	Schematics and Diagrams	2	0	2
ELC	117	Motors and Controls	2	6	4
WLD	212	Inert Gas Welding	1	3	2
			5	9	8
Fourth Semester (Fall)					
DFT	119	Basic CAD	1	2	2
ELC	128	Introduction to PLC	2	3	3
ISC	121	Environmental Health and Safety	3	0	3
		Major Elective*	0	0	3
		Social/Behavioral Science Elective	3	0	3
PHY	122	Applied Physics (or PHY 110/PHY 110A, or CHM 121/CHM 121A)	3	2	4
			12	7	18

**Fifth Semester (Spring)**

ATR	112	Introduction to Automation	2	3	3
COM	231	Public Speaking (or COM 120, or ENG 114)	3	0	3
HYD	110	Hydraulics and Pneumatics	2	3	3
		Major Elective*	0	0	3
		Humanities/Fine Arts Elective	3	0	3
			<b>10</b>	<b>6</b>	<b>15</b>
<b>Program Totals</b>			<b>45</b>	<b>49</b>	<b>71</b>

Engineering  
and Applied  
Technology

*\*Major electives: Select two courses from: COE 113, ELC 115, HET 118, HET 125, MEC 130, MEC 180.*

**Industrial Systems Technology  
Associate in Applied Science Degree - Evening Schedule  
(A50240)**

			<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	110	Introduction to Engineering Tech.	1	2	3
ELC	111	Introduction to Electricity	2	2	3
MNT	110	Intro to Maintenance Procedures	1	3	2
			<b>4</b>	<b>7</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
ATR	112	Intro to Automation	2	3	3
BPR	111	Blueprint Reading	1	3	2
WLD	112	Basic Welding Processes	1	3	2
			<b>4</b>	<b>9</b>	<b>7</b>
<b>Third Semester (Summer)</b>					
BPR	135	Schematics and Diagrams	2	0	2
ENG	110	Freshman Composition	3	0	3
MNT	111	Maintenance Practices	2	2	3
			<b>7</b>	<b>2</b>	<b>8</b>
<b>Fourth Semester (Fall)</b>					
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>
<b>Fifth Semester (Spring)</b>					
EGR	125	Application Software for Technicians	1	2	2
ISC	121	Environmental Health & Safety	3	0	3
MAC	114	Introduction to Metrology	2	0	2
WLD	212	Inert Gas Welding	1	3	2
			<b>7</b>	<b>5</b>	<b>9</b>
<b>Sixth Semester (Summer)</b>					
DFT	119	Basic CAD	1	2	2
PHY	122	Applied Physics (or PHY 110/PHY 110A, or CHM 121/CHM 121A)	3	2	4
			<b>4</b>	<b>4</b>	<b>6</b>

Engineering  
and Applied  
Technology

<b>Seventh Semester (Fall)</b>					
AHR	112	Heating Technology	2	4	4
COM	231	Public Speaking (or COM 120, or ENG 114)	3	0	3
		Major Elective*	0	0	3
			<b>5</b>	<b>4</b>	<b>10</b>
<b>Eighth Semester(Spring)</b>					
AHR	120	HVACR Maintenance	1	3	2
MEC	111	Machining Processing I (or MAC 111)	1	4	3
		Major Elective*	0	0	3
			<b>4</b>	<b>7</b>	<b>8</b>
<b>Ninth Semester(Summer)</b>					
HYD	110	Hydraulics and Pneumatics	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>45</b>	<b>49</b>	<b>71</b>

*\*Major Electives: Select two courses from the following: COE 113, ELC 115, HET 118, HET 125, MEC 130, MEC 180.*

**Industrial Systems Technology**  
**Basic Maintenance Certificate (C50240L1)**

The Industrial Systems Basic program teaches the student the concepts and skills needed to service and repair various types of mechanical equipment.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
BPR	111	Blueprint Reading	1	2	2
HYD	110	Hydraulics and Pneumatics	2	3	3
ISC	121	Environmental Health & Safety	3	0	3
ELC	111	Intro to Electricity (or ELC 139)	2	2	3
MNT	110	Intro to Maintenance Procedures	1	3	2
WLD	112	Basic Welding Processes	1	3	2
<b>Certificate Totals</b>			<b>10</b>	<b>13</b>	<b>15</b>

**Industrial Systems Technology**  
**Metal Fabrication Certificate (C50240L2)**

The Industrial Systems Basic program teaches the student the concepts and skills needed to fabricate simple fixtures and equipment.

			<b>Weekly</b>		
			<b>Class</b>	<b>Lab</b>	<b>Credit</b>
			<b>Hrs.</b>	<b>Hrs.</b>	<b>Hrs.</b>
BPR	111	Blueprint Reading	1	2	2
ISC	121	Environmental Health & Safety	3	0	3
MEC	111	Machine Processes I (or MAC 111)	1	4	3
WLD	112	Basic Welding Processes	1	3	2
WLD	212	Inert Gas Welding	1	3	2
<b>Certificate Totals</b>			<b>7</b>	<b>12</b>	<b>12</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.

Engineering  
and Applied  
Technology

## Machining Technology Associate in Applied Science Degree (A50300)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	26
Other Courses	31
<b>Program Total</b>	<b>72</b>

Courses requiring a grade of "C" or better: BPR, MAC, MEC, and WLD

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<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 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	110	Freshman Composition (or ENG 111)	3	0	3
MAC	112	Machining Technology II	2	12	6
MAC	122	CNC Turning	1	3	2
MAC	124	CNC Milling	1	3	2
			<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>

Engineering and Applied Technology	Fourth Semester (Fall)					
	MAC	226	CNC EDM Machining	1	3	2
	MEC	231	CAM I	1	4	3
	MAT	121	Algebra/Trigonometry (or PHY 122)	2	2	3
			Humanities Elective	3	0	3
			7	9	11	
	Fifth Semester (Spring)					
	MAC	224	Advanced CNC Milling	1	3	2
	MAC	222	Advanced CNC Turning	1	3	2
	MAC	245	Mold Construction I	2	6	4
	MEC	232	CAM II	1	4	3
	WLD	112	Basic Welding Processes	1	3	2
				6	19	13
	Sixth Semester (Summer)					
	MAC	241	Jigs and Fixtures I	2	6	4
	MAC	247	Production Tooling	2	0	2
				4	6	6
	Program Totals			40	86	72

**Machining Technology**  
**Associate in Applied Science Degree – Evening Schedule**  
**(A50300)**

				<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>						
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>
<b>Second Semester (Spring)</b>						
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>
<b>Third Semester (Summer)</b>						
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>
<b>Fourth Semester (Fall)</b>						
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	110	Freshman Composition (or ENG 111)	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>

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**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>

**Seventh Semester (Fall)**

MAC	245	Mold Construction I	2	6	4
MAC	247	Production Tooling	2	0	2
			<b>4</b>	<b>6</b>	<b>6</b>

**Eighth Semester (Spring)**

MAC	226	CNC EDM	1	3	2
WLD	112	Basic Welding Processes	1	3	2
			<b>2</b>	<b>6</b>	<b>4</b>

**Ninth Semester (Summer)**

MAC	224	Advanced CNC Milling	1	3	2
			<b>1</b>	<b>3</b>	<b>2</b>

**Tenth Semester (Fall)**

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>

**Eleventh Semester (Spring)**

MEC	232	CAM II	1	4	3
		Humanities Elective	3	0	3
			<b>4</b>	<b>4</b>	<b>6</b>

**Twelfth Semester (Summer)**

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>40</b>	<b>86</b>	<b>72</b>
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*The credit hours total includes an elective chosen from either COE 112 or MAC 229.*

**Machining Technology - Diploma (D50300)**

Program Summary	Hours
General Education	9
<i>English/Communication</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	26
Other Courses	7
<b>Program Total</b>	<b>42</b>

*Courses requiring a grade of "C" or better: BPR and MAC*

				Weekly		
				Class Hrs.	Lab Hrs.	Credit Hrs.
Engineering and Applied Technology	<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</b>	<b>18</b>	<b>16</b>
	<b>Second Semester (Spring)</b>					
	BPR	121	Blueprint Reading II	1	2	2
	COM	231	Public Speaking	3	0	3
	ENG	110	Freshman Composition (or ENG 111)	3	0	3
	MAC	112	Machining Technology II	2	12	6
	MAC	122	CNC Turning	1	3	2
	MAC	124	CNC Milling	1	3	2
				<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>Program Totals</b>				<b>23</b>	<b>52</b>	<b>42</b>

Machining Technology - Diploma - Evening Schedule (D50300)

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
<b>First Semester (Fall)</b>					
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>
<b>Second Semester (Spring)</b>					
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>
<b>Third Semester (Summer)</b>					
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>
<b>Fourth Semester (Fall)</b>					
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	110	Freshman Composition (or ENG 111)	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>

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**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>

<b>Program Total</b>			<b>23</b>	<b>52</b>	<b>42</b>
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**Machining Technology  
Basic Certificate (C50300L1)**

This certificate program is designed to develop fundamental skills in the operation of machine tools including drilling, turning, milling and grinding. Training in basic measuring, layout, and blueprint reading is also provided.

Completers will be prepared for employment as entry-level machine operators/machinist apprentices in area manufacturing firms. Courses in this program can be transferred directly into the Machining Technology Associate Degree curriculum.

			<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>					
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 (C50300L1)**

			<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>					
MAC	111	Machining Technology	2	12	6
			<b>2</b>	<b>12</b>	<b>6</b>
<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>

**Machining Technology  
CNC Programming Certificate (C50300L2)**

The purpose of this certificate program is to introduce basic CAD/CAM programming skills to individuals who want to learn computer numerical control (CNC) machining. Students will learn 2D and 3D programming as well as 2 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	121	Introduction to CNC	2	0	2
MAC	151	Machining Calculations	3	0	3
			<b>5</b>	<b>0</b>	<b>5</b>
<b>Second Semester (Spring)</b>					
MAC	122	CNC Turning	1	3	2
MAC	124	CNC Milling	1	3	2
MEC	231	CAM I	1	4	3
			<b>3</b>	<b>10</b>	<b>7</b>
<b>Certificate Totals</b>			<b>8</b>	<b>10</b>	<b>12</b>

**Machining Technology  
CNC Programming Certificate - Evening Schedule (C50300L2)**

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
MAC	121	Introduction to CNC	2	0	2
MAC	151	Machining Calculations	3	0	3
			<b>5</b>	<b>0</b>	<b>5</b>
<b>Second Semester (Spring)</b>					
MAC	122	CNC Turning	1	3	2
MAC	124	CNC Milling	1	3	2
MEC	231	CAM I	1	4	3
			<b>3</b>	<b>10</b>	<b>7</b>
<b>Certificate Totals</b>			<b>8</b>	<b>10</b>	<b>12</b>

# Mechanical Engineering Technology

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. This program also maximizes transfer credit to certain four-year university engineering and/or industrial programs. Typical assignments would include assisting in the design, development, testing and repair of mechanical equipment. Emphasis is placed on the integration of theory and mechanical principles.

Engineering  
and Applied  
Technology

Coursework includes applied mechanics, manufacturing methods and processes, computer usage, computer-aided drafting, mathematics, physics, and oral and written communications. The courses will stress critical thinking, planning, and problem solving.

Graduates of the curriculum will find employment opportunities in the diversified branches of the mechanical field. Mechanical engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

## Mechanical Engineering Technology Associate in Applied Science Degree (A40320)

Program Summary	Hours
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	19
Other Courses	39
<b>Program Total</b>	<b>76</b>

*Courses requiring a grade of "C" or better: ATR, CIV, COE, DFT, EGR, ELC, HYD, ISC, MAT, MEC, PLA and WLD*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
DFT	151	CAD	2	3	3
EGR	110	Intro to Engineering Technology	1	2	2
ENG	110	Freshman Composition* (or ENG 111)	3	0	3
ISC	121	Environmental Health & Safety	3	0	3
MAT	121	Algebra/Trigonometry I*	2	2	3
MEC	180	Engineering Materials	2	3	3
			<b>13</b>	<b>10</b>	<b>17</b>
<b>Second Semester (Spring)</b>					
COM	231	Public Speaking	3	0	3
DFT	154	Introduction to Solid Modeling	2	3	3
EGR	125	Applied Software for Technicians	1	2	2
MAT	122	Algebra/Trigonometry II*	2	2	3
MEC	110	Introduction to CAD/CAM	1	2	2
MEC	111	Machine Processes I (or MAC 111)	1	4	3
			<b>10</b>	<b>13</b>	<b>16</b>

Engineering  
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Technology

Third Semester (Summer)					
MAT	223	Applied Calculus	2	2	3
MEC	130	Mechanisms	2	2	3
WLD	212	Inert Gas Welding	1	3	2
		Humanities/Fine Arts Elective	3	0	3
			<b>8</b>	<b>7</b>	<b>11</b>
Fourth Semester (Fall)					
CIV	110	Statics and Strength of Materials	2	6	4
ELC	111	Introduction to Electricity	2	2	3
		(or ELC 139)			
		Mechanical Engineering Elective			3
MEC	161	Manufacturing Process I	3	0	3
PLA	120	Injection Molding	2	3	3
			<b>10</b>	<b>5</b>	<b>15</b>
Fifth Semester (Spring)					
ATR	112	Introduction to Automation	2	3	3
ELC	213	Instrumentation	3	2	4
HYD	110	Hydraulics/Pneumatics	2	3	3
MEC	260	Fundamentals of Machine Design	2	3	3
		Social/Behavioral Elective	3	0	3
			<b>11</b>	<b>17</b>	<b>17</b>
<b>Program Totals</b>			<b>52</b>	<b>52</b>	<b>76</b>

*Mechanical Engineering Elective: Select one course from: COE 113, EGR 130, EGR 285, ELC 128, ISC 132, MAT 151/151A.*

*\*Transfer students should take ENG 111, MAT 171/171A, MAT 172/172A.*

*Please see the Mechanical Engineering Technology Chairperson.*

*Students transferring to a 4-year institution are encouraged to take the following four courses in addition to those listed above: ENG 114, CHM 135 or CHM 151, PHY 131 or PHY 151, MAT 151/151A.*

## Mechanical Engineering Technology Manufacturing Certificate (C40320L1)

The Mechanical Engineering Technology Manufacturing Certificate program is designed to develop the fundamental knowledge of the different machining and manufacturing processes. The student will learn to utilize 3-dimensional modeling software to draw, design, and create manufactured parts.

			Weekly		
			Class Hrs.	Lab Hrs.	Credit Hrs.
DFT	154	Introduction to Solid Modeling	2	3	3
MEC	110	Introduction to CAD/CAM	1	2	2
MEC	111	Machine Processes 1	1	4	3
		(or MAC 111)			
MEC	161	Manufacturing Processes I	3	0	3
MEC	180	Engineering Materials	2	3	3
<b>Certificate Total</b>			<b>9</b>	<b>12</b>	<b>14</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.

Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, CPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Professional Land Surveyor in North Carolina.

Engineering  
and Applied  
Technology

## Surveying Technology Associate in Applied Science Degree (A40380)

Program Summary	Hours
General Education	18
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	6
<i>Social/Behavioral Sciences</i>	3
Core Courses	32
Other Courses	20
<b>Program Total</b>	<b>70</b>

Courses requiring a grade of "C" or better: CIV,EGR, GIS and SRV

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar (or EGR 110)	0	2	1
EGR	115	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT 171/171A)	2	2	3
			<b>8</b>	<b>9</b>	<b>12</b>
<b>Second Semester (Spring)</b>					
CIV	110	Statics/Strength of Materials	2	6	4
CIV	125	Civil/Surveying CAD	1	6	3
ENG	114	Professional Research and Reporting (or COM 120, or COM 231)	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT 172/172A)	2	2	3
SRV	110	Surveying I	2	6	4
			<b>10</b>	<b>20</b>	<b>17</b>

Engineering and Applied Technology	<b>Third Semester (Summer)</b>					
	CIV	211	Hydraulics and Hydrology	2	3	3
	SRV	111	Surveying II	2	6	4
			Social/Behavioral Sciences Elective	3	0	3
				<b>7</b>	<b>9</b>	<b>10</b>
	<b>Fourth Semester (Fall)</b>					
	CIV	111	Soils and Foundations	2	3	3
	CIV	215	Highway Technology	1	3	2
	SRV	210	Surveying III	2	6	4
	SRV	220	Surveying Law	2	2	3
	SRV	240	Topo/Site Surveying	2	6	4
				<b>9</b>	<b>20</b>	<b>16</b>
	<b>Fifth Semester (Spring)</b>					
	GIS	112	Introduction to GPS	2	2	3
	SRV	230	Subdivision Planning	1	6	3
	SRV	250	Advanced Surveying	2	6	4
	SRV	260	Field & Office Practices	1	3	2
			Humanities/Fine Arts Elective	3	0	3
				<b>9</b>	<b>17</b>	<b>15</b>
	<b>Program Totals</b>			<b>43</b>	<b>75</b>	<b>70</b>

**Surveying Technology**  
**Associate in Applied Science Degree – Evening Schedule**  
**(A40380)**

*(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	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
MAT	121	Algebra/Trigonometry I (or MAT 171/171A)	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
ACA	115	First-Year Seminar (or EGR 110)	0	2	1
MAT	122	Algebra/Trigonometry II (or MAT 172/172A)	2	2	3
SRV	110	Surveying I	2	6	4
			<b>4</b>	<b>10</b>	<b>8</b>
<b>Third Semester (Summer)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
ENG	111	Expository Writing	3	0	3
			<b>4</b>	<b>6</b>	<b>6</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>



**Fifth Semester (Spring)**

CIV	111	Soils and Foundations	2	3	3
ENG	114	Professional Research and Reporting (or COM 120, or COM 231)	3	0	3
SRV	210	Surveying III	2	6	4
			<b>7</b>	<b>9</b>	<b>10</b>

Engineering  
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Technology

**Sixth Semester (Summer)**

CIV	211	Hydraulics and Hydrology	2	3	3
			<b>2</b>	<b>3</b>	<b>3</b>

**Seventh Semester (Fall)**

CIV	215	Highway Technology	1	3	2
GIS	112	Introduction to GPS	2	2	3
SRV	220	Surveying Law	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>

**Eighth Semester (Spring)**

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

**Ninth Semester (Summer)**

SRV	230	Subdivision Planning	1	6	3
			<b>1</b>	<b>6</b>	<b>3</b>

**Tenth Semester (Fall)**

SRV	250	Advanced Surveying	2	6	4
		Humanities/Fine Arts Elective	3	0	3
			<b>5</b>	<b>6</b>	<b>7</b>

<b>Program Totals</b>			<b>43</b>	<b>75</b>	<b>70</b>
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**Surveying Technology  
Surveying Fundamentals Certificate (C40380L1)**

			<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	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
MAT	121	Algebra/Trigonometry I	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
SRV	110	Surveying I	2	6	4
			<b>3</b>	<b>12</b>	<b>7</b>
<b>Certificate Totals</b>			<b>8</b>	<b>19</b>	<b>15</b>

Engineering  
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Technology

Surveying Technology  
Surveying Fundamentals Certificate – Evening Schedule  
(C40380L1)

(Begins in odd years only)

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
EGR	115	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
MAT	121	Algebra/Trigonometry I	2	2	3
			<b>5</b>	<b>7</b>	<b>8</b>
<b>Second Semester (Spring)</b>					
SRV	110	Surveying I	2	6	4
			<b>2</b>	<b>6</b>	<b>4</b>
<b>Third Semester (Summer)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
			<b>1</b>	<b>6</b>	<b>3</b>
<b>Certificate Totals</b>			<b>8</b>	<b>19</b>	<b>15</b>

Surveying Technology  
Civil/Surveying CAD Certificate (C40380L2)

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CIS	111	Basic PC Literacy	1	2	2
EGR	115	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
			<b>4</b>	<b>7</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
SRV	260	Field & Office Practices	1	3	2
			<b>2</b>	<b>9</b>	<b>5</b>
<b>Certificate Totals</b>			<b>6</b>	<b>16</b>	<b>12</b>

Surveying Technology  
Civil/Surveying CAD Certificate – Evening Schedule (C40380L2)

(Begins in odd years only)

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
CIS	111	Basic PC Literacy	1	2	2
EGR	115	Intro to Technology	2	3	3
EGR	125	Appl Software for Tech	1	2	2
			<b>4</b>	<b>7</b>	<b>7</b>
<b>Second Semester (Spring)</b>					
SRV	260	Field & Office Practices	1	3	2
			<b>1</b>	<b>3</b>	<b>2</b>
<b>Third Semester (Summer)</b>					
CIV	125	Civil/Surveying CAD	1	6	3
			<b>1</b>	<b>6</b>	<b>3</b>
<b>Certificate Totals</b>			<b>6</b>	<b>16</b>	<b>12</b>

# 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.

Engineering  
and Applied  
Technology

## Welding Technology Associate in Applied Science Degree (A50420)

Program Summary	Hours
General Education	15
<i>English/Communication</i>	6
<i>Humanities/Fine Arts</i>	3
<i>Natural Sciences/Mathematics</i>	3
<i>Social/Behavioral Sciences</i>	3
Core Courses	18
Other Courses	41
<b>Program Total</b>	<b>74</b>

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

			Weekly Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
MAT	121	Algebra/Trigonometry I (or PHY 122)	2	2	3
WLD	110	Cutting Processes	1	3	2
WLD	115	SMAW (Stick) Plate	2	9	5
WLD	121	GMAW (MIG) Plate	2	6	4
			<b>7</b>	<b>22</b>	<b>15</b>
<b>Second Semester (Spring)</b>					
SPA	120	Spanish for the Workplace	3	0	3
WLD	116	SMAW (Stick) Plate/Pipe	1	9	4
WLD	122	GMAW (MIG) Plate/Pipe	1	6	3
WLD	141	Symbols & Specifications	2	2	3
			<b>7</b>	<b>17</b>	<b>13</b>
<b>Third Semester (Summer)</b>					
ENG	111	Expository Writing	3	0	3
WLD	131	GTAW (TIG) Plate	2	6	4
WLD	143	Welding Metallurgy	1	2	2
WLD	262	Inspection & Testing	2	2	3
			<b>8</b>	<b>10</b>	<b>12</b>

Engineering and Applied Technology	Fourth Semester (Fall)					
	MAC	118	Machine Shop Basic	1	3	2
	WLD	132	GTAW (TIG) Plate/Pipe	1	6	3
	WLD	151	Fabrication I	2	6	4
	WLD	231	GTAW (TIG) Pipe	1	6	3
			Social/ Behavioral Science Elective	3	0	3
			Humanities Elective	3	0	3
				11	21	18
	Fifth Semester (Spring)					
	DFT	111	Technical Drawing I	1	3	2
WLD	251	Fabrication II	1	6	3	
WLD	261	Certification Practices	1	3	2	
		Communications Elective*	3	0	3	
			6	12	10	
Sixth Semester (Summer)						
MEC	110	Introduction to CAD/CAM	1	2	2	
WLD	215	SMAW (Stick) Pipe	1	9	4	
			2	11	6	
Program Totals			41	93	74	

\*Selected from ENG 114, COM 120, or COM 231

## Welding Technology

### Associate in Applied Science Degree - Evening Schedule (A50420)

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year 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	111	Expository Writing	3	0	3
WLD	116	SMAW (Stick) Plate/Pipe	1	9	4
WLD	262	Inspection & Testing	2	2	3
			<b>6</b>	<b>11</b>	<b>10</b>
<b>Third Semester (Summer)</b>					
WLD	121	GMAW (MIG) Plate	2	6	4
WLD	141	Symbols & Specifications	2	2	3
			<b>4</b>	<b>8</b>	<b>7</b>
<b>Fourth Semester (Fall)</b>					
MAT	121	Algebra/Trigonometry I (or PHY 122)	2	2	3
WLD	131	GTAW (TIG) Plate	2	6	4
SPA	120	Spanish for the Workplace	3	0	3
			<b>7</b>	<b>8</b>	<b>10</b>
<b>Fifth Semester (Spring)</b>					
WLD	132	GTAW (TIG) Plate/Pipe	1	6	3
WLD	143	Welding Metallurgy	1	2	2
			<b>2</b>	<b>8</b>	<b>5</b>

**Sixth Semester (Summer)**

WLD	122	GMAW ((MIG) Plate Pipe	1	6	3
WLD	151	Fabrication I	2	6	4
			<b>3</b>	<b>12</b>	<b>7</b>

**Seventh Semester (Fall)**

WLD	231	GTAW (TIG) Pipe	1	6	3
		Social/Behavioral Science Elective	3	0	3
MAC	118	Machine Shop Basic	1	3	2
			<b>5</b>	<b>9</b>	<b>8</b>

**Eighth Semester (Spring)**

DFT	111	Technical Drawing I	1	3	2
		Communications Elective*	3	0	3
			<b>4</b>	<b>3</b>	<b>5</b>

**Ninth Semester (Summer)**

WLD	251	Fabrication II	1	6	3
			<b>1</b>	<b>6</b>	<b>3</b>

**Tenth Semester (Fall)**

WLD	261	Certification Practices	1	3	2
MEC	110	Introduction to CAD/CAM	1	2	2
			<b>2</b>	<b>5</b>	<b>4</b>

**Eleventh Semester (Spring)**

WLD	215	SMAW (Stick) Pipe	1	9	4
		Humanities/Fine Arts Elective	3	0	3
			<b>4</b>	<b>9</b>	<b>7</b>

<b>Program Totals</b>			<b>41</b>	<b>93</b>	<b>74</b>
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\* Selected from ENG 114, COM 120, or COM 231

**Welding Technology - Diploma (D50420)**

Program Summary		Hours
General Education		6
<i>English/Communication</i>		3
<i>Natural Sciences/Mathematics</i>		3
Core Courses		18
Other Courses		24
<b>Program Total</b>		<b>41</b>

*Courses requiring a grade of "C" or better: WLD*

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
ACA	115	First-Year Seminar	0	2	1
MAC	118	Machine Shop Basic	1	3	2
MAT	121	Algebra/Trigonometry I (or PHY 122)	2	2	3
WLD	110	Cutting Processes	1	3	2
WLD	115	SMAW (Stick) Plate	2	9	5
WLD	121	GMAW (MIG) FCAW (Flux) Plate	2	6	4
			<b>8</b>	<b>25</b>	<b>17</b>

Engineering  
and Applied  
Technology

Engineering and Applied Technology	<b>Second Semester (Spring)</b>					
	ENG	111	Expository Writing (or ENG 102)	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 (D50420)

				<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
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	111	Expository Writing (or ENG 102)		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	121	Algebra/Trigonometry I (or PHY 122)		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>1</b>	<b>6</b>	<b>3</b>
<b>Sixth Semester (Summer)</b>						
WLD	215	SMAW (Stick) Pipe		1	9	4
				<b>1</b>	<b>9</b>	<b>4</b>
<b>Program Totals</b>				<b>20</b>	<b>59</b>	<b>41</b>

## Welding Technology

### Basic Welding Certificate I - Day and Evening Schedule (C50420L2)

The following courses give students a basic understanding of the principles, and skills of modern day welding. Upon completion, students should be able to apply basic welding techniques in both SMAW and GMAW welding.

Engineering  
and Applied  
Technology

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
WLD	115	SMAW (Stick) Plate	2	9	5
WLD	121	GMAW/FCAW/Plate	2	6	4
			<b>4</b>	<b>15</b>	<b>9</b>
<b>Second Semester (Spring)</b>					
WLD	122	GMAW (MIG) Plate/Pipe	1	6	3
WLD	141	Symbols and Specifications	2	2	3
			<b>3</b>	<b>8</b>	<b>6</b>
<b>Certificate Totals</b>			<b>7</b>	<b>23</b>	<b>15</b>

## Welding Technology

### Basic Welding Certificate II - Day and Evening Schedule (C50420L3)

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

			Weekly		
			Class	Lab	Credit
			Hrs.	Hrs.	Hrs.
<b>First Semester (Fall)</b>					
WLD	115	SMAW (Stick) Plate	2	9	5
WLD	121	GMAW/FCAW/Plate	2	6	4
			<b>4</b>	<b>15</b>	<b>9</b>
<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>1</b>	<b>2</b>	<b>2</b>
<b>Program Totals</b>			<b>8</b>	<b>28</b>	<b>18</b>

Engineering  
and Applied  
Technology



# Arts and Sciences

Arts and

Sciences

## General Education

Consistent with Asheville-Buncombe Technical Community College's commitment to student success, the general education program provides students with a knowledge base of historical, societal, and environmental contexts for succeeding in the changing global community. The general education program represents a full spectrum of English/composition, 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.

### Degrees Conferred

Associate in Arts  
Associate in Science  
Associate in Fine Arts  
Biotechnology  
General Occupational Technology

### Diplomas Awarded

Associate in Arts  
General Occupational Technology

# Curriculum requirements for the Associate in Arts (A.A.) Degree (A10100)

## **General Education Core Requirements      44 Semester Hours**

Arts and

Sciences

### **English Composition (6 semester hours)**

English Composition: ENG 111 and one of the following are required:  
ENG 112, 113 or 114

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

A communications course is required in lieu of one humanities/fine arts. COM 231 is preferred.

Three additional courses from at least two of the following discipline areas are required: art, drama, foreign languages, humanities, literature, music, philosophy, and religion.

**At least one course must be a literature (\*) course.**

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

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

Four courses from at least three of the following discipline areas are required: anthropology, economics, history, political science, psychology, and sociology. **At least one course must be a history (\*) course.**

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

### **Natural Science/Mathematics**

#### **Natural Sciences (8 semester hours)**

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

AST 111	BIO 112	CHM 132	GEL 111	PHY 110	PHY 152
AST 111A*	BIO 120	CHM 135	GEL 113	PHY 110A*	PHY 251
BIO 110	BIO 130	CHM 136	GEL 230	PHY 151	PHY 252
BIO 111	BIO 140	CHM 151			
	BIO 140A*	CHM 152			

**Mathematics (6 semester hours)**

1. MAT 161 or higher is required. Select one course from the following:  
MAT 161\*, MAT 171\* or MAT 175\*
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 Semester Hours**

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 (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*

**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.***

Arts and

Sciences

All PED (physical education) courses count as electives.

ACC 120(4)	BIO 143(2)	BIO 275(4)	DRA 131	ENG 271(3)	MAT 161A(1)
ACC 121(4)	BIO 145(4)	BIO 280(3)	DRA 140	ENG 272(3)	MAT 171A(1)
ART 121(3)	BIO 146(4)	BUS 110(3)	DRA 141	ENG 273(3)	MAT 172A(1)
ART 122(3)	BIO 163(5)	BUS 115(3)	DRA 145	ENG 274(3)	MAT 175A(1)
ART 131(3)	BIO 168(4)	CHM 251(4)	DRA 170	ENG 275(3)	MAT 280(3)
ART 132(3)	BIO 169(4)	CHM 252(4)	DRA 171	GER 141(3)	MAT 285(3)
ART 135(3)	BIO 173(4)	CHM 265(4)	DRA 250	GER 221(3)	MUS 121(4)
ART 171(3)	BIO 175(3)	CHM 271(3)	EDU 216(4)	HEA 110(3)	MUS 122(4)
ART 240(3)	BIO 180(3)	CJC 111(3)	ENG 125(3)	HEA 112(2)	PHS 140(3)
ART 241(3)	BIO 223(3)	CJC 121(3)	ENG 126(3)	HEA 120(3)	PSY 275(3)
ART 244(3)	BIO 224(2)	CJC 141(3)	ENG 133(3)	HIS 162(3)	SOC 215(3)
ART 261(3)	BIO 225(2)	COM 150	ENG 134(3)	HIS 227(3)	SOC 232(3)
ART 262(3)	BIO 226(2)	COM 250	ENG 135(3)	HIS 236(3)	SOC 234(3)
ART 271(3)	BIO 243(4)	DRA 120	ENG 235	HUM 123(3)	SOC 254(3)
ART 274(3)	BIO 250(4)	DRA 124(3)	ENG 253(3)	MAT 140A(1)	SPA 221(3)
ART 275(3)	BIO 271(3)	DRA 130	ENG 265(3)	MAT 151A(1)	

## **Curriculum requirements for the Associate in Arts (A.A.) Diploma\***

### **General Education Core Requirements                      44 Semester Hours**

#### **English Composition (6 semester hours)**

English Composition: ENG 111 and one of the following: ENG 112, 113 or 114 are required.

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

A communications course is required in lieu of one humanities/fine arts. COM 231 is preferred.

Three additional courses from at least two of the following discipline areas are required: art, drama, foreign languages, humanities, literature, music, philosophy, and religion.

**At least one course must be a literature (\*) course.**

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Sciences

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

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

Four courses from at least three of the following discipline areas are required: anthropology, economics, history, political science, psychology, and sociology. **At least one course must be a history (\*) course.**

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

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

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

AST 111	BIO 112	CHM 132	GEL 111	PHY 110	PHY 152
AST 111A*	BIO 120	CHM 135	GEL 113	PHY 110A*	PHY 251
BIO 110	BIO 130	CHM 136	GEL 230	PHY 151	PHY 252
BIO 111	BIO 140	CHM 151			
	BIO 140A*	CHM 152			

**Mathematics (6 semester hours)**

1. MAT 161 or higher is required. Select one course from the following: MAT 161\*, MAT 171\* or MAT 175\*
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****1 Semester Hour**

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

# Curriculum requirements for the Associate in Science (A.S.) Degree (A10400)

## **General Education Core Requirements      44 Semester Hours**

### **English Composition (6 semester hours)**

English Composition: ENG 111 and one of the following: ENG 112, 113 or 114 are required

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

A communications course is required in lieu of one humanities course; COM 231 is preferred.

Two additional courses from two discipline areas are required: art, drama, foreign languages, humanities, music, philosophy and religion.

**One course must be a literature (\*) course.**

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

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

**Three** courses from **three** discipline areas are required: anthropology, economics, geography, political science, psychology and sociology.

**One course must be a history (\*) course.**

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

### **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	CHM 151	PHY 151	PHY 251
-and-	-and-	-and-	-and-
BIO 112	CHM 152	PHY 152	PHY 252

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**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 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.

**Six additional semester hours may be selected from either natural sciences or mathematics: BIO 110, BIO 120, BIO 130, BIO 140, CHM 135, CHM 136, GEL 111, GEL 113, and GEL 230.**

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

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*



**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.**

Arts and

***No elective course may be substituted for an approved general education core course.***

Sciences

All PEDs (physical education) courses count as electives.

ACC 120(4)	ART 284(3)	BIO 250(4)	DRA 120	ENG 265(3)	MAT 171A(1)
ACC 121(4)	AST 111(3)	BIO 271(3)	DRA 124(3)	ENG 266(3)	MAT 172A(1)
ART 121(3)	AST 111A(1)	BIO 275(4)	DRA 131	ENG 271(3)	MAT 175A(1)
ART 122(3)	BIO 143(2)	BIO 280(3)	DRA 140	ENG 272(3)	MAT 280(3)
ART 131(3)	BIO 145(4)	BUS 110(3)	DRA 141	ENG 273(3)	MAT 285(3)
ART 132(3)	BIO 146(4)	BUS 115(3)	DRA 145	ENG 274(3)	MUS 121(4)
ART 135(3)	BIO 163(5)	CHM 132(4)	DRA 170	ENG 275(3)	MUS 122(4)
ART 171(3)	BIO 168(4)	CHM 135(4)	DRA 171	GER 141(3)	PHS 140(3)
ART 240(3)	BIO 169(4)	CHM 136(4)	DRA 240	GER 221(3)	PHY 110(3)
ART 241(3)	BIO 173(4)	CHM 251(4)	DRA 250	HEA 110(3)	PHY 110A(1)
ART 244(3)	BIO 175(3)	CHM 252(4)	ENG 125(3)	HEA 112(2)	PHY 243(3)
ART 261(3)	BIO 180(3)	CHM 265(4)	ENG 126(3)	HEA 120(3)	PHY 275(3)
ART 262(3)	BIO 223(3)	CHM 271(3)	ENG 133(3)	HIS 162(3)	SOC 215(3)
ART 271(3)	BIO 224(2)	CJC 111(3)	ENG 134(3)	HIS 227(3)	SOC 232(3)
ART 281(3)	BIO 225(2)	CJC 121(3)	ENG 135(3)	HIS 236 (3)	SOC 234(3)
ART 282(3)	BIO 226(2)	CJC 141(3)	ENG 235(3)	HUM 123(3)	SOC 254(3)
ART 283(3)	BIO 243(4)	COM 150	ENG 253(3)	MAT 151A	SPA 141(3)
		COM 250		MAT 161A(1)	SPA 221(3)

## **Curriculum requirements for the Associate in Fine Arts (A.F.A.) Degree (A10200)**

### **Art Core Requirements 15 Semester Hours**

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

ART 114      ART 115      ART 121      ART 122      ART 131

### **General Education Core Requirements 28 Semester Hours**

#### **English/Composition (6 semester hours)**

ENG 111 and one of the following: ENG 112, 113 or 114 are required

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

Two courses are required: one course must be a literature course listed below. A communications course is required. COM 231 is preferred.

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

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

**Three** courses are required from **three** of the following discipline areas: anthropology, economics, geography, history, political science, psychology and sociology. **One course must be a history (\*) course.**

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Sciences

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

**Natural Science/Mathematics****Natural Sciences (4 semester hours)**

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

AST 111	BIO 110	CHM 135	GEL 113	PHY 110
AST 111A*	BIO 111	GEL 111	GEL 230	PHY 110A*

**Mathematics (3 semester hours)**

MAT 140 or higher is required.

**Other Required Hours****22 Semester Hours**

1. **ACA 115 (First-Year Seminar) is required. (1 semester hour)**
2. **Seven additional courses must be selected from those listed below (21 semester hours)**

ART 132	ART 244	ART 271	DRA 111	DRA 131	MUS 110
ART 171	ART 264	ART 281	DRA 112	DRA 140	MUS 113
ART 214*	ART 265	ART 282	DRA 120	DRA 141	MUS 114
ART 240	ART 266	ART 283	DRA 122	DRA 145	MUS 121
ART 241	ART 267	ART 284	DRA 124	DRA 250	MUS 122

**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**

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Pre-major Articulation Agreements are agreements between the 16-member University of North Carolina system, some private colleges and universities, and the 58 North Carolina Community Colleges. The agreements state that if you follow one of the pre-major tracks offered by the college (see list below), have no grade below "C," and are accepted by the senior institution, you will 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/).

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Sciences

*CAUTION: You MUST see your advisor before registering for one of these programs!*

**Associate in Arts and Associate in Science Degree  
Pre-major Tracks**

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**Associate in Arts**

- Art Education
- Business Administration
- Business Education
- Communication
- Computer Science
- Criminal Justice
- Elementary Education
- English
- English Education
- Health Education
- History
- Liberal Studies
- Marketing Education
- Middle Grade Education
- Nursing
- Physical Education
- Political Science
- Psychology
- Social Science
- Secondary Education
- Sociology
- Special Education

**Associate in Science**

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

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Biotechnology (A20100)

The Biotechnology curriculum is designed to meet the increasing demands for skilled Bioprocessing technicians in various fields of bio-process manufacturing, pharmaceutical manufacturing, and chemical manufacturing.

Course work emphasizes Bioprocessing, biology, chemistry, mathematics, and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: Bioprocessing technician, research assistant to biologist or chemist; and quality control/quality assurance technician.

Graduates may find employment in various areas of industry and government, including biopharmaceutical processing, Bioprocessing, chemical processing, research and development, sales, and customer service.

Biotechnology  
Associate in Applied Science Degree (A20100)

Program Summary		Hours
General Education		19
<i>English/Communication</i>		9
<i>Humanities/Fine Arts</i>		3
<i>Natural Sciences/Mathematics</i>		4
<i>Social/Behavioral Sciences</i>		3
Core Courses		26
Other Courses		30
Program Total		75 (76)

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

				Weekly			
				Class Hrs.	Lab Hrs.	Clinic Hrs.	Credit Hrs.
First Semester (Fall)							
ACA	115	First-Year Seminar		0	2	0	1
BIO	111	General Biology I		3	3	0	4
CHM	151	General Chemistry I		3	3	0	4
		(or CHM 131 Introduction to Chemistry and CHM 131A Intro to Chemistry Lab)		3	0	0	3
ENG	111	Expository Writing		3	0	0	3
MAT	161	College Algebra		3	0	0	3
MAT	161A	College Algebra Lab		0	2	0	1
				12	10	0	16
Second Semester (Spring)							
BIO	112	General Biology II		3	3	0	4
CHM	132	Organic & Biochemistry		3	3	0	4
MAT	151	Statistics		3	0	0	3
MAT	151A	Statistics Lab		0	2	0	1
		(or MAT 155 Statistical Analysis		3	0	0	3
		and MAT 155A Statistical Analysis Lab)		0	2	0	1
		Humanities/Fine Arts Elective		3	0	0	3
				12	8	0	15

**Third Semester (Summer)**

BIO	275	Microbiology	3	3	0	4
BTC	181	Basic Lab Techniques	3	3	0	4
		Social/Behavioral Science Elective	3	0	0	3
			<b>9</b>	<b>6</b>	<b>0</b>	<b>11</b>

**Fourth Semester (Fall)**

BTC	285	Cell Culture	2	3	0	3
BTC	250	Molecular Genetics	3	0	0	3
CIS	110	Computers Concepts	2	2	0	3
ENG	114	Professional Research 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>

**Fifth Semester (Spring)**

BTC	286	Immunological Techniques	3	3	0	4
BTC	270	Recombinant DNA Tech	3	3	0	4
BTC	283	Biotech Fermentation II	2	6	0	4
COM	231	Public Speaking	3	0	0	3
			<b>11</b>	<b>12</b>	<b>0</b>	<b>15</b>

**Sixth Semester (Summer)**

BTC	288	Biotech Lab Experience Techniques	0	6	0	2
		(or COE 213 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>
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Arts and  
Sciences

# **General Occupational Technology (A55280)**

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.

**Program Summary**

General Education	15
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<b>Program Total</b>	<b>64</b>



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# 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.

Courses that must be successfully completed prior to registering for this course.

General Subject		Lab Hours*	
Course Number (see below)	Course Title	Clinic, Co-op, or Shop Hours	Credit Hours**
ASH 101	Life in Asheville	1	3
Prerequisite: ASH 100		0	3
Corequisite: AVL 101			
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.			

Courses that must be taken at the same time as this course.

*\* 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

	<b>ACA 115</b>	<b>First-Year Seminar</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions					

Accounting

	<b>ACC 120</b>	<b>Principles of Financial Accounting</b>	<b>3</b>	<b>2</b>	<b>4</b>
	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.				
	<b>ACC 121</b>	<b>Principles of Managerial Accounting</b>	<b>3</b>	<b>2</b>	<b>4</b>
	Prerequisites: ACC 120				
	Corequisites: None				
	This course includes a greater emphasis on managerial and cost accounting skills. Emphasis is placed on managerial accounting concepts for external and internal analysis, reporting and decision-making. Upon completion, students should be able to analyze and interpret transactions relating to managerial concepts, including product costing systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
	<b>ACC 129</b>	<b>Individual Income Taxes</b>	<b>2</b>	<b>2</b>	<b>3</b>
	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.				
	<b>ACC 130</b>	<b>Business Income Taxes</b>	<b>2</b>	<b>2</b>	<b>3</b>
	Prerequisites: ACC 129				
	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.				
	<b>ACC 131</b>	<b>Federal Income Taxes</b>	<b>2</b>	<b>2</b>	<b>3</b>
	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.				

<b>ACC 140</b>	<b>Payroll Accounting</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: ACC 115 or ACC 120				
Corequisites: None				
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.				
<b>ACC 150</b>	<b>Accounting Software Applications</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: ACC 115 or ACC 120				
Corequisites: None				
This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting software package to solve accounting problems.				
<b>ACC 180</b>	<b>Practices in Bookkeeping</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ACC 120				
Corequisites: None				
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</b>	<b>Intermediate Accounting I</b>	<b>3</b>	<b>2</b>	<b>4</b>
Prerequisites: ACC 120				
Corequisites: None				
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analyses of financial statements. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.				
<b>ACC 240</b>	<b>Government and Not-for-Profit Accounting</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ACC 121				
Corequisites: None				
This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.				
<b>*ACC 269</b>	<b>Auditing and Assurance Services</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ACC 220				
Corequisites: None				
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.				

Course

Descriptions

# Air Conditioning, Heating, and Refrigeration

	<b>*AHR 110</b>	<b>Introduction to Refrigeration</b>	<b>2</b>	<b>6</b>	<b>5</b>
	Prerequisites: None				
	Corequisites: None				
Course	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.				
Descriptions					
	<b>*AHR 112</b>	<b>Heating Technology</b>	<b>2</b>	<b>4</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.				
	<b>*AHR 113</b>	<b>Comfort Cooling</b>	<b>2</b>	<b>4</b>	<b>4</b>
	Prerequisites: None				
	Corequisites: None				
	This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.				
	<b>*AHR 114</b>	<b>Heat Pump Technology</b>	<b>2</b>	<b>4</b>	<b>4</b>
	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.				
	<b>*AHR 115</b>	<b>Refrigeration Systems</b>	<b>1</b>	<b>3</b>	<b>2</b>
	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.				
	<b>*AHR 120</b>	<b>HVACR Maintenance</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None				
	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.				

**\*AHR 125 HVAC Electronics**

**1      3      2**

Prerequisites: None

Corequisites: AHR 111 or ELC 111

This course introduces the common electronic control components in HVAC systems. Emphasis is placed on identifying electronic components and their functions in HVAC systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

## \*AHR 130 HVAC Controls

**2      2      3**

Prerequisites: AHR 111 or ELC 111

Corequisites: None

This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort systems controls.

**\*AHR 210 Residential Building Code**

**1      2      2**

Prerequisites: None

Corequisites: None

This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.

**\*AHR 211      Residential System Design**

**2      2      3**

Prerequisites: None

Corequisites: None

This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

**\*AHR 212      Advanced Comfort Systems**

**2      6      4**

Prerequisites: AHR 114

Corequisites: None

This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps. Hydronic (hot water) and steam heating systems will also be studied.

# Anthropology

**ANT 210      General Anthropology**

**3 0 3**

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions

**ANT 220**

**Cultural Anthropology**

303

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.

**ANT 240**

**Archaeology**

303

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**

163

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.

**ARC 112**

**Construction Materials and Methods**

324

Prerequisites: None  
Corequisites: None

This course introduces construction materials and their methodologies. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.

**ARC 113**

**Residential Arch Tech**

163

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.

**ARC 131**

**Building Codes**

223

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.				

Course

Descriptions

# Art

<b>ART 111</b>	<b>Art Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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>
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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>
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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.

<b>ART 121</b>	<b>Design I</b>	<b>0</b>	<b>6</b>	<b>3</b>
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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.

<b>ART 122</b>	<b>Design II</b>	<b>0</b>	<b>6</b>	<b>3</b>
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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.

<b>ART 131</b>	<b>Drawing I</b>	<b>0</b>	<b>6</b>	<b>3</b>
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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.

<b>ART 132</b>	<b>Drawing II</b>	<b>0</b>	<b>6</b>	<b>3</b>
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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.

<b>ART 135</b>	<b>Figure Drawing I</b>	<b>0</b>	<b>6</b>	<b>3</b>
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Prerequisites: ART 131

Corequisites: None

This course introduces rendering the human figure with various drawing materials. Emphasis is placed on the use of visual elements, anatomy, and proportion in the representation of the draped and undraped figure. Upon completion, students should be able to demonstrate competence in drawing the human figure. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

<b>ART 171</b>	<b>Computer Art I</b>	<b>0</b>	<b>6</b>	<b>3</b>
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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.

<b>ART 214</b>	<b>Portfolio and Resume</b>	<b>0</b>	<b>2</b>	<b>1</b>
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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.

<b>ART 240</b>	<b>Painting I</b>	<b>0</b>	<b>6</b>	<b>3</b>
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Prerequisites: ART 121 or ART 131

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</b>	<b>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</b>	<b>Watercolor</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: ART 1221 or ART 131				
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</b>	<b>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</b>	<b>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</b>	<b>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.				

Course

Descriptions

Course  
Descriptions

<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 266</b>	<b>Videography I</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>ART 267</b>	<b>Videography II</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: ART 266				
Corequisites: None				
This course is designed to provide a framework for the production of a long-term video project. Emphasis is placed on realization of the unique creative vision. Upon completion, students should be able to produce a thematically coherent, edited video with sound and titling. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a 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 281</b>	<b>Sculpture I</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in a variety of sculptural approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>ART 282</b>	<b>Sculpture II</b>	<b>0</b>	<b>6</b>	<b>3</b>
Prerequisites: ART 281				
Corequisites: None				
This course builds on the visual and technical skills learned in ART 281. Emphasis is placed on developing original solutions to sculptural problems in a variety of media. Upon completion, students should be able to express individual ideas using the techniques and materials of sculpture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				

**ART 283**      **Ceramics I**

**0 6 3**

Prerequisites: None

Corequisites: None

This course provides an introduction to three-dimensional design principles using the medium of clay. Emphasis is placed on fundamentals of forming, surface design, glaze application, and firing. Upon completion, students should be able to demonstrate skills in slab and coil construction, simple wheel forms, glaze technique, and creative expression. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

## Course Descriptions

**ART 284**      **Ceramics II**

**0 6 3**

Prerequisites: ART 283

Corequisites: None

This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to demonstrate a high level of technical competence in forming and glazing with a development of three-dimensional awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

# Astronomy

**AST 111**      **Descriptive Astronomy**

**3 0 3**

Prerequisites: None

Corequisites: AST 111A

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: None

This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.

# Automotive

Course

Descriptions

<b>*AUT 110</b>	<b>Introduction to Automotive Technology</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers work-place safety, hazardous material and environmental regulations and procedures, proper use of hand tools, use of service information resources, and the basic concepts, systems and terms of automotive technology. Topics include familiarization with vehicle systems along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe safety and environmental procedures, terms associated with automobiles, identify and use basic tools and shop equipment.				
<b>*AUT 114</b>	<b>Safety and Emissions</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course covers the laws, procedures and specifications needed to perform a North Carolina State Safety and Emissions inspection. Topics include brake, steering and suspension, lighting, horn, windshield wiper, tire, mirrors, and emission control devices inspection. Upon completion, students should be able to perform complete and thorough North Carolina State Safety and Emissions inspections.				
<b>*AUT 116</b>	<b>Engine Repair</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.				
<b>*AUT 116A</b>	<b>Engine Repair Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.				
<b>*AUT 141</b>	<b>Suspension and Steering Systems</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.				
<b>*AUT 141A</b>	<b>Suspension and Steering Systems Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to identify steering and suspension problems, service and repair steering and suspension components, check and adjust alignment angles, and repair and balance tires.				

<b>*AUT 151</b>	<b>Brake Systems</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.				
<b>*AUT 151A</b>	<b>Brake Systems Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.				
<b>*AUT 161</b>	<b>Basic Automotive Electricity</b>	<b>4</b>	<b>3</b>	<b>5</b>
Prerequisites: None				
Corequisites: None				
This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, and alternators. Topics include Ohm's Law, Circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and basic electrical concerns.				
<b>*AUT 162</b>	<b>Chassis Electrical and Electronics</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: AUT 163				
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</b>	<b>Advanced Automotive Electricity/Electronics</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers basic electronic theory, wiring diagrams, test equipment, and diagnosis /repair/replacement of electronics, lighting, gauges, driver information, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and basic trouble shooting. Upon completion, students should be able to read and understand wiring diagrams, diagnose, test, and repair basic wiring, lighting, gauges, accessories, modules, and basic electronic concerns.				
<b>*AUT 171</b>	<b>Automotive Climate Control</b>	<b>2</b>	<b>4</b>	<b>4</b>
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.				

Course

Descriptions

## Course

## Descriptions

<b>*AUT 181</b>	<b>Engine Performance 1</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to today's vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion students should be able to describe operation of and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment and service information.				
<b>*AUT 182</b>	<b>Engine Performance-Electrical Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
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.				
<b>*AUT 183</b>	<b>Engine Performance-Fuels</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: AUT 184				
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.				
<b>*AUT 184</b>	<b>Engine Performance-Fuels Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: AUT 183				
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.				
<b>*AUT 221</b>	<b>Automatic Transmissions/Transaxles</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
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, diagnose and repair automatic drive trains.				
<b>*AUT 221A</b>	<b>Automatic Transmissions/Transaxles Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program and covers diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains.				

<b>*AUT 231</b>	<b>Manual Transmissions/Transaxles and Drivetrains</b>	<b>2</b>	<b>4</b>	<b>4</b>
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Prerequisites: None

Corequisites: AUT 232

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

## Course Descriptions

*AUT 231A	Manual Transmiss/Transaxles and Drivetrains Lab	0	3	1
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Prerequisites: None

Corequisites: AUT 231

This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a Co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to diagnose and repair manual drive trains.

*AUT 281	Advanced Engine Performance	2	2	3
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Prerequisites: None

Corequisites: AUT 231

This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

## Biology

<b>BIO 106</b>	<b>Introduction to Anatomy/Physiology/Microbiology</b>	<b>2</b>	<b>2</b>	<b>3</b>
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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>
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Prerequisites: None

Corequisites: None

This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

<b>BIO 111</b>	<b>General Biology I</b>	<b>3</b>	<b>3</b>	<b>4</b>
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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.

Course	<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.				
Descriptions	<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 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.				



**BIO 146                      Regional Natural History                      3                      3                      4**

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.

Course

Descriptions

**BIO 155                      Nutrition                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course covers the biochemistry of foods and nutrients with consideration of the physiological effects of specialized diets for specific biological needs.

Topics include cultural, religious, and economic factors that influence a person's acceptance of food, as well as nutrient requirements of the various life stages.

Upon completion, students should be able to identify the functions and sources of nutrients, the mechanisms of digestion, and the nutritional requirements of all age groups. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BIO 163                      Basic Anatomy and Physiology                      4                      2                      5**

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.

**BIO 168                      Anatomy and Physiology I                      3                      3                      4**

Prerequisites: None

Corequisites: None

This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, and nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**BIO 169                      Anatomy and Physiology II                      3                      3                      4**

Prerequisites: BIO 168

Corequisites: None

This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships.

This course has been approved to satisfy the Comprehensive Articulation Agreement transferability as a premajor and/or elective course requirement.

**BIO 173                      Microbes in World Affairs                      3                      0                      3**

Prerequisites: BIO 110 or BIO 111

Corequisites: None

This course provides an integrated and comprehensive study of the microbial world and its influence on global events and human affairs. Topics include plant and animal diseases caused by viral, bacterial, and fungal pathogens and their impacts on history, industrial microbiology, biotechnology, and microbial ecology. Upon completion, students should be able to demonstrate an understanding of the importance of microbes in human and world affairs. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**BIO 175                      General Microbiology                      2                      2                      3**

Prerequisites: Select One: BIO 110, BIO 111, BIO 163, BIO 165, BIO 168

Corequisites: None

This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**BIO 180                      Biological Chemistry                      2                      2                      3**

Prerequisites: None

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 for transferability as a premajor and/or elective course requirement.

**BIO 223                      Field Botany                      2                      3                      3**

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.

**BIO 224                      Local Flora Spring                      1                      2                      2**

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.

**BIO 225                      Local Flora Summer                      1                      2                      2**

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>*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: None				
Corequisites: CUL 110 and CUL 160				
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.				

**\*BPA 240      Plated Desserts**

**1      4      3**

**Prerequisites:** BPA 120, BPA 130, CUL 110, CUL 160, and COE 112

Corequisites: None

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.

## Course Descriptions

**\*BPA 250      Dessert and Bread Production**

**1      8      5**

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.

**\*BPA 260      Pastry and Baking Marketing**

**2      2      3**

**Prerequisites:** BPA 210, BPA 240, BPA 250, and COE 112

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.

# Blueprint Reading

**BPR 111**      **Blueprint Reading**

**1 2 2**

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.

**BPR 121      Blueprint Reading: Mechanical**

**1      2      2**

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.

**BPR 130**      **Blueprint Reading/Construction**

**1      2      2**

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.

## BPR 135 Schematics and Diagrams

**2 0 2**

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 150 Bioethics**

**3 0 3**

Prerequisites: None

Corequisites: RED 090

Course

Descriptions

This course introduces the current ethics issues surrounding the biotechnology industries. Topics will include risk assessment, the relationships between science, technology, and society, and the effects of new biotechnology products upon the natural world. Upon completion, students should be able to demonstrate knowledge and critical thinking skills in decision-making related to bioethical issues.

## **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

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 Biotech 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 Biotech 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, BIO 275, Enrollment in the Biotechnology Program

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.

**BTC 286      Immunological Techniques**

**3      3      4**

Prerequisites: BTC 285

Corequisites: None

This course covers the principles and practices of modern immunology, including the interactions between the various cellular and chemical components of the immune response. Topics include antigens, humoral immunity, cellular immunity, complement, immunological assays, and hybridoma use and production. Upon completion, students should be able to discuss the immune response, perform immunological assays, and make monoclonal antibody-producing hybridomas.

**BTC 288      Biotech Lab Experience**

**0 6 2**

**Prerequisites:** BIO 250 or BTC 270, and BTC 281, BTC 285, or BTC 286

Corequisites: None

This course provides an opportunity to pursue an individual laboratory project in biotechnology. Emphasis is placed on developing, performing, and maintaining records of a project in a specific area of interest. Upon completion, students should be able to complete the project with accurate records and demonstrate an understanding of the process.

## Business Administration

**BUS 110**      **Introduction to Business**

**3 0 3**

Prerequisites: None

Corequisites: None

This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## BUS 115 Business Law I

**3 0 3**

Prerequisites: None

Corequisites: None

This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

## BUS 116 Business Law II

**3 0 3**

Prerequisites: BUS 115

Corequisites: None

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.

Course	<b>BUS 135 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.			
Descriptions	<b>*BUS 137 Principles of Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
	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. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.			
	<b>BUS 139 Entrepreneurship I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: BUS 110 Corequisites: None This course provides an introduction to the principles of entrepreneurship. Topics include self-analysis of entrepreneurship readiness, the role of entrepreneur in economic development, legal problems, organizational structure, sources of financing, budgeting, and cash flow. Upon completion, students should have an understanding of the entrepreneurial process and issues faced by entrepreneurs.			
	<b>BUS 147 Business Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
	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.			
	<b>BUS 151 People Skills</b>	<b>3</b>	<b>0</b>	<b>3</b>
	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.			
	<b>BUS 153 Human Resources Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
	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.			
	<b>BUS 217 Employment Law and Regulations</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None This course introduces the principle laws and regulations affecting public and private organizations and their employees or prospective employees. Topics include fair employment practices, EEO, affirmative action, and employee rights and protections. Upon completion, students should be able to evaluate organization policy for compliance and assure that decisions are not contrary to law.			



**BUS 225 Business Finance** 2 2 3  
 Prerequisites: ACC 120  
 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.

Course

**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.

Descriptions

**BUS 234 Training and Development** 3 0 3  
 Prerequisites: None  
 Corequisites: None  
 This course covers developing, conducting, and evaluating employee training with attention to adult learning principles. Emphasis is placed on conducting a needs assessment, using various instructional approaches, designing the learning environment, and locating learning resources. Upon completion, students should be able to design, conduct, and evaluate a training program.

**\*BUS 239 Business Applications Seminar** 1 2 2  
 Prerequisites: ACC 120, BUS 115, BUS 137, MKT 120 and either ECO 151, ECO 251 or ECO 252

Corequisites: None  
 This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the workplace.

**BUS 240 Business Ethics** 3 0 3  
 Prerequisites: None  
 Corequisites: None  
 This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the work force and society.

**BUS 245 Entrepreneurship II** 3 0 3  
 Prerequisites: BUS 139  
 Corequisites: None  
 This course is designed to allow the student to develop a business plan. Topics include the need for a business plan, sections of the plan, writing the plan, and how to find assistance in preparing the plan. Upon completion, students should be able to design and implement a business plan based on sound entrepreneurship principles.

**BUS 256 Recruit Select and Per Plan** 3 0 3  
 Prerequisites: None  
 Corequisites: None  
 This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining 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.

Course

Descriptions

**BUS 258**

**Compensation and Benefits**

303

Prerequisites: None  
Corequisites: None

This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees. This course is a unique concentration requirement of the Human Resources Management concentration in the Business Administration program.

**BUS 259**

**HRM Applications**

303

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**

303

Prerequisites: CIS 110 and ENG 111  
Corequisites: None

This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the workplace.

**BUS 270**

**Professional Development**

303

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.

Cabinetmaking

**CAB 111**

**Cabinetmaking I**

497

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**

202

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.

**CAR 113**      **Carpentry III**

**3 9 6**

Prerequisites: CAR 111

Corequisites: None

This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinetry, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. This is a diploma-level course.

## CAR 114 Residential Building Codes

**3 0 3**

Prerequisites: None

**Corequisites:** None

This course covers building codes and the requirements of state and local construction regulations. Emphasis is placed on the minimum requirements of the North Carolina building codes related to residential structures. Upon completion, students should be able to determine if a structure is in compliance with North Carolina building codes.

**CAR 115 Residential Planning/Estimating**

**3 0 3**

Prerequisites: BPR 130

Corequisites: None

This course covers project planning, management, and estimating for residential or light commercial buildings. Topics include planning and scheduling, interpretation of working drawings and specifications, estimating practices, and other related topics. Upon completion, students should be able to perform quantity take-offs and cost estimates.

# Computed Tomography

**CAT 210**      **CT Physics and Equipment**

**3 0 0**

**Prerequisites:** Acceptance into CT/MRI program

Corequisites: None

This course covers the system operations and components, image processing and display, image quality, and artifacts in computed tomography. Emphasis is placed on the data acquisition components, tissue attenuation conversions, image manipulation, and factors controlling image resolution. Upon completion, students should be able to understand the physics and instrumentation used in computed tomography.

Course  
Descriptions

**CAT 225**  
Prerequisites: Acceptance into the CT/MRI program  
Corequisites: None  
This course provides the opportunity to apply knowledge gained from class-room instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

**CT Clinical Practicum**  
0015

**CAT 226**  
Prerequisites: Acceptance into the CT/MRI program  
Corequisites: None  
This course provides the opportunity to apply knowledge gained from class-room instruction to the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in computed tomography. Upon completion, students should be able to assume a variety of duties and responsibilities within the computed tomography clinical environment.

**CT Clinical Practicum**  
00186

Cyber Crime

**CCT 110**  
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.

**Introduction to Cyber Crime**  
303

**CCT 121**  
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.

**Computer Crime Investigation**  
324

**CCT 231**  
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.

**Technology Crimes and Law**  
303

Computer Engineering Technology

**CET 111**  
Prerequisites: MAT 060, RED 080  
Corequisites: None  
This course covers repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include CPU/memory/bus identification, disk subsystems, hardware/software installation/configuration, common device drivers, data recovery, system maintenance, and other related topics. Upon completion, students should be able to safely repair and/or upgrade computer systems to perform within specifications.

**Computer Upgrade/Repair I**  
233

<b>CET 125</b>	<b>Voice and Data Cabling</b>	<b>2</b>	<b>3</b>	<b>3</b>
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Prerequisites: None

Corequisites: None

This course provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, including signal transmission. Topics include network design documentation, part list set-up, pulling and mounting cable, cable management, wiring closets, patch panel installation and termination including cable testing. Upon completion, students should be able to understand documentation, design, installation and safety issues associated with voice and data cabling.

Course

Descriptions

<b>CET 161</b>	<b>Procedural Programming</b>	<b>2</b>	<b>3</b>	<b>3</b>
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Prerequisites: None

Corequisites: None

This course introduces procedural programming for engineering applications. Emphasis is placed on event-driven programming methods, including creating and manipulating data, sequencing, iteration, and blocking of code. Upon completion, students should be able to design, code, test and debug at a beginning level.

<b>CET 211</b>	<b>Computer Upgrade/Repair II</b>	<b>2</b>	<b>3</b>	<b>3</b>
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Prerequisites: CET 111

Corequisites: None

This course covers concepts of repair service, and upgrade of computers and peripherals in preparation for industry certification. Topics may include resolving resource conflicts and system bus specifications, configuration and troubleshooting peripherals, operating system configuration and optimization, and other related topics. Upon completion, students should be able to identify and resolve system conflicts and optimize system performance.

<b>CET 212</b>	<b>Integrated Manufacturing Systems</b>	<b>1</b>	<b>3</b>	<b>2</b>
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Prerequisites: ELN 237 and CET 160

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

<b>CHM 092</b>	<b>Fundamentals of Chemistry</b>	<b>3</b>	<b>2</b>	<b>4</b>
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Prerequisites: None

Corequisites: None

This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

<b>CHM 121</b>	<b>Foundations of Chemistry</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

Course	<b>CHM 121A Foundations of Chemistry Laboratory</b>	<b>0</b>	<b>2</b>	<b>1</b>
	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.			
Descriptions	<b>CHM 130 General, Organic, and Biochemistry</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: High school chemistry or CHM 092 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.			
	<b>CHM 130A General, Organic, and Biochemistry Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
	Prerequisites: None Corequisites: CHM 130 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.			
	<b>CHM 132 Organic and Biochemistry</b>	<b>3</b>	<b>3</b>	<b>4</b>
	Prerequisites: CHM 131 and 131A or 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 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 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.			

**CHM 151      General Chemistry I****3      3      4**

Prerequisites: High school chemistry or CHM 092

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.

Course  
Descriptions**CHM 152      General Chemistry II****3      3      4**

Prerequisites: CHM 151

Corequisites: None

This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**CHM 251      Organic Chemistry I****3      3      4**

Prerequisites: CHM 152

Corequisites: None

This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 252      Organic Chemistry II****3      3      4**

Prerequisites: CHM 251

Corequisites: None

This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**CHM 265      Instrumental Analysis****2      6      4**

Prerequisites: CHM 251

Corequisites: None

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>
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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 110</b>	<b>Introduction to Computers</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)

Corequisites: None

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. Microsoft Office will be used in this course; this includes Word, Excel, Access and PowerPoint. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).

<b>CIS 111</b>	<b>Basic PC Literacy</b>	<b>1</b>	<b>2</b>	<b>2</b>
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Prerequisites: Basic computer literacy is necessary (if you do not have basic skills, CTS 060 will give you the foundation for this course)

Corequisites: None

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

<b>CIS 113</b>	<b>Computer Basics</b>	<b>0</b>	<b>2</b>	<b>1</b>
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Prerequisites: None

Corequisites: None

This course introduces basic computer usage for non-computers majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate basic computer applications.

<b>CIS 115</b>	<b>Introduction to Programming and Logic</b>	<b>2</b>	<b>3</b>	<b>3</b>
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Prerequisites: Select One: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option).



# Civil Engineering

**CIV 110                      Statics/Strength of Materials                      2                      6                      4**

Prerequisites: MAT 121

Corequisites: None

This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

**CIV 111                      Soils and Foundations                      2                      3                      3**

Prerequisites: CIV 110 or MEC 250

Corequisites: None

This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.

**CIV 125                      Civil/Surveying CAD                      1                      6                      3**

Prerequisites: None

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.

**CIV 210                      Engineering Materials                      1                      3                      2**

Prerequisites: None

Corequisites: None

This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.

**CIV 211                      Hydraulics and Hydrology                      2                      3                      3**

Prerequisites: CIV 110 or MEC 250

Corequisites: None

This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.

**CIV 212                      Environmental Planning                      2                      3                      3**

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.

**CIV 215                      Highway Technology                      1                      3                      2**

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.

Course

Descriptions

<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: Select One: ARC 111, CIS 110, CIS 111, 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: ARC 111 or 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: Department Chair Approval				
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

**CJC 100      Basic Law Enforcement Training      9      30      19**

Prerequisites: RED 090

Corequisites: None

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.

Course

Descriptions

**CJC 111      Introduction to Criminal Justice      3      0      3**

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.

**CJC 112      Criminology      3      0      3**

Prerequisites: None

Corequisites: None

This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

**CJC 113      Juvenile Justice      3      0      3**

Prerequisites: None

Corequisites: None

This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

**CJC 114      Investigative Photography      1      2      2**

Prerequisites: None

Corequisites: None

This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.

**CJC 120      Interviews/Interrogations      1      2      2**

Prerequisites: None

Corequisites: None

This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

<b>CJC 121</b>	<b>Law Enforcement Operations</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>CJC 122</b>	<b>Community Policing</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>CJC 131</b>	<b>Criminal Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>CJC 132</b>	<b>Court Procedure and Evidence</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>CJC 141</b>	<b>Corrections</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>CJC 151</b>	<b>Introduction to Loss Prevention</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

**CJC 160                      Terrorism: Underlying Issues                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course identifies the fundamental reasons why America is a target for terrorists, covering various domestic/international terrorist groups and ideologies from a historical aspect. Emphasis is placed upon recognition of terrorist crime scenes; weapons of mass destruction; chemical, biological, and nuclear terrorism; and planning consideration involving threat assessments. Upon completion, the student should be able to identify and discuss the methods used in terrorists' activities and complete a threat assessment for terrorists' incidents.

Course

Descriptions

**CJC 170                      Critical Incident Management for Public Safety                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/work place violence. Upon completion, the student should be able to identify and discuss managerial techniques, legal issues, and response procedures to critical incidents.

**CJC 211                      Counseling                      3                      0                      3**

Prerequisites: None

Corequisites: None

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.

**CJC 212                      Ethics and Community Relations                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to demonstrate the ability to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

**CJC 213                      Substance Abuse                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities. Drug enforcement programs and techniques will be discussed.

**CJC 214                      Victimology                      3                      0                      3**

Prerequisites: None

Corequisites: None

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.

Course

Descriptions

**CJC 215                      Organization and Administration                      3                      0                      3**

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.

**CJC 221                      Investigative Principles                      3                      2                      4**

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.

**CJC 222                      Criminalistics                      3                      0                      3**

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.

**CJC 223                      Organized Crime                      3                      0                      3**

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.

**CJC 225                      Crisis Intervention                      3                      0                      3**

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.

**CJC 231                      Constitutional Law                      3                      0                      3**

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.

<b>CJC 232</b>	<b>Civil Liability</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Prerequisites: None

Corequisites: None

This course covers liability issues for the criminal justice professional. Topics include civil rights violations, tort liability, employment issues, and other related topics. Upon completion, students should be able to explain civil trial procedures and discuss contemporary liability issues.

Course

<b>CJC 251</b>	<b>Forensic Chemistry I</b>	<b>3</b>	<b>2</b>	<b>4</b>
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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.

## Descriptions

<b>CJC 252</b>	<b>Forensic Chemistry II</b>	<b>3</b>	<b>2</b>	<b>4</b>
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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 255</b>	<b>Issue in Criminal Justice App</b>	<b>3</b>	<b>0</b>	<b>3</b>
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**Prerequisites:** CJC 111, CJC 221, and CJC 231

Corequisites: None

This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer.

## Construction Management

<b>*CMT 210</b>	<b>Professional Construction Supervision</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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
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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

<b>*CMT 214</b>	<b>Planning and Scheduling</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>*CMT 216</b>	<b>Costs and Productivity</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>*CMT 218</b>	<b>Human Relations Issues</b>	<b>3</b>	<b>0</b>	<b>3</b>
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

<b>COE 111</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
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 course is also available through the Virtual Learning Community (VLC).					
<b>COE 112</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
Prerequisites: See Department Chair for prerequisites					
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 113</b>	<b>Co-op Work Experience I</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>
Prerequisites: See Department Chair for prerequisites					
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 115</b>	<b>Work Experience Seminar I</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
Corequisites: Select one: COE 111, COE 112, COE 113, COE 114					
This course description may be written by the individual colleges.					
<b>COE 121</b>	<b>Co-op Work Experience II</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
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 122</b>	<b>Co-op Work Experience II</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
Prerequisites: See Department Chair for prerequisites					
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 123</b>	<b>Co-op Work Experience II</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>
Prerequisites: See Department Chair for prerequisites					
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 125</b>	<b>Work Experience Seminar II</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
Corequisites: Select one: COE 121, COE 122, COE 123, COE 124					
This course description may be written by the individual college.					
<b>COE 131</b>	<b>Co-op Work Experience III</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
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 132</b>	<b>Co-op Work Experience III</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
Prerequisites: See Department Chair for prerequisites					
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 135</b>	<b>Work Experience Seminar III</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
Corequisites: Select one: COE 131, COE 132, COE 133, COE 134					
This course description may be written by the individual colleges.					

Course

Descriptions

Course  
Descriptions

<b>COE 211</b>	<b>Co-op Work Experience IV</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
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 212</b>	<b>Work Experience IV</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>
Prerequisites: See Department Chair for prerequisites					
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 213</b>	<b>Co-op Work Experience IV</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>
Prerequisites: See Department Chair for prerequisites					
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</b>	<b>Work Experience Seminar IV</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Prerequisites: See Department Chair for prerequisites					
Corequisites: Select one: COE 211, COE 212, COE 213, COE 214					
This course description may be written by the individual colleges.					

Communications

<b>COM 120</b>	<b>Intro to Interpersonal Communication</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts (substitute). This course is also available through the Virtual Learning Community (VLC).				
<b>COM 150</b>	<b>Introduction to Mass Communication</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ENG 111				
Corequisites: ENG 112, ENG 113 or ENG 114				
This course introduces print and electronic media and the new information technologies in terms of communication theory and as economic, political, and social institutions. Emphasis is on the nature, history, functions, and responsibilities of mass communication industries in a global environment and their role and impact in American society. Upon completion, students should have an awareness of the pervasive nature of the mass media and how the media operate in an advanced post-industrial society. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.				

**COM 231      Public Speaking**

**3 0 3**

Prerequisites: 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.

## Cosmetology

**COS 111**      **Cosmetology Concepts I**

**4 0 4**

Prerequisites: None

Corequisites: COS 112

This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

**COS 112**                      **Salon I**

**0      24      8**

Prerequisites: None

Corequisites: COS 111

This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

**COS 113      Cosmetology Concepts II**

4 0 4

Prerequisites: None

Corequisites: COS 114

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

**COS 114**      **Salon II**

0 24 8

Prerequisites: None

Corequisites: COS 113

This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

Course  
Descriptions

<b>COS 115</b>	<b>Cosmetology Concepts III</b>	<b>4</b>	<b>0</b>	<b>4</b>
Prerequisites: None				
Corequisites: COS 116				
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.				
<b>COS 116</b>	<b>Salon III</b>	<b>0</b>	<b>12</b>	<b>4</b>
Prerequisites: None				
Corequisites: COS 115				
This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.				
<b>COS 117</b>	<b>Cosmetology Concepts IV</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: COS 116				
This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.				
<b>COS 118</b>	<b>Salon IV</b>	<b>0</b>	<b>21</b>	<b>7</b>
Prerequisites: None				
Corequisites: COS 17				
This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.				
<b>COS 260</b>	<b>Design Applications</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course provides an overview of the design concepts used in cosmetology. Topics include the application of art principles and elements to artistically design hair, nails, and make-up and other related topics. Upon completion, students should be able to demonstrate knowledge and techniques associated with design concepts.				

Computer Programming

<b>CSC 139</b>	<b>Visual BASIC Programming</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: CIS 115				
Corequisites: None				
This course introduces computer programming using the Visual BASIC programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level.				

**CSC 151                      JAVA Programming                      2                      3                      3**

Prerequisites: CIS 115

Corequisites: None

This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

Course

Descriptions

**Construction**

**CST 211                      Construction Surveying                      2                      3                      3**

Prerequisites: Select one: MAT 115, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

This course covers field-surveying applications for residential and commercial construction. Topics include building layout and leveling, linear measurement and turning angles, plumbing vertical members, and topographic and utilities surveys. Upon completion, students should be able to properly and accurately use surveying equipment to lay out residential and commercial buildings.

**Computer Information Technology**

**CTS 060                      Essential Computer Usage                      1                      2                      2**

Prerequisites: None

Corequisites: None

This course covers the basic functions and operations of the computer. Topics include identification of components, overview of operating systems and other basic computer operations. Upon completion, students should be able to perform basic computer commands, access files, print documents and complete fundamental application operations.

**CTS 120                      Hardware/Software Support                      2                      3                      3**

Prerequisites: CIS 110 or CIS 111, and NOS 110

Corequisites: None

This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

**CTS 125                      Presentation Graphics                      2                      2                      3**

Prerequisites: CIS 110 or CIS 111

Corequisites: None

This course provides hands-on experience with a graphics presentation package. Topics include terminology, effective chart usage, design and layout, integrating hardware components, and enhancing presentations with text, graphics, audio and video. Upon completion, students should be able to design and demonstrate an effective presentation.

**CTS 130                      Spreadsheet                      2                      2                      3**

Prerequisites: CIS 110 or CIS 111 or OST 137, and MAT 070

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>CTS 135</b>	<b>Integrated Software Intro</b>	<b>2</b>	<b>4</b>	<b>4</b>
Prerequisites: CIS 110 or CIS 111				
Corequisites: None				
This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion, students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.				
<b>CTS 155</b>	<b>Tech Support Functions</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110, DBA 110, and WEB 140				
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 in technical support management techniques and support technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems.				
<b>*CTS 217</b>	<b>Computer Training/Support</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CIS 110, DBA 110, and WEB 140				
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>CTS 220</b>	<b>Advanced Hard/Software Support</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: CTS 120				
Corequisites: None				
This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on configuring and upgrading; diagnosis and troubleshooting; as well as preventative maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventative maintenance, and maintain basic networking on personal computers.				
<b>*CTS 285</b>	<b>Systems Analysis and Design</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: CIS 115, DBA 110 and Department Chair Approval				
Corequisites: None				
This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.				
<b>*CTS 288</b>	<b>Professional Practices in IT</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: CTS 285				
Corequisites: None				
This course provides students with the business skills needed to succeed in the information technology field. Topics include portfolio development, resume design, interviewing techniques and professional practices. Upon completion, students should be able to prepare themselves and their work for a career in the information technology field.				

**\*CTS 289      System Support Project      1      4      3**

Prerequisites: CTS 285

Corequisites: None

This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Course

Descriptions

# **Culinary**

**CUL 110      Sanitation and Safety      2      0      2**

Prerequisites: None

Corequisites: None

This course introduces the basic principles of sanitation and safety and their relationship to the hospitality industry. Topics include personal hygiene, sanitation and safety regulations, use and care of equipment, the principles of food-borne illness, and other related topics. Upon completion, students should be able to demonstrate an understanding of sanitation and safety procedures in the hospitality industry. 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 140 or CUL 142, and 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.

<b>*CUL 135</b>	<b>Food and Beverage Service</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: Select one: CUL 180, CUL 275, HRM 124				
Corequisites: None				
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.				
<b>*CUL 135A</b>	<b>Food and Beverage Service Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: Select one: CUL 180, CUL 275, HRM 124				
Corequisites: CUL 135				
This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.				
<b>*CUL 140</b>	<b>Basic Culinary Skills</b>	<b>2</b>	<b>6</b>	<b>5</b>
Prerequisites: None				
Corequisites: CUL 110, CUL 110A				
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</b>	<b>Fundamentals of Food</b>	<b>2</b>	<b>6</b>	<b>5</b>
Prerequisites: None				
Corequisites: CUL 110, CUL 110A, HRM 124				
This course introduces the student to the basic principles of cooking, baking, and kitchen operations. Topics include protein, starch, vegetable/fruit identification, selection, storage and preparation; breakfast cookery, breads, sweet doughs and pastries; knife/organizational skills, and work coordination. Upon completion, students should be able to execute efficiently a variety of cooking/baking skills as they apply to different stations in the kitchen. Weekly participation in American regional and international buffets, banquets, and a la carte production enhances student service skills.				
<b>*CUL 150</b>	<b>Food Science</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
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</b>	<b>Baking I</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: None				
Corequisites: CUL 110				
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 160A</b>	<b>Baking I Lab</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: CUL 160				
This is a laboratory course to accompany CUL 160. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 160. Upon completion, students should be able to demonstrate a basic proficiency in bakeshop applications.				
<b>*CUL 170</b>	<b>Gardemanger I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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</b>	<b>International and American Regional Cuisine</b>	<b>1</b>	<b>8</b>	<b>5</b>
Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A				
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 185</b>	<b>Spa Cuisine</b>	<b>2</b>	<b>4</b>	<b>4</b>
Prerequisites: CUL 110				
Corequisites: None				
This course introduces students to foods and beverages offered in a spa and wellness setting. Topics include menu development, nutritional analysis and use of supplements, dietary constraints, sensory analysis, and food/beverage preparation techniques. Upon completion, students should be able to develop menus and prepare foods/beverages suitable for a spa and wellness venue. Pending state approval.				
<b>*CUL 214</b>	<b>Wine Appreciation</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: CUL 180 or Department Chair 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 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				
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.				

Course

Descriptions

<b>*CUL 250</b>	<b>Classical Cuisine</b>	<b>1</b>	<b>8</b>	<b>5</b>
Prerequisites: CIS 110, CUL 120, CUL 130, CUL 160, CUL 180 or CUL 275, CUL 270, and HRM 145				
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'hote menus, signature dishes, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting. This course includes weekly a la carte service encompassing contemporary and classical preparation and a capstone final exam.				
<b>*CUL 260</b>	<b>Baking II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 160				
Corequisites: None				
This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.				
<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 pates, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapes, hors d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces.				
<b>CUL 275</b>	<b>Catering Cuisine</b>	<b>1</b>	<b>8</b>	<b>5</b>
Prerequisites: COE 112, CUL 140, CUL 240, CUL 240A				
Corequisites: None				
This course explores sequential steps to successful catering that includes sales, client needs, planning menus, purchasing, costing, pricing events, staffing and sanitation concerns. Emphasis is placed on new culinary competencies and skills specific to catering preparation, presentation, and service. Upon completion, students should be able to demonstrate proficiency in the successful design and execution of various catering events.				
<b>*CUL 285</b>	<b>Competition Fundamentals</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: CUL 110, CUL 110A, and CUL 140 or CUL 160				
Corequisites: None				
This course provides practical expertise in the planning, techniques, and procedures required for culinary competitions and exhibitions. Emphasis is placed on competition strategies including menu planning, teamwork, plate design, flavor profiles, recipe development, nutrition, advanced knife/culinary skills, professionalism and portfolio development. Upon completion, students should be able to apply exhibition/competition skills and standards in the competition arena and professional kitchen.				

## Database Management Technology

<b>DBA 110</b>	<b>Database Concepts</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: CIS 110, CIS 111 or CIS 115				
Corequisites: None				
This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports and forms.				

**DBA 120**

**Database Programming I**

223

Prerequisites: DBA 110  
Corequisites: None  
This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update and produce reports.

Course

**DBA 210**

**Database Administration**

233

Prerequisites: DBA 120  
Corequisites: None  
This course covers database administration issues and distributed database concepts. Topics include database administrator (DBA) goals and functions, backup and recovery, standards and procedures, training, and database security and performance evaluations. Upon completion, students should be able to produce functional DBA documentation and administer a database.

Descriptions

Design Drafting

**\*DDF 211**

**Design Drafting I**

164

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.

Developmental Disabilities

**DDT 110**

**Developmental Disabilities**

3003

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**

4607

Prerequisites: None  
Corequisites: None  
This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to the profession, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures. This is a diploma-level course.

**\*DEN 102**

**Dental Materials**

3405

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>
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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>
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Prerequisites: None

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>
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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>
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Prerequisites: DEN 101

Corequisites: None

This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory, 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>
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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.

<b>DEN 110</b>	<b>Orofacial Anatomy</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
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Prerequisites: None

Corequisites: None

This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

<b>DEN 111</b>	<b>Infection/Hazard Control</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: MAT 070					
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: None					
Corequisites: DEN 101 or DEN 110 and DEN 111 and DEN 121					
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: None					
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: None					
Corequisites: DEN 111 and DEN 120					
This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures. 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: None					
Corequisites: None					
This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.					
<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.					

Course

Descriptions

## Course

## Descriptions

<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: 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.					
<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					
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.					

**DEN 222                    General and Oral Pathology                    2           0           0           2**

Prerequisites: BIO 163 or BIO 165 or BIO 168

Corequisites: None

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.

Course

Descriptions

**DEN 223                    Dental Pharmacology                    2           0           0           2**

Prerequisites: None

Corequisites: Select one: BIO 163, BIO 165 or BIO 168

This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

**\*DEN 224                    Materials and Procedures                    1           3           0           2**

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.

**\*DEN 230                    Dental Hygiene Theory IV                    1           0           0           1**

Prerequisites: DEN 220

Corequisites: DEN 231

This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.

**\*DEN 231                    Dental Hygiene Clinic IV                    0           0           12           4**

Prerequisites: DEN 221

Corequisites: DEN 230

This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

**\*DEN 232                    Community Dental Health                    2           0           3           3**

Prerequisites: COM 231

Corequisites: None

This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, preventative dental care, dental health education, program planning, and financing and utilization of dental services. Upon completion, students should be able to assess, plan, implement, and evaluate a community dental health program.

Prerequisites: None  
Corequisites: None  
This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, resumes, interviews, and legal liabilities as health care professionals. Upon completion, students should be able to demonstrate the ability to practice dental hygiene within established ethical standards and state laws.

Prerequisites: None  
Corequisites: None  
This course provides an opportunity to exhibit interpersonal and job-related skills for effective dental hygiene practice. Emphasis is placed on critical thinking and integration of didactic and clinical components into the workplace. Upon completion, students should be able to demonstrate the knowledge required of any entry-level dental hygienist.

Prerequisites: None  
Corequisites: None  
This course introduces basic drafting skills, terminology, and applications. Topics include basic mathematics, sketching, introduction to CAD, ANSI and ISO drafting standards, and a survey of various drafting applications. Upon completion, students should be able to perform basic calculations for CAD drafting, sketch drawings using appropriate standards, and recognize drawings from different drafting fields.

Prerequisites: None  
Corequisites: None  
This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices.

Prerequisites: None  
Corequisites: None  
This course introduces basic drafting practices used in residential and light commercial design. Topics include floor plans, foundations, details, electrical components, elevations, and dimensioning practice. Upon completion, students should be able to complete a set of working drawings for a simple structure.

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.

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.





Course  
Descriptions

<b>*DFT 253</b>	<b>CAD Data Management</b>	<b>2</b>	<b>2</b>	<b>3</b>
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.				
<b>*DFT 259</b>	<b>CAD Project</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: ARC 112, ARC 113, and DFT 251				
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□, 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

<b>DME 110</b>	<b>Intro to Digital Media</b>	<b>2</b>	<b>2</b>	<b>3</b>
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.				
<b>DME 115</b>	<b>Graphic Design Tools</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: ART 171				
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.				
<b>DME 120</b>	<b>Intro to Multimedia Applications</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: DME 110 and DME 130				
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.				
<b>DME 130</b>	<b>Digital Animation I</b>	<b>2</b>	<b>2</b>	<b>3</b>
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

Descriptions

<b>*DME 285</b>	<b>Systems Projects</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: DME 120, DME 130, DME 140, and DME 210				
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

<b>DRA 111</b>	<b>Theatre Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.

<b>DRA 112</b>	<b>Literature of the Theatre</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.

<b>DRA 120</b>	<b>Voice for Performance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.

<b>DRA 122</b>	<b>Oral Interpretation</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				

This course introduces the dramatistic study of literature through performance. Emphasis is placed on analysis and performance of poetry, drama, and prose fiction. Upon completion, students should be able to embody and discuss critically the speakers inherent in literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

<b>DRA 124</b>	<b>Readers Theatre</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.

Acting I		0	6	3
<b>DRA 130</b>				
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.				
<b>DRA 131</b>	<b>Acting II</b>	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.				
<b>DRA 140</b>	<b>Stagecraft I</b>	0	6	3
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</b>	<b>Stagecraft II</b>	0	6	3
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 145</b>	<b>Stage Make-up</b>	1	2	2
Prerequisites: None				
Corequisites: None				
This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>DRA 170</b>	<b>Play Production I</b>	0	9	3
Prerequisites: None				
Corequisites: None				
This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.				

Course  
Descriptions

<b>DRA 171</b>	<b>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</b>	<b>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</b>	<b>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.				
<b>DRA 240</b>	<b>Lighting for the Theatre</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course is an applied study of theatre lighting and is designed to train theatre technicians. Emphasis is placed on lighting technology including the mechanics of lighting and light control equipment by practical work with lighting equipment. Upon completion, students should be able to demonstrate competence with lighting equipment. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>DRA 250</b>	<b>Theatre Management</b>	<b>1</b>	<b>3</b>	<b>2</b>
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.				

# 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.

## Course Descriptions

## 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 118**      **Teacher Associate Principals and Practices**

**3 0 3**

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.

**EDU 119**      **Intro to Early Childhood Education**

4 0 4

Prerequisites: None

Corequisites: None

This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism, and planning developmentally appropriate programs for children. Topics include historical foundations, program types, career options, professionalism and creating inclusive environments and curriculum that are responsive to the needs of children and families. Upon completion, students should be able to design career plans and develop appropriate schedules, environments and activity plans while incorporating adaptations for children with exceptionalities.

**\*EDU 131      Child, Family, and Community      3      0      3**

Prerequisites: None

Corequisites: None

This course covers the development of partnerships between families, inclusive programs for children/schools that serve young children with and without disabilities, and the community. Emphasis is placed on requisite skills and benefits for successfully establishing, supporting, and maintaining respectful collaborative relationships between today's diverse families, centers/schools, and community resources. Upon completion, students should be able to describe appropriate relationships with parents/caretakers, center/school colleagues, and community agencies that enhance the educational experiences/well-being of all children.

**EDU 144      Child Development I      3      0      3**

Prerequisites: None

Corequisites: None

This course covers the theories of child development, developmental sequences, and factors that influence children's development, from conception through pre-school for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development and the multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical development characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

**\*EDU 145      Child Development II      3      0      3**

Prerequisites: None

Corequisites: None

This course covers theories of child development, developmental sequences, and factors that influence children's development, from pre-school through middle childhood for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developments characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

**\*EDU 146      Child Guidance      3      0      3**

Prerequisites: None

Corequisites: None

This course introduces practical principles and techniques for developmentally appropriate guidance for all children with and without disabilities, including those at risk. Emphasis is placed on encouraging self-esteem, cultural awareness, effective communication skills, direct/ indirect techniques/strategies and observation to understand the underlying causes of behavior. Upon completion, students should be able to demonstrate appropriate interactions with children and families and promote conflict resolution, self-control, self-motivation, and self-esteem in children.

**\*EDU 151      Creative Activities      3      0      3**

Prerequisites: None

Corequisites: EDU 151A

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.



Creative Activities Lab		0	2	1
<b>*EDU 151A</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.				
<b>*EDU 153</b>	<b>Health, Safety, and Nutrition</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: EDU 153A				
This course focuses on promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognition and reporting of abuse and neglect and state regulations. Upon completion, students should be able demonstrate knowledge of health, safety, and nutritional needs, implement safe learning 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.				

**\*EDU 221 Children with Exceptionalities 3 0 3**

Prerequisites: EDU 144 and EDU 145 or PSY 244 and PSY 245

Corequisites: None

This course, based on the foundation of typical development, introduces working with children with exceptionalities. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the learning environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, and work collaboratively with families and professionals to plan, implement, and evaluate inclusion strategies.

**\*EDU 234 Infants, Toddlers, and Twos 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the skills needed to effectively implement group care for infants, toddlers, and 2-year-olds. Emphasis is placed on child development and developmentally appropriate practices. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate a developmentally appropriate curriculum.

**EDU 235 School-Age Dev and Program 2 0 2**

Prerequisites: None

Corequisites: None

This course presents developmentally appropriate practices in group care for school-age children. Topics include principles of development, environmental planning, and positive guidance techniques. Upon completion, students should be able to discuss developmental principles for children five to twelve years of age and plan and implement age-appropriate activities.

**EDU 243 Learning Theory 3 0 3**

Prerequisites: None

Corequisites: None

This course provides lateral entry teachers an introduction to learning theory, various styles of learning, and motivational factors involved in the learning process. Emphasis is placed on the development of cognitive skills using the seven types of intelligence and applying these to practical classroom situations. Upon completion, students should be able to describe theories and styles of learning and discuss the relationship between different types of intelligence to learning motivation.

**\*EDU 259 Curriculum Planning 3 0 3**

Prerequisites: Select one: EDU 112, EDU 113, EDU 119

Corequisites: None

This course covers early childhood curriculum planning. Topics include philosophy, curriculum, indoor and outdoor environmental design, scheduling, observation and assessment, and instructional planning and evaluation. Upon completion, students should be able to assess children and curriculum; plan for daily, weekly, and long-range instruction; and design environments with appropriate equipment and supplies.

**\*EDU 261 Early Childhood Administration I 3 0 3**

Prerequisites: EDU 119 and Department Chair Approval

Corequisites: None

This course covers the policies, procedures, and responsibilities for the management of early childhood education programs. Topics include implementation of goals, principles of supervision, budgeting and financial management, and meeting the standards for a NC Child Day Care license. Upon completion, students should be able to develop program goals, explain licensing standards, determine budgeting needs, and describe effective methods of personnel supervision.

**\*EDU 262      Early Childhood Administration II      3      0      3**

Prerequisites: EDU 261

Corequisites: None

This course provides a foundation for budgetary, financial, and personnel management of the child care center. Topics include budgeting, financial management, marketing, hiring, supervision, and professional development of a child care center. Upon completion, students should be able to formulate marketing, financial management, and fund development plans and develop personnel policies, including supervision and staff development plans.

Course

Descriptions

**EDU 271      Educational Technology      2      2      3**

Prerequisites: CIS 110 or CIS 111

Corequisites: None

This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments.

**EDU 275      Effective Teacher Training      2      0      2**

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.

**\*EDU 280      Language and Literacy Experiences      3      0      3**

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.

**EDU 285      Internship Experience-School Age      1      0      1**

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

**\*EGR 110      Introduction to Engineering Tech      1      2      2**

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.

Course  
Descriptions

<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.				
<b>EGR 125</b>	<b>Application Software for Technicians</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics and Internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the end results in text and graphical formats.				
<b>EGR 130</b>	<b>Engineering Cost Control</b>	<b>2</b>	<b>2</b>	<b>3</b>
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.				
<b>EGR 285</b>	<b>Design Project</b>	<b>0</b>	<b>4</b>	<b>2</b>
Prerequisites: Department Chair Approval				
Corequisites: None				
This course provides the opportunity to design an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate projects.				

Electrical

<b>ELC 111</b>	<b>Introduction to Electricity</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: MAT 060				
Corequisites: None				
This course introduces the fundamental concepts of electricity and test equipment to nonelectrical/electronic majors. Topics include basic DC and AC principles (voltage, resistance, current, impedance); components (resistors, inductors, and capacitors); power; and operation of test equipment. Upon completion, students should be able to construct and analyze simple DC and AC circuits using electrical test equipment.				
<b>ELC 112</b>	<b>DC/AC Electricity</b>	<b>3</b>	<b>6</b>	<b>5</b>
Prerequisites: MAT 070				
Corequisites: None				
This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, troubleshoot, and repair DC/AC circuits.				

<b>ELC 113</b>	<b>Basic Wiring I</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: None				
Corequisites: None				
This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.				
<b>ELC 115</b>	<b>Industrial Wiring</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: ELC 113				
Corequisites: None				
This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.				
<b>ELC 117</b>	<b>Motors and Controls</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: Select one: ELC 111, ELC 112, ELC 131, ELC 138				
Corequisites: None				
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.				
<b>ELC 118</b>	<b>National Electrical Code</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC.				
<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 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 138</b>	<b>DC Circuit Analysis</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces DC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, and analyze DC circuits; and properly use test equipment.				

Course

Descriptions

<b>ELC 139</b>	<b>AC Circuit Analysis</b>	<b>2</b>	<b>3</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include AC voltages, circuit analysis laws and theorems, reactive components and circuits, transformers, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret AC circuit schematics; analyze and troubleshoot AC circuits; and properly use test equipment.				
<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				
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.				
<b>ELC 228</b>	<b>PLC Applications</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: ELC 128				
Corequisites: None				
This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems.				
<b>*ELC 229</b>	<b>Applications Project</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: Department Chair Approval				
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 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.				
<b>ELN 137</b>	<b>Electronic Devices and Circuits</b>	<b>4</b>	<b>3</b>	<b>5</b>
Prerequisites: ELC 131 or ELC 138				
Corequisites: None				
This course covers diodes, transistors, linear integrated circuits, and IC voltage regulators. Topics include power supplies, switching circuits, amplifiers, oscillators, active filters, and other related topics. Upon completion, students should be able to analyze and troubleshoot circuits using schematic diagrams, appropriate test equipment, and manufacturer's data sheets				
<b>ELN 152</b>	<b>Fabrication Techniques</b>	<b>1</b>	<b>3</b>	<b>2</b>
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.				

**ELN 154**

**Introduction to Data Comm**

233

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**

334

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**

334

Prerequisites: ELN 132 or ELN 137

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**

233

Prerequisites: Select One: CET 111, CIS 110, CIS 111, ELC 127

Corequisites: None

This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

**ELN 238**

**Advanced LANs**

233

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.

# Emergency Medical Science

**EMS 110**

**EMT - Basic**

5607

Prerequisites: Enrollment in EMS program

Corequisites: None

This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary for the EMT-Basic certification.

Course

Descriptions

<b>EMS 111</b>	<b>Prehospital Environment</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
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Prerequisites: Enrollment in EMS program

Corequisites: None

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>
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Prerequisites: Enrollment in EMS program

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>
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Prerequisites: BIO 168 and EMS 110, EMS 111 or EMS 115, and enrollment in EMS program

Corequisites: EMS 121 or EMS 122, EMS 130, EMS 131, and BIO 169

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>
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Prerequisites: BIO 168, EMS 110, EMS 111 or EMS 115, and enrollment in EMS program

Corequisites: EMS 120, EMS 130, EMS 131, and BIO 169

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>
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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>
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Prerequisites: BIO 168, EMS 110, and enrollment in EMS program

Corequisites: BIO 169, EMS 120, and EMS 131

This course introduces the fundamental principles of pharmacology and medication administration and is required for intermediate and paramedic certification. Topics include terminology, pharmacokinetics, pharmacodynamics, weights, measures, drug calculations, legislation, and administration routes. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.



<b>EMS 131</b>	<b>Advanced Airway Management</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: BIO 168, EMS 110, and enrollment in EMS program					
Corequisites: BIO 169, 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					
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					
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<sup>1</sup></b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: Enrollment in EMS program					
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.					
<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 EMS 122					
Corequisites: None					
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.					
<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					
Corequisites: EMS 210 and 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.					

Course

Descriptions

## Course

## Descriptions

**EMS 221 EMS Clinical Practicum II 0 0 9 3**

Prerequisites: EMS 121 or EMS 122 and COE 111, EMS 120, EMS 130 and EMS 131

Corequisites: EMS 210 and EMS 220

This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 230 Pharmacology II for EMS 1 3 0 2**

Prerequisites: EMS 130

Corequisites: None

This course explores the fundamental classification and action of common pharmacologic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of chronic and acutely ill patients. Upon completion, students should be able to demonstrate general knowledge of drugs covered during the course.

**EMS 231 EMS Clinical Practicum III 0 0 9 3**

Prerequisites: EMS 221 or EMS 222 and COE 121, EMS 210 and EMS 220

Corequisites: EMS 250 and EMS 260

This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

**EMS 240 Special Needs Patients 1 2 0 2**

Prerequisites: EMS 120, EMS 121 or EMS 122, EMS 130, and EMS 131

Corequisites: EMS 241

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 EMS 122,

EMS 210, EMS 220, and EMS 221

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 EMS 122,  
EMS 210, EMS 220, and EMS 221

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 BTLS or PHTLS courses.

Course  
Descriptions

**EMS 270      Life Span Emergencies      2      2      0      3**

Prerequisites: EMS 120, EMS 130 and EMS 131, EMS 231, EMS 250 and EMS 260

Corequisites: EMS 241

This course, required for paramedic certification, covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies and certify at the Pediatric Advanced Life Support provider level.

**EMS 280      EMS Bridging Course      2      2      0      3**

Prerequisites: Enrollment in EMS Program

Corequisites: None

This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Topics include patient assessment, documentation, twelve-lead ECG analysis, thrombolytic agents, cardiac pacing, and advanced pharmacology. Upon completion, students should be able to perform advanced patient assessment documentation using the problem-oriented medical record format and manage complicated patients.

**EMS 285      EMS Capstone      1      3      0      2**

Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260

Corequisites: EMS 241

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.

Course  
Descriptions

<b>ENG 085</b>	<b>Reading &amp; Writing Found</b>	<b>5</b>	<b>0</b>	<b>5</b>
Prerequisites: ENG 070 and RED 070; or ENG 075				
Corequisites: None				
This course uses whole language to develop proficiency in reading and writing for college. Emphasis is placed on applying analytical and critical reading skills to a variety of texts and on introducing the writing process. Upon completion, students should be able to recognize and use various patterns of text organization and compose effective paragraphs. This course integrates ENG 080 and RED 080. This course does not satisfy the developmental reading and writing prerequisites for ENG 111 or ENG 111A.				
<b>ENG 085A</b>	<b>Reading &amp; Writing Found Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: ENG 070 and RED 070; or ENG 075				
Corequisites: ENG 085				
This laboratory provides the opportunity to practice the skills introduced in ENG 085. Emphasis is placed on practical skills for applying analytical and critical reading skills to a variety of texts and on the writing process. Upon completion, students should be able to apply those skills in the production of effective paragraphs.				
<b>ENG 090</b>	<b>Composition Strategies</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>ENG 090A</b>	<b>Composition Strategies Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
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.				
<b>ENG 095</b>	<b>Reading &amp; Comp Strategies</b>	<b>5</b>	<b>0</b>	<b>5</b>
Prerequisites: ENG 080 and RED 080; or ENG 085				
Corequisites: None				
This course uses whole language to strengthen proficiency in reading and writing for college. Emphasis is placed on applying critical reading skills to narrative and expository texts and on using the writing process. Upon completion, students should be able to comprehend, analyze, and evaluate college texts and to compose essays in preparation for college writing. This course integrates ENG 090 and RED 090. This course satisfies the developmental reading and writing prerequisites for ENG 111 and ENG 111A.				
<b>ENG 095A</b>	<b>Reading &amp; Comp Strategies Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: ENG 080 and RED 080; or ENG 085				
Corequisites: ENG 095				
This laboratory provides the opportunity to practice the skills introduced in ENG 095. Emphasis is placed on practical skills for applying critical reading skills to narrative and expository texts and on the writing process. Upon completion, students should be able to apply those skills in the production of effective essays in preparation for college writing.				

**ENG 102                      Applied Communications II                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course is designed to enhance writing and speaking skills for the work-place. 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.

Course

Descriptions

**ENG 110                      Freshman Composition                      3                      0                      3**

Prerequisites: ENG 090 and RED 080

Corequisites: None

This course is the first course in a series of two designed to develop informative and business writing skills. Emphasis is placed on logical organization of writing, including effective introductions and conclusions, precise use of grammar, and appropriate selection and use of sources. Upon completion, students should be able to produce clear, concise, well-organized short papers.

**ENG 111                      Expository Writing                      3                      0                      3**

Prerequisites: ENG 090, ENG 090A or ENG 095, 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.

**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 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.

**ENG 131 Introduction to Literature 3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, ENG 114

This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities /fine arts.

**ENG 133 Introduction to the Novel 3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, 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.

**ENG 134 Introduction to Poetry 3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, 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.

**ENG 135 Introduction to Short Fiction 3 0 3**

Prerequisites: ENG 111

Corequisites: Select one: ENG 112, ENG 113, 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.

Course

Descriptions

**ENG 231 American Literature I 3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, 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.

**ENG 232 American Literature II 3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, 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.

**ENG 235 Survey of Film as Literature 3 0 3**

Prerequisites: ENG 113

Corequisites: None

This course provides a study of the medium of film with a focus on the historical impact and the various literary genres of movies. Emphasis is placed on an appreciation of film as a form of literature which demonstrates various elements of fiction (character, setting, theme, etc.). Upon completion, students should be able to analyze film critically in various literary contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**ENG 241 British Literature I 3 0 3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

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: Select one: ENG 112, ENG 113, 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: Select one: ENG 112, ENG 113, 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: Select one: ENG 112, ENG 113, 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: Select one: ENG 112, ENG 113, 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: Select one: ENG 112, ENG 113, 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.				
<b>ENG 265</b>	<b>Thematic World Lit I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: Select one: ENG 112, ENG 113, ENG 114				
Corequisites: None				
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.				



**ENG 266                      Thematic World Literature II                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

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.

Course

Descriptions

**ENG 271                      Contemporary Literature                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

This course includes a study of contemporary literature. Emphasis is placed on literary and cultural trends of selected texts. Upon completion, students should be able to interpret, analyze, and respond to the literature. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 272                      Southern Literature                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 273                      African-American Literature                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

This course provides a survey of the development of African-American literature from its beginnings to the present. Emphasis is placed on historical and cultural context, themes, literary traditions, and backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and respond to selected texts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

**ENG 274                      Literature by Women                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**ENG 275                      Science Fiction                      3                      0                      3**

Prerequisites: Select one: ENG 112, ENG 113, ENG 114

Corequisites: None

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.

# Fire Protection Technology

Course  
Descriptions

<b>FIP 120</b>	<b>Introduction to Fire Protection</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>FIP 124</b>	<b>Fire Prevention and Public Education</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>FIP 128</b>	<b>Detection and Investigation</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>FIP 132</b>	<b>Building Construction</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>FIP 136</b>	<b>Inspections and Codes</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>FIP 140</b>	<b>Industrial Fire Protection</b>	<b>3</b>	<b>0</b>	<b>3</b>
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</b>	<b>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.				

**FIP 220 Fire Fighting Strategies 3 0 3**

Prerequisites: None

Corequisites: None

This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.

Course

Descriptions

**FIP 224 Instructional Methodology 4 0 4**

Prerequisites: None

Corequisites: None

This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 Fire Service Instructor Level Two.

**FIP 228 Local Government Finance 3 0 3**

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.

**FIP 230 Chemistry of Hazardous Materials I 5 0 5**

Prerequisites: None

Corequisites: None

This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.

**FIP 232 Hydraulics and Water Distribution 2 2 3**

Prerequisites: MAT 115

Corequisites: None

This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.

**FIP 236 Emergency Management 3 0 3**

Prerequisites: None

Corequisites: None

This course covers the four phases of emergency management: mitigation, preparedness, response, and recovery. Topics include organizing for emergency management, coordinating for community resources, public sector liability, and the roles of government agencies at all levels. Upon completion, students should be able to demonstrate an understanding of comprehensive emergency management and the integrated emergency management system.

**FIP 240 Fire Service Supervision 3 0 3**

Prerequisites: None

Corequisites: None

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>
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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>
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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.

## French

<b>FRE 111</b>	<b>Elementary French I</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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>
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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.

<b>FRE 211</b>	<b>Intermediate French I</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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. 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 212</b>	<b>Intermediate French II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

# Film and Video Production

**FVP 212      Production Techniques I      1      12      5**

Prerequisites: None

Corequisites: None

This course provides experience working in a variety of crew positions with both student and professional productions and covers advanced film production concepts. Emphasis is placed on successful interaction with other advanced students and/or professionals as well as competency in advanced film production concepts. Upon completion, students should be able to demonstrate professional skills needed to pursue careers in the film and video industry.

Course

Descriptions

## 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.

## 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 113      Historical Geology      3      2      4**

Prerequisites: GEL 111 or GEL 120

Corequisites: None

This course covers the geological history of the earth and its life forms. Emphasis is placed on the study of rock strata, fossil groups, and geological time. Upon completion, students should be able to identify major fossil groups and associated rock strata and approximate ages of geological formations. This course has been approved to satisfy the Comprehensive Articulation Agreement general educational core requirement in natural sciences/mathematics.

Course

Descriptions

<b>GEL 230</b>	<b>Environmental Geology</b>	<b>3</b>	<b>2</b>	<b>4</b>
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.				

German

<b>GER 111</b>	<b>Elementary German I</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>GER 112</b>	<b>Elementary German II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>GER 141</b>	<b>Culture and Civilization</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: GER 111				
Corequisites: None				
This course, taught in English, provides an opportunity to explore issues related to the German-speaking world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the German-speaking world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.				
<b>GER 211</b>	<b>Intermediate German I</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				

<b>GER 212</b>	<b>Intermediate German II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

Course

Descriptions

<b>GER 221</b>	<b>German Conversation</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Prerequisites: GER 212  
 Corequisites: None

This course provides an opportunity for intensive communication in spoken German. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

# Geographic Information Systems

<b>GIS 111</b>	<b>Introduction to GIS</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: None  
 Corequisites: None

This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, product/applications, and differences between database models and between raster and vector systems.

<b>GIS 112</b>	<b>Introduction to GPS</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: None  
 Corequisites: None

This course provides an overview of Global Positioning Systems (GPS). Topics include the theory, implementation, and operations of GPS, as well as alternate data source remote sensing. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GPS.

<b>GIS 121</b>	<b>Georeferencing and Mapping</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: None  
 Corequisites: None

This course introduces coordinate systems, fundamentals of surveying, and cartography. Topics include the theory, acquisition, and use of locational data using both continuous and discrete georeferencing methods. Upon completion, students should be able to identify appropriate coordinate systems for a situation and translate data into correct map form.

<b>GIS 125</b>	<b>CAD for GIS</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: None  
 Corequisites: None

This course introduces the concepts of Computer Aided Drafting (CAD) as well as software that is used for building geographic data for a GIS. Emphasis is placed on the learning of basic commands used in building spatial data. Upon completion, students will be able to operate within a CAD environment.

Course

Descriptions

<b>GIS 215</b>	<b>GIS Data Models</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: GIS 111 and GIS 121				
Corequisites: None				
This course covers interpreting and understanding of a variety data formats available in GIS. Topics include the similarities and differences between data models as well as how data is treated differently within each format, to include the conversion of data between different environments. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GIS data storage and interoperability.				

Health

<b>HEA 110</b>	<b>Personal Health/Wellness</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				

<b>HEA 112</b>	<b>First Aid and CPR</b>	<b>1</b>	<b>2</b>	<b>2</b>
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.				

<b>HEA 120</b>	<b>Community Health</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
Prerequisites: None					
Corequisites: None					
This course provides information about contemporary community health and school hygiene issues. Topics include health education and current information about health trends. Upon completion, students should be able to recognize and devise strategies to prevent today’s community health problems. . This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.					

Heavy Equipment and Transport Technology

<b>*HET 110</b>	<b>Diesel Engines</b>	<b>3</b>	<b>9</b>	<b>6</b>
Prerequisites: None				
Corequisites: None				
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.				

<b>*HET 112</b>	<b>Diesel Electrical Systems</b>	<b>3</b>	<b>6</b>	<b>5</b>
Prerequisites: None				
Corequisites: None				
This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.				



**\*HET 114      Power Trains      3      6      5**

Prerequisites: None

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.

**\*HET 115      Electronic Engines      2      3      3**

Prerequisites: None

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.

**\*HET 116      Air Conditioning/Diesel Equipment      1      2      2**

Prerequisites: None

Corequisites: None

This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.

**\*HET 118      Mechanical Orientation      2      0      2**

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.

**\*HET 119      Mechanical Transmissions      2      2      3**

Prerequisites: None

Corequisites: None

This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

**\*HET 125      Preventive Maintenance      1      3      2**

Prerequisites: None

Corequisites: None

This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

**\*HET 128      Medium/Heavy Duty Tune-Up      1      2      2**

Prerequisites: None

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.

Course

Descriptions

	<b>*HET 231      Medium/Heavy Duty Brake Systems</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None Corequisites: None			
Course	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.			
Descriptions	<b>*HET 233      Suspension and Steering</b>	<b>2</b>	<b>4</b>	<b>4</b>
	Prerequisites: None Corequisites: None			
	This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.			

History

	<b>HIS 111      World Civilizations I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.			
	<b>HIS 112      World Civilizations II</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.			
	<b>HIS 115      Introduction to Global History</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course introduces the study of global history. Emphasis is placed on topics such as colonialism, industrialism, and nationalism. Upon completion, students should be able to analyze significant global historical issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.			
	<b>HIS 131      American History I</b>	<b>3</b>	<b>0</b>	<b>3</b>
	Prerequisites: None Corequisites: None			
	This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.			

**HIS 132**

**American History II**

303

Prerequisites: None

Corequisites: None

This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

Course  
Descriptions

**HIS 162**

**Women and History**

303

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.

**HIS 227**

**Native American History**

303

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**

303

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**

202

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.

<b>*HRM 120</b>	<b>Front Office Procedures</b>	<b>3</b>	<b>0</b>	<b>3</b>
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.				
<b>*HRM 120A</b>	<b>Front Office Procedures Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
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.				
<b>HRM 124</b>	<b>Introduction to Service Mgt.</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: CUL 142				
This course is designed to provide an introduction to the culture of dining room service management. Emphasis is placed on dignity of service work, psychology of service, dining room organization, service delivery and modeling management roles in a dining room environment. Upon completion, students should be able to demonstrate an understanding of the guest/server dynamic and apply these principles in a dining room setting.				
<b>*HRM 130</b>	<b>Bed and Breakfast Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
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</b>	<b>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</b>	<b>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</b>	<b>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 210</b>	<b>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</b>	<b>Restaurant Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: CUL 135, CUL 135A and HRM 124				
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 demonstrate an understanding of the operation of a restaurant.				
<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 124				
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: None				
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.				

Course

Descriptions

<b>*HRM 280</b>	<b>Hospitality Management Problems</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: ACC 120, CIS 110, COE 112, CUL 142, HRM 110, HRM 120, HRM 135, HRM 145, HRM 215, HRM 225, HRM 240				
Corequisites: HRM 210				
This course addresses timely issues in the hospitality industry and is intended to move students into managerial thinking. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers.				

## Human Services

<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.					
<b>*HSE 112</b>	<b>Group Process I</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>
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</b>	<b>Interviewing Techniques</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
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</b>	<b>Counseling</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
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</b>	<b>Human Services Issues</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: Department Chair Approval					
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.					

**\*HSE 220 Case Management**

2 2 0 3

Prerequisites: HSE 110

Corequisites: None

This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services.

Course

**\*HSE 225      Crisis Intervention**

**3 0 0 3**

Prerequisites: None

Corequisites: None

This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

## Descriptions

# A.A.S. Humanities/Fine Arts General Education Electives

The following courses are classified as Humanities/Fine Arts for A.A.S. degree programs. A.A.S. students may take any course on this list. College transfer students (A.A., A.S., A.F.A.) should select general education courses listed on pages 228-237 of the catalog.

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 122 Oral Interpretation
- DRA 124 Readers Theatre
- DRA 211 Theatre History I
- DRA 212 Theatre History II

**ENGLISH\***

- ENG 131 Introduction to Literature
- ENG 231 American Literature I
- ENG 232 American Literature II
- ENG 241 British Literature I
- ENG 242 British Literature II
- ENG 243 Major British Writers
- ENG 261 World Literature I
- ENG 262 World Literature II

*\*English literature courses may be taken with advisor's approval. All prerequisites must be met.*

**HUMANITIES**

- HUM 110 Technology and Society
- HUM 115 Critical Thinking
- HUM 120 Cultural Studies
- HUM 122 Southern Culture
- HUM 123 Appalachian Culture
- HUM 130 Myth and Human Culture
- HUM 150 American Women's Studies
- HUM 160 Introduction to Film
- HUM 211 Humanities I
- HUM 212 Humanities II
- HUM 220 Human Values and Meaning

**MUSIC**

- MUS 110 Music Appreciation
- MUS 113 American Music
- MUS 114 Non-Western Music

**PHILOSOPHY**

- PHI 210 History of Philosophy
- PHI 215 Philosophical Issues
- PHI 230 Introduction to Logic
- PHI 240 Introduction to Ethics

**RELIGION**

- REL 110 World Religions
- REL 211 Intro to Old Testament
- REL 212 Intro to New Testament

**FOREIGN LANGUAGES**

A.A.S. students may take a two-semester foreign language sequence to satisfy the Humanities/Fine Arts requirement:

- FRE 111 and FRE 112 Elementary French
- GER 111 and GER 112 Elementary German
- SPA 111 and SPA 112 Elementary Spanish



# Humanities

**HUM 110      Technology and Society      3      0      3**

Prerequisites: None

Corequisites: None

This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

Course

Descriptions

**HUM 115      Critical Thinking      3      0      3**

Prerequisites: ENG 095 or ENG 090 and RED 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.

**HUM 120      Cultural Studies      3      0      3**

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.

**HUM 122      Southern Culture      3      0      3**

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.

**HUM 123      Appalachian Culture      3      0      3**

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.

**HUM 130      Myth in Human Culture      3      0      3**

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.

Course  
Descriptions

<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.				

# Hydraulics

**\*HYD 110                    Hydraulics/Pneumatics I**                    **2            3            3**

Prerequisites: MAT 121 or MAT 161  
Corequisites: None

This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

Course  
Descriptions

**HYD 112                    Hydraulics/Medium/Heavy Duty**                    **1            2            2**

Prerequisites: None  
Corequisites: None

This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.

# Industrial Science

**ISC 121                    Environmental Health and Safety**                    **3            0            3**

Prerequisites: None  
Corequisites: None

This course covers workplace environmental health and safety concepts. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental health and safety.

**ISC 132                    Mfg Quality Control**                    **2            3            3**

Prerequisites: None  
Corequisites: None

This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment.

# Machining

**MAC 111                    Machining Technology I**                    **2            12            6**

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.

**MAC 112                    Machining Technology II**                    **2            12            6**

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

<b>MAC 113</b>	<b>Machining Technology III</b>	<b>2</b>	<b>12</b>	<b>6</b>
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.				
<b>MAC 114</b>	<b>Introduction to Metrology</b>	<b>2</b>	<b>0</b>	<b>2</b>
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</b>	<b>Machine Shop Basic</b>	<b>1</b>	<b>3</b>	<b>2</b>
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</b>	<b>Introduction to CNC</b>	<b>2</b>	<b>0</b>	<b>2</b>
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</b>	<b>CNC Turning</b>	<b>1</b>	<b>3</b>	<b>2</b>
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</b>	<b>CNC Milling</b>	<b>1</b>	<b>3</b>	<b>2</b>
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</b>	<b>Machining Calculations</b>	<b>1</b>	<b>2</b>	<b>2</b>
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</b>	<b>Advanced Machining Calculations</b>	<b>1</b>	<b>2</b>	<b>2</b>
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 222</b>	<b>Advanced CNC Turning</b>	<b>1</b>	<b>3</b>	<b>2</b>
Prerequisites: MAC 122				
Corequisites: None				
This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.				
<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: Select one: MAC 121, MAC 122, MAC 124, 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.				

Course

Descriptions

**MAC 247      Production Tooling****2      0      2**

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.

**Mathematics****MAT 060      Essential Mathematics****3      2      4**

Prerequisites: MAT 050 or placement

Corequisites: RED 080 or placement

This course is a comprehensive study of mathematical skills which should provide a strong mathematical foundation to pursue further study. Topics include principles and applications of decimals, fractions, percents, ratio and proportion, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant, multi-step mathematical problems using technology where appropriate. The operation of a scientific calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 070      Introductory Algebra****3      2      4**

Prerequisites: MAT 060 or placement

Corequisites: RED 080 or ENG 085 or placement

This course establishes a foundation in algebraic concepts and problem solving. Topics include signed numbers, exponents, order of operations, simplifying expressions, solving linear equations and inequalities, graphing, formulas, polynomials, factoring, and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 080      Intermediate Algebra****3      2      4**

Prerequisites: MAT 070 or placement

Corequisites: RED 080 or ENG 085 or placement

This course continues the study of algebraic concepts with emphasis on applications. Topics include factoring; rational expressions; rational exponents; rational, radical, and quadratic equations; systems of equations; inequalities; graphing; functions; variations; complex numbers; and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

**MAT 090      Accelerated Algebra****3      2      4**

Prerequisites: MAT 060

Corequisites: RED 080 or ENG 085

This course covers algebraic concepts with emphasis on applications. Topics include those covered in MAT 070 and MAT 080. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology.

**MAT 101      Applied Mathematics I****2      2      3**

Prerequisites: Select one: MAT 060, MAT 070, MAT 080, MAT 090, MAT 095

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.

**MAT 115 Mathematical Models 2 2 3**

Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

Corequisites: None

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.

Course  
Descriptions

**MAT 121 Algebra/Trigonometry I 2 2 3**

Prerequisites: Select one: MAT 070, MAT 080, MAT 090, MAT 095

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.

**MAT 122 Algebra/Trigonometry II 2 2 3**

Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 175

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: Select one: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

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: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, MAT 175

Corequisites: MAT 151A

This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative option).

**MAT 151A      Statistics I Lab      0      2      1**

Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, MAT 175

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.

**MAT 161      College Algebra      3      0      3**

Prerequisites: Select one: MAT 080, MAT 090, MAT 095

Corequisites: MAT 161A

This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on applications involving equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics for the A.A. degree.

**MAT 161A      College Algebra Lab      0      2      1**

Prerequisites: Select one: MAT 080, MAT 090, MAT 095

Corequisites: MAT 161

This course is a laboratory for MAT 161. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 167      Discrete Mathematics      3      0      3**

Prerequisites: Select one: MAT 121, MAT 161, MAT 171, MAT 280

Corequisites: None

This course is a study of discrete mathematics with emphasis on applications. Topics include number systems, combinations/permutations, mathematical logic/proofs, sets/counting, Boolean algebra, mathematical induction, trees/graphs, and algorithms. Upon completion, students should be able to demonstrate competence in the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**MAT 171      Precalculus Algebra      3      0      3**

Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161

Corequisites: MAT 171A

This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**MAT 171A      Precalculus Algebra Lab      0      2      1**

Prerequisites: Select one: MAT 080, MAT 090, MAT 095, MAT 161

Corequisites: MAT 171

This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.



**MAT 172      Precalculus Trigonometry      3      0      3**

Prerequisites: MAT 171

Corequisites: MAT 172A

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.

Course

Descriptions

**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: Select one: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, MAT 175

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 223      Applied Calculus      2      2      3**

Prerequisites: MAT 122

Corequisites: None

This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results.

**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.

Course  
Descriptions

**MAT 272**

**Calculus II**

324

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**

324

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.

**MAT 280**

**Linear Algebra**

303

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**

303

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**

122

Prerequisites: None  
Corequisites: None

This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

**\*MEC 111      Machine Processes I      1      4      3**

Prerequisites: None

Corequisites: None

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances.

**MEC 130      Mechanisms      2      2      3**

Prerequisites: None

Corequisites: None

This course introduces the purpose and action of various mechanical devices. Topics include cams, cables, gear trains, differentials, screws, belts, pulleys, shafts, levers, lubricants, and other devices. Upon completion, students should be able to analyze, maintain, and troubleshoot the components of mechanical systems.

**MEC 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.

**MEC 231      Computer-Aided Manufacturing I      1      4      3**

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.

**MEC 232      Computer-Aided Manufacturing II      1      4      3**

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.

**MEC 260      Fundamentals of Machine Design      2      3      3**

Prerequisites: CIV 110

Corequisites: None

This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make component selections from manufacturers' catalogs.

Course

Descriptions

Course

Descriptions

**MEC 267**

**Thermal Systems**

223

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.

# Medical Transcription

**MED 120**

**Survey of Medical Terminology**

2002

Prerequisites: None  
Corequisites: None  
This course introduces the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.

**MED 121**

**Medical Terminology I**

3003

Prerequisites: None  
Corequisites: None  
This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

**MED 122**

**Medical Terminology II**

3003

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**

3003

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**

3003

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 123

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

Course	Descriptions	<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					
		This course is designed to introduce all aspects of the medical laboratory profession. Topics include health care/laboratory organization, professional ethics, basic laboratory techniques, safety, quality assurance, and specimen collection. Upon completion, students should be able to demonstrate a basic understanding of laboratory operations and be able to perform basic laboratory skills.					
		<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.					

**MLT 140 Introduction to Microbiology 2 3 0 3**

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.

Course

Descriptions

**MLT 215 Professional Issues 1 0 0 1**

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.

**MLT 240 Special Clinic Microbiology 2 3 0 3**

Prerequisites: MLT 140

Corequisites: None

This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

**\*MLT 252 MLT Practicum I\*\* 0 0 6 2**

Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT120, MLT 126, MLT 130, MLT 240, 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.

**\*MLT 254 MLT Practicum I\*\* 0 0 12 4**

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.

**\*MLT 255 MLT Practicum I\*\* 0 0 15 5**

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.

**\*MLT 261 MLT Practicum II\*\* 0 0 3 1**

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.

## Course

## Descriptions

**\*MLT 265      MLT Practicum II\*\*      0      0      15      5**

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 hematology.

**\*MLT 275      MLT Practicum III\*\*      0      0      15      5**

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.

## Maintenance

**MNT 110      Intro to Maint Procedures      1      3      2**

Prerequisites: None

Corequisites: None

This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

**MNT 111      Maintenance Practices      2      2      3**

Prerequisites: None

Corequisites: None

This course provides in-depth theory and practical applications relating to predictive and preventive maintenance programs. Emphasis is placed on equipment failure analysis, maintenance management software, and techniques such as vibration and infrared analysis. Upon completion, students should be able to demonstrate an understanding of modern analytical and documentation methods.

## Therapeutic Massage

**MTH 110      Fundamentals of Massage      6      12      10**

Prerequisites: None

Corequisites: None

This course introduces concepts basic to the role of the massage therapist. Emphasis is placed on beginning theory and techniques of body work as well as skill in therapeutic touch. Upon completion of the course, the student should be able to apply basic practical massage therapy skills.

**MTH 120      Therapeutic Massage Applications      6      12      10**

Prerequisites: MTH 110

Corequisites: None

This course provides an expanded knowledge and skill base for the massage therapist. Emphasis is placed on selected therapeutic approaches throughout the lifespan. Upon completion, students should be able to perform entry level therapeutic massage on various populations.



<b>MTH 125</b>	<b>Ethics of Massage</b>	<b>2</b>	<b>0</b>	<b>2</b>
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Prerequisites: None

Corequisites: None

This course is designed to explore issues related to the practice of massage therapy. Emphasis is placed on ethical, legal, professional, and political issues. Upon completion students should be able to discuss issues relating to the practice of massage therapy, client/therapist relationships as well as ethical issues.

Course

<b>MTH 210</b>	<b>Advanced Skills of Massage</b>	<b>4</b>	<b>12</b>	<b>8</b>
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Prerequisites: MTH 120

Corequisites: None

This course provides knowledge and skills in diverse body work modalities. Emphasis is placed on selected techniques such as Neuromuscular Therapy, Sports Massage, Soft Tissue Release, Spa Approaches, Oriental Therapies, and energy techniques. Upon completion, students should be able to perform basic skills in techniques covered.

## Descriptions

<b>MTH 220</b>	<b>Outcome-Based Massage</b>	<b>4</b>	<b>9</b>	<b>7</b>
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Prerequisites: MTH 120

Corequisites: None

This course provides knowledge and skills in more complex body works modalities. Emphasis is placed on developing advanced skills in outcome-based Massage. Upon completion, students should be able to perform basic skills in techniques covered.

## Music

<b>MUS 110</b>	<b>Music Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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>
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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>
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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.

Course  
Descriptions

**MUS 121**

**Music Theory I**

324

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**

324

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.

Networking Technology

**NET 110**

**Networking Concepts**

223

Prerequisites: None  
Corequisites: None

This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This course is also available through the Virtual Learning Community (VLC).

**NET 125**

**Networking Basics**

143

Prerequisites: None  
Corequisites: None

This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. This is the first course in the Cisco Networking Academy Program's CCNA sequence.

**NET 126**

**Routing Basics**

143

Prerequisites: NET 125  
Corequisites: None

This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs. This is the second course in the Cisco Networking Academy Program's CCNA sequence.

## NET 175 WirelessTechnology

**2 2 3**

**Prerequisites:** NET 110 or NET 125 and NET 126

Corequisites: None

This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications. This is a Cisco Networking Academy Program course.

## Course Descriptions

## NET 225 Routing and Switching I

**1      4      3**

Prerequisites: NET 126

Corequisites: None

This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in pre-requisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP. This is the third course in the Cisco Networking Academy Program's CCNA sequence.

## NET 226      Routing and Switching II

**1      4      3**

Prerequisites: NET 225

Corequisites: None

This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol. This is the fourth course in the Cisco Networking Academy Program's CCNA sequence.

**NET 260**      **Internet Development and Support**

**3 0 3**

**Prerequisites:** NET 110 or NET 125, and NOS 120, NOS 130

**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.

## NET 270 Building Scalable Networks

**1      4      3**

Prerequisites: NET 226

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. This is the first course in the Cisco Networking Academy Program's CCNP sequence.

Course  
Descriptions

**NET 271**

**Remote Access Networks**

143

Prerequisites: NET 226  
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. This is the second course in the Cisco Networking Academy Program's CCNP sequence.

**NET 272**

**Multi-Layer Networks**

143

Prerequisites: NET 226  
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. This is the third course in the Cisco Networking Academy Program's CCNP sequence.

**NET 273**

**Internetworking Support**

143

Prerequisites: NET 226  
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. This is the fourth course in the Cisco Networking Academy Program's CCNP sequence.

**NET 289**

**Networking Project**

143

Prerequisites: NOS 220 and NOS 231  
Corequisites: NET 226

This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Networking Operating Systems

**NOS 110**

**Operating Systems Concepts**

233

Prerequisites: None  
Corequisites: None

This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems. The course will include file management and simple user creation under at least two operating systems.

**NOS 120 Linux/UNIX Single User****2 2 3**

Prerequisites: NOS 110

Corequisites: None

This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles. This is a Red Hat Academy course.

Course  
Descriptions**NOS 130 Windows Single User****2 2 3**

Prerequisites: NOS 110

Corequisites: None

This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

**NOS 220 Linux/UNIX Admin I****2 2 3**

Prerequisites: NOS 120

Corequisites: None

This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network. This is a Red Hat Academy course.

**NOS 221 Linux/UNIX Admin II****2 2 3**

Prerequisites: NOS 220

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. This is a Red Hat Academy course.

**NOS 230 Windows Admin I****2 2 3**

Prerequisites: NOS 130

Corequisites: None

This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

**NOS 231 Windows Admin II****2 2 3**

Prerequisites: NOS 230

Corequisites: None

This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment.

<b>NOS 240</b>	<b>Novell Admin I</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: NOS 110				
Corequisites: None				
This course will introduce students to the Novell network operating system. Topics include installing and using NetWare, managing printing, storage space, implementing internet services, and managing security. Upon completion, students should have basic knowledge about implementing NetWare and using its management tools.				

## Nursing

<b>*NUR 101</b>	<b>Practical Nursing I</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>11</b>
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.					
<b>*NUR 102</b>	<b>Practical Nursing II</b>	<b>8</b>	<b>0</b>	<b>12</b>	<b>12</b>
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.					
<b>*NUR 103</b>	<b>Practical Nursing III</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>10</b>
Prerequisites: CIS 110, ENG 102, and 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.					
<b>*NUR 115</b>	<b>Fundamentals of Nursing</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>5</b>
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.					
<b>*NUR 116</b>	<b>Nursing of Older Adults</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>4</b>
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					
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.					
<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: 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.					

Course  
Descriptions

Course

Descriptions

**\*NUR 189**

**Nursing Transition**

1

3

0

2

Prerequisites: Admission to the Associate Degree Nursing Bridge Program  
Corequisites: None  
This course is designed to assist the licensed practical nurse in transition to the role of the associate degree nurse. Topics include the role of the registered nurse, nursing process, homeostasis, and validation of selected nursing skills and physical assessment. Upon completion, students should be able to articulate into the ADN program at the level of the generic student.

**\*NUR 235**

**Adult Nursing II**

4

3

15

10

Prerequisites: CIS 110, ENG 114, NUR 125, NUR 135 and NUR 255  
Corequisites: None  
This course provides expanded concepts related to nursing care for individuals experiencing common complex alterations in health. Emphasis is placed on the nurse's role as a member of a multi-disciplinary team and as a manager of care for a group of individuals. Upon completion, students should be able to provide comprehensive nursing care for groups of individuals with common complex alterations in health.

**\*NUR 255**

**Professional Issues**

3

0

0

3

Prerequisites: SOC 215  
Corequisites: None  
This course explores basic concepts of practice in the management of patient care in a complex health care system. Emphasis is placed on professional, legal, ethical, and political issues and management concepts. Upon completion, students should be able to articulate professional and management concepts.

Office Systems Technology

**OST 080**

**Basic Keyboarding**

1

2

2

Prerequisites: None  
Corequisites: None  
This course is designed to develop elementary keyboarding skills. Emphasis is placed on mastery of the keyboard. Upon completion, students should be able to demonstrate basic proficiency in keyboarding.

**OST 131**

**Keyboarding**

1

2

2

Prerequisites: None  
Corequisites: None  
This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. Students should be able to complete timed writing competencies consisting of three timed writings at 25 nwam for three minutes with three or fewer errors and 160 keystrokes per minute for two minutes with two or less errors on the numeric keypad using the touch system.

**OST 132**

**Keyboard Skill Building**

1

2

2

Prerequisites: OST 134  
Corequisites: None  
This course provides accuracy and speed-building drills. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed. Students should be able to complete timed writing competencies consisting of three timed writings at 60 nwam for five minutes with five or fewer errors using the touch system.



**OST 134                      Text Entry and Formatting                      2                      2                      3**

Prerequisites: None

Corequisites: None

This course is designed to provide the skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce mailable documents. Students will be able to complete timed writings at speeds commensurate with employability. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed. Students should be able to complete timed writing competencies consisting of three timed writings at 40 n/wam for five minutes with five or fewer errors using the touch system.

Course

Descriptions

**OST 136                      Word Processing                      1                      2                      2**

Prerequisites: None

Corequisites: None

This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. Upon course entrance, a keyboarding proficiency test requiring 25 g/wam at 98 percent accuracy using the touch system will be administered.

**OST 137                      Office Software Applications                      1                      2                      2**

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.

**OST 148                      Medical Coding, Billing, and Insurance                      3                      0                      3**

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.

**\*OST 149                      Medical Legal Issues                      3                      0                      3**

Prerequisites: None

Corequisites: None

This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

**OST 164                      Text Editing Applications                      3                      0                      3**

Prerequisites: None

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.

**OST 184                      Records Management                      1                      2                      2**

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.

## Course

## Descriptions

<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				
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 or OST 142, and 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 and 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 164 and either OST 134 or OST 136				
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.				

## Phlebotomy

**\*PBT 100      Phlebotomy Technology      5      2      0      6**

Prerequisites: Enrollment in the Phlebotomy Technology program and RED 090  
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.

Course  
Descriptions

**\*PBT 101      Phlebotomy Practicum      0      0      9      3**

Prerequisites: Enrollment in the Phlebotomy Technology program  
Corequisites: PBT 100

This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings. This is a certificate-level course.

## Physical Education

**PED 110      Fit and Well for Life      1      2      2**

Prerequisites: None  
Corequisites: None

This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 111      Physical Fitness I      0      3      1**

Prerequisites: None  
Corequisites: None

This course provides an individualized approach to physical fitness utilizing the five major components. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement an individualized physical fitness program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**PED 112      Physical Fitness II      0      3      1**

Prerequisites: PED 111  
Corequisites: None

This course is an intermediate-level fitness class. Topics include specific exercises contributing to fitness and the role exercise plays in developing body systems. Upon completion, students should be able to implement and evaluate an individualized physical fitness program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

<b>PED 113</b>	<b>Aerobics I</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 114</b>	<b>Aerobics II</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: PED 113				
Corequisites: None				
This course provides a continuation of a program of cardiovascular fitness involving rhythmic exercise. Emphasis is placed on a wide variety of aerobic activities which include cardiovascular efficiency, strength, and flexibility. Upon completion, students should be able to participate in and design a rhythmic aerobic exercise routine. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<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.				

Circuit Training		0	3	1
<b>PED 119</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 Walking for Fitness</b>		0	3	1
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.				
<b>PED 121 Walk, Jog, Run</b>		0	3	1
Prerequisites: None Corequisites: None This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.				
<b>PED 122 Yoga I</b>		0	2	1
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 Yoga II</b>		0	2	1
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 Self-Defense - Beginning</b>		0	2	1
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.				

Course

Descriptions

<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 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.				
<b>PED 140</b>	<b>Bowling - Intermediate</b>	<b>0</b>	<b>2</b>	<b>1</b>
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.				

Course

Descriptions

Course

Descriptions

<b>PED 148</b>	<b>Softball</b>	<b>0</b>	<b>2</b>	<b>1</b>
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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.

<b>PED 170</b>	<b>Backpacking</b>	<b>0</b>	<b>2</b>	<b>1</b>
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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.

<b>PED 171</b>	<b>Nature Hiking</b>	<b>0</b>	<b>2</b>	<b>1</b>
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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.

<b>PED 210</b>	<b>Team Sports</b>	<b>0</b>	<b>3</b>	<b>1</b>
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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.

<b>PED 215</b>	<b>Outdoor Cycling</b>	<b>0</b>	<b>2</b>	<b>1</b>
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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.

<b>PED 217</b>	<b>Pilates I</b>	<b>0</b>	<b>2</b>	<b>1</b>
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Prerequisites: None

Corequisites: None

This course provides an introduction to the pilates method of body conditioning exercise. Topics include instruction in beginning and intermediate pilates exercises using a mat or equipment, history of the pilates method, and relevant anatomy and physiology. Upon completion, students should be able to perform beginning and intermediate exercises, and possess an understanding of the benefits of conditioning the body's core muscles. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.



<b>PED 218</b>	<b>Pilates II</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: PED 217				
Corequisites: None				
This course provides continued instruction to the pilates method of body conditioning exercise. Topics include instruction in intermediate and advanced pilates exercises using a mat or equipment, relevant anatomy and physiology, and further discussion of related concepts. Upon completion, students should be able to perform intermediate and advanced exercises, and possess the autonomy to maintain their own personal pilates practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>PED 220</b>	<b>Exercise for Physically Challenged</b>	<b>0</b>	<b>2</b>	<b>1</b>
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.				
<b>PED 230</b>	<b>Shotokan Karate</b>	<b>0</b>	<b>3</b>	<b>1</b>
Prerequisites: None				
Corequisites: None				
This course introduces martial arts using the Shotokan Karate form. Topics include proper conditioning exercises, proper terminology, historical foundations, etiquette and drills. Upon completion, students should be able to perform skills and techniques related to this form of martial arts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.				
<b>PED 254</b>	<b>Coaching Basketball</b>	<b>1</b>	<b>2</b>	<b>2</b>
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.				
<b>PED 256</b>	<b>Coaching Baseball</b>	<b>1</b>	<b>2</b>	<b>2</b>
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

Course  
Descriptions

**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.

# 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.

Course

Descriptions

**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, MAT 161, MAT 171, or MAT 175  
Corequisites: None

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

**PHY 151      College Physics I** 3      2      4

Prerequisites: MAT 161 or MAT 171  
Corequisites: None

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

Course  
Descriptions

**PHY 152**

**College Physics II**

324

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.

**\*PHY 251**

**General Physics I**

334

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.

**\*PHY 252**

**General Physics II**

334

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

**PLA 110**

**Introduction to Plastics**

202

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.

**PLA 120**

**Injection Molding**

233

Prerequisites: None  
Corequisites: None

This course provides theory and processing experience with the injection molding process. Topics include machine type, molds, controls, machine-polymer part relationship, molding factors, troubleshooting, and molding problems/solutions. Upon completion, students should be able to demonstrate an understanding of machine setup and operation and be able to optimize common injection molding machines.

# 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.

# Physical Fitness Technology

**PSF 110                    Exercise Science                    4                    0                    4**

Prerequisites: None  
Corequisites: None

This course is a survey of scientific principles, methodologies, and research as applied to exercise and physical adaptations to exercise. Topics include the basic elements of kinesiology, biomechanics, and motor learning. Upon completion, students should be able to identify and describe physiological responses and adaptations to exercise.

**PSF 212                    Exercise Programming                    2                    2                    3**

Prerequisites: PSF 110  
Corequisites: None

This course provides information about organizing, scheduling, and implementation of physical fitness programs. Topics include programming for various age groups, competitive activities and special events, and evaluating programs. Upon completion, students should be able to organize and implement exercise activities in a competent manner.

Psychology

Course

Descriptions

**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.

**PSY 150                      General Psychology                      3                      0                      3**

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.

**PSY 237                      Social Psychology                      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.

**PSY 241                      Developmental Psychology                      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.

**PSY 243 Child Psychology** 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.

Course  
 Descriptions

**PSY 275 Health Psychology** 3 0 3  
 Prerequisites: PSY 150  
 Corequisites: None  
 This course covers the biopsychological dynamics of stress and the maintenance of good health. Topics include enhancing health and well-being, stress management, lifestyle choices and attitudes, the mind-body relationship, nutrition, exercise and fitness. Upon completion, students should be able to demonstrate an understanding of the psychological factors related to health and well-being. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**PSY 281 Abnormal Psychology** 3 0 3  
 Prerequisites: PSY 150  
 Corequisites: None  
 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.

<b>RAD 121</b>	<b>Radiographic Imaging I</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
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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.

<b>RAD 122</b>	<b>Radiographic Imaging II</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
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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.

<b>RAD 131</b>	<b>Radiographic Physics I</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
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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.

<b>*RAD 151</b>	<b>RAD Clinical Education I</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
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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.

<b>*RAD 161</b>	<b>RAD Clinical Education II</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>5</b>
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Prerequisites: RAD 110, RAD 111, RAD 151, and RAD 182

Corequisites: RAD 112 and RAD 121

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.

<b>*RAD 171</b>	<b>RAD Clinical Education III</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
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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>
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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>
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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.

Course

<b>RAD 231</b>	<b>Radiographic Physics II</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
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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 and equipment circuitry. Upon completion, students should be able to demonstrate an understanding of the application of physical concepts as related to image production.

Descriptions

<b>RAD 241</b>	<b>Radiobiology/Protection</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
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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>RAD Quality Management</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
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Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251

Corequisites: RAD 261

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>
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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>
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Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251

Corequisites: RAD 245 and RAD 271

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 271</b>	<b>Radiography Capstone</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>
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Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251

Corequisites: RAD 245 and RAD 261

This course provides an opportunity to exhibit problem-solving skills required for certification. Emphasis is placed on critical thinking and integration of didactic and clinical components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level radiographer.

# Real Estate Appraisal

Course  
Descriptions

<b>*REA 111</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 valuation principles and practices.				
<b>*REA 112</b>	<b>Valuation Principles and Practices R-2</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: REA 111				
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).				
<b>*REA 113</b>	<b>Applied Residential Property Valuation R-3</b>	<b>1</b>	<b>0</b>	<b>1</b>
Prerequisites: REA 112				
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.				
<b>*REA 114</b>	<b>USPAP R-4</b>	<b>1</b>	<b>0</b>	<b>1</b>
Prerequisites: REA 113				
Corequisites: None				
This course introduces all aspects of the appraisers conduct, ethics and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the North Carolina Appraisal Board. Upon completion, students should be able to demonstrate a knowledge of appraisal standards and sit for the National USPAP examination.				
<b>*REA 210</b>	<b>Introduction to Income Property Appraisal G-1</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: REA 113 and REA 114				
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.				
<b>*REA 212</b>	<b>Advanced Income Capitalization Procedures G-2</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: REA 210				
Corequisites: None				
This course expands direct capitalization techniques and introduces yield capitalization. Topics include yield rates, discounted cash flow, financial leverage, and traditional yield capitalization formulas. Upon completion, students should be able to estimate the value of income producing property using yield capitalization techniques.				

**\*REA 213      Applied Income Property Valuation G-3**

2 0 2

Prerequisites: REA 212

Corequisites: None

This course covers the laws, rules, and standards pertaining to the principles and practices applicable to the appraisal of income properties. Topics include FIRREA, USPAP, Uniform Commercial and Industrial Appraisal Report (UCIAR) form, North Carolina statutes and rules, and case studies. Upon completion, students should be able to prepare a narrative report that conforms to the USPAP and sit for the NC Certified General Appraisal examination.

## Course Descriptions

## Reading

**RED 080 Introduction to College Reading**

**3      2      4**

**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.

**RED 090**      **Improved College Reading**

**3      2      4**

**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.

## 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.

Course

Descriptions

<b>REL 212</b>	<b>Intro to New Testament</b>	<b>3</b>	<b>0</b>	<b>3</b>
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

<b>*RLS 112</b>	<b>Broker Prelicensing</b>	<b>5</b>	<b>0</b>	<b>5</b>
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.				
<b>RLS 113</b>	<b>Real Estate Mathematics</b>	<b>2</b>	<b>0</b>	<b>2</b>
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.				
<b>RLS 120</b>	<b>Real Estate Practice</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course emphasizes knowledge and skills necessary for successful real estate practice. Topics will include land use controls, proper method of measuring improvements, commercial real estate, property management, selling techniques, and other aspects of the real estate industry. Upon completion, students should be able to demonstrate an understanding of real world real estate practice.				

Resort and Spa Management

<b>RSM 110</b>	<b>Intro to Resort &amp; Spa Ind</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces the basics types of resort and spa settings. Topics include day, resort, destination, amenity, medical spas, and other related topics. Upon completion, student should be able to identify the differences and requirements of different types of resort and spa settings.				
<b>RSM 113</b>	<b>Ethics of Touch</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course is designed to familiarize students with the ethics involved in a profession that utilizes touch as therapy. Topics include personal boundaries, ethical behavior, transference, and other related topics. Upon completion, students should be able to understand the issues facing practitioners and managers of touch modalities.				

<b>RSM 115</b>	<b>Resort &amp; Spa Technologies</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course introduces resort and spa information systems. Topics include POS systems, scheduling, tee time scheduling, planning, cost controls, forecasting, inventory control, and nutritional analysis. Upon completion, students should be able to demonstrate competence in utilizing contemporary information application systems in resort and spa settings.				
<b>RSM 120</b>	<b>Reqmt &amp; Scope of Practice</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course covers the requirements and scope of practice for personnel in the spa industry. Topics include laws and training required for the professions of massage therapy, cosmetology, esthetics, nail technology, personal fitness, and other related topics. Upon completion, students should be able to identify and understand the skills and requirements needed by spa personnel.				
<b>RSM 125</b>	<b>Spa Services Mgt</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course is designed to familiarize students with the services and equipment commonly used in spa settings. Topics include hydrotherapy, body treatments, therapeutic exercise, equipment use, and other related topics. Upon completion, students should be able to identify the different types of services and equipment and their utilization.				
<b>RSM 125A</b>	<b>Spa Services Mgt Lab</b>	<b>0</b>	<b>2</b>	<b>1</b>
Prerequisites: None				
Corequisites: RSM 125				
This course is a laboratory to accompany RSM 125. Emphasis is placed on practical experiences that enhance the materials presented in RSM 125. Upon completion, students should be able to demonstrate the operation and sanitation and safety procedures associated with the use and care of spa equipment. Pending state approval.				
<b>RSM 130</b>	<b>Controls/Resorts and Spas</b>	<b>2</b>	<b>0</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course covers controls and purchasing of equipment and supplies for resorts and spas. Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing and purchasing ethics. Upon completion, students should be able to apply effective purchasing techniques in the resort and spa industry based on the end-use of the product.				
<b>RSM 180</b>	<b>Resort/Spa Retail Mkt</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: None				
Corequisites: None				
This course exposes students to retail resort and spa operations. Topics include assortment planning and store layout/effective use of space, inventory, branding and promotion of products, pricing strategies, on-line sales and customer sales techniques. Upon completion, students should be able to apply retail strategies specific to the resort and spa industry designed to increase profitability and improve customer retention. Pending state approval.				
<b>RSM 190</b>	<b>Customer Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
Prerequisites: None				
Corequisites: None				
This course introduces students to the concept of exceptional customer service in a resort and spa setting. Emphasis is placed on defining and demonstrating world-class service including topics such as consumer behavior, guest satisfaction, value-added experiences, spa confidentiality, and consistency in service. Upon completion, students will develop, implement and evaluate exceptional customer service systems to maintain and manage resort/spa guest expectations. Pending state approval.				

Course

Descriptions

Course  
Descriptions

**RSM 210**

**Staffing and HR Mgt**

303

Prerequisites: None  
Corequisites: None

This course introduces students to staff recruitment, contract employment, compensation strategies, mentoring programs, client/provider incident management, and training and evaluation techniques unique to spa/resort personnel. Emphasis is placed on the development/management of service providers including scheduling techniques, team/individual enhancement, cultural awareness, and training strategies to yield world class resort/spa service. Upon completion, students should be able to structure staffing according to facility/service need, and apply training and supervisory skills in regional/international spa and resort settings. Pending state approval.

**RSM 245**

**Resort and Spa Law**

303

Prerequisites: None  
Corequisites: None

This course is designed to build greater awareness and understanding of the various laws encountered in the resort and spa industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, employment and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.

**RSM 280**

**Resort and Spa Mgmt Issues**

303

Prerequisites: None  
Corequisites: None

This course covers current global, national, and local concerns, issues and trends in the resort and spa industry. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply resort and spa management principles to real challenges facing industry managers.

Substance Abuse

**\*SAB 110**

**Substance Abuse Overview**

3003

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.

Information Systems Security

**SEC 110**

**Security Concepts**

303

Prerequisites: None  
Corequisites: None

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

<b>SEC 150</b>	<b>Secure Communications</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: SEC 110, NET 110 or NET 125, and NET 226				
Corequisites: None				
This course provides an overview of current technologies used to provide secure transport of information across networks. Topics include data integrity through encryption, Virtual Private Networks, SSL, SSH, and IPSec. Upon completion, students should be able to implement secure data transmission technologies.				
This is a Cisco Networking Academy course.				
<b>SEC 160</b>	<b>Secure Admin I</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: SEC 110, NET 110 or NET 125, and NET 126				
Corequisites: None				
This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.				
<b>SEC 210</b>	<b>Intrusion Detection</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: SEC 160				
Corequisites: None				
This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solutions for networks and host based systems.				
<b>SEC 220</b>	<b>Defense-In-Depth</b>	<b>2</b>	<b>2</b>	<b>3</b>
Prerequisites: None				
Corequisites: SEC 160				
This course introduces students to the concepts of defense in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures.				
<b>SEC 289</b>	<b>Security Capstone Project</b>	<b>1</b>	<b>4</b>	<b>3</b>
Prerequisites: SEC 220				
Corequisites: None				
This course provides the student the opportunity to put into practice all the skills learned to this point. Emphasis is placed on security policy, process planning, procedure definition, business continuity, and systems security architecture. Upon completion, students should be able to design and implement comprehensive information security architecture from the planning and design phase through implementation.				

Course  
Descriptions

# A.A.S. Social / Behavioral Sciences

## General Education Electives

The following courses are classified as Social/Behavioral Sciences for A.A.S. degree programs. A.A.S. students may take any course on this list. College transfer students (A.A., A.S., A.F.A.) should select general education courses listed on pages 228-237 of the catalog.

Course

Descriptions

### ANTHROPOLOGY

- ANT 210 General Anthropology
- ANT 220 Cultural Anthropology
- ANT 230 Physical Anthropology
- ANT 230A Physical Anthropology Lab
- ANT 240 Archaeology

### ECONOMICS

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

### GEOGRAPHY

- GEO 111 World Regional Geography
- GEO 112 Cultural Geography

### HISTORY

- HIS 111 World Civilizations I
- HIS 112 World Civilizations II
- HIS 115 Introduction to Global History
- HIS 131 American History I
- HIS 132 American History II
- HIS 162 Women and History
- HIS 227 Native American History
- HIS 236 North Carolina History

### POLITICAL SCIENCE

- POL 110 Introduction to Political Science
- POL 120 American Government
- POL 210 Comparative Government

### PSYCHOLOGY

- PSY 110 Life Span Development
- PSY 118 Interpersonal Psychology
- PSY 150 General Psychology
- PSY 237 Social Psychology
- PSY 241 Developmental Psychology
- PSY 281 Abnormal Psychology

### SOCIOLOGY

- SOC 210 Introduction to Sociology
- SOC 213 Sociology of the Family
- SOC 215 Group Processes
- SOC 220 Social Problems
- SOC 225 Social Diversity
- SOC 232 Social Context of Aging
- SOC 234 Sociology of Gender
- SOC 240 Social Psychology
- SOC 254 Rural and Urban Sociology



# Sociology

**SOC 210                      Introduction to Sociology                      3                      0                      3**

Prerequisites: None

Corequisites: None

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.

Course  
Descriptions

**SOC 232**

**Social Context of Aging**

303

Prerequisites: None  
Corequisites: None

This course provides an overview of the social implications of the aging process. Emphasis is placed on the roles of older adults within families, work and economics, politics, religion, education, and health care. Upon completion, students should be able to identify and analyze changing perceptions, diverse lifestyles, and social and cultural realities of older adults. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

**SOC 234**

**Sociology of Gender**

303

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.

**SOC 240**

**Social Psychology**

303

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.

**SOC 254**

**Rural and Urban Sociology**

303

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

**SON 110**

**Introduction to Sonography**

1333

Prerequisites: Enrollment in Sonography Program  
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.

**SON 111**

**Sonographic Physics**

3304

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: Enrollment in Sonography Program					
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

## Course

## Descriptions

**SON 241      Obstetrical Sonography I      2      0      0      2**

Prerequisites: SON 110

Corequisites: None

This course covers normal obstetrical sonography techniques, the normal fetal environment, and abnormal first trimester pregnancy states. Topics include gestational dating, fetal anatomy, uterine environment, and first trimester complications. Upon completion, students should be able to produce gestational sonograms which document age, evaluate the uterine environment, and recognize first trimester complications.

**SON 242      Obstetrical Sonography II      2      0      0      2**

Prerequisites: SON 241

Corequisites: None

This course covers second and third trimester obstetrical complications and fetal anomalies. Topics include abnormal fetal anatomy and physiology and complications in the uterine environment. Upon completion, students should be able to identify fetal anomalies, fetal distress states, and uterine pathologies.

**SON 250      Vascular Sonography      1      3      0      2**

Prerequisites: SON 111

Corequisites: None

This course provides an in-depth study of the anatomy and pathology of the vascular system. Topics include peripheral arterial, peripheral venous, and cerebrovascular disease testing. Upon completion, students should be able to identify normal vascular anatomy and recognize pathology of the vascular system.

**SON 289      Sonographic Topics      2      0      0      2**

Prerequisites: SON 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

**SPA 111      Elementary Spanish I      3      0      3**

Prerequisites: None

Corequisites: SPA 181

This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**SPA 112      Elementary Spanish II      3      0      3**

Prerequisites: SPA 111

Corequisites: SPA 182

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 181                      Spanish Lab I                      0                      2                      1**

Prerequisites: None

Corequisites: None

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**SPA 182                      Spanish Lab II                      0                      2                      1**

Prerequisites: SPA 181

Corequisites: None

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**SPA 211                      Intermediate Spanish I                      3                      0                      3**

Prerequisites: SPA 112

Corequisites: None

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.

**SPA 221                      Spanish Conversation                      3                      0                      3**

Prerequisites: SPA 212

Corequisites: None

This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

# Surveying

Course  
Descriptions

<b>SRV 110</b>	<b>Surveying I</b>	<b>2</b>	<b>6</b>	<b>4</b>
Prerequisites: ARC 111 or EGR 115, and MAT 121, MAT 161, MAT 171, or MAT 175				
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.				
<b>SRV 111</b>	<b>Surveying II</b>	<b>2</b>	<b>6</b>	<b>4</b>
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.				
<b>SRV 210</b>	<b>Surveying III</b>	<b>2</b>	<b>6</b>	<b>4</b>
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				
This course introduces the law as related to the practice of surveying. Topics include surveyors' responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.				
<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.				

**SRV 260                      Field and Office Practices                      1                      3                      2**

Prerequisites: Completion of three semesters of the Surveying Technology program

Corequisites: None

This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand the requirements of operating a professional land surveying business.

Course

Descriptions

# **Surgical Technology**

**SUR 110                      Introduction to Surgical Technology                      3                      0                      0                      3**

Prerequisites: Enrollment in the Surgical Technology program

Corequisites: BIO 163 and SUR 111

This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, physiology of wound healing and biomedical sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

**SUR 111                      Periop Patient Care                      5                      6                      0                      7**

Prerequisites: Enrollement in the Surgical Technology program

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.

**SUR 122                      Surgical Procedures I                      5                      3                      0                      6**

Prerequisites: SUR 110 and SUR 111

Corequisites: SUR 123 or STP 101

This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

**SUR 123                      SUR Clinical Practice I                      0                      0                      21                      7**

Prerequisites: BIO 163, or BIO 168 and BIO 169, SUR 110 and SUR 111

Corequisites: BIO 175 and SUR 122

This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles.

**SUR 134                      Surgical Procedures II                      5                      0                      0                      5**

Prerequisites: SUR 123 or STP 101

Corequisites: SUR 135 and SUR 137

This course provides a comprehensive study of intermediate and advanced surgical specialties that students are exposed to in the second clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment.

Course

Descriptions

<b>SUR 135</b>	<b>SUR Clinical Practice II</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>4</b>
Prerequisites: 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: 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.					
<b>SUR 210</b>	<b>Adv SUR Clinical Practice</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>
Prerequisites: SUR 137					
Corequisites: None					
This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area.					
<b>SUR 211</b>	<b>Adv Theoretical Concepts</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: SUR 137					
Corequisites: None					
This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area.					

Social Work

<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					
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.					
<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>
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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.

Course

Descriptions

<b>*SWK 214</b>	<b>Social Work Law</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
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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>
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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

<b>VET 110</b>	<b>Animal Breeds and Husbandry</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
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Prerequisites: Enrollment in the VMT program  
 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.

<b>VET 114</b>	<b>Introduction to Veterinary Medical Tech</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
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Prerequisites: Enrollment in the VMT program  
 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.

## Course

## Descriptions

<b>VET 120</b>	<b>Veterinary Anatomy and Physiology</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
Prerequisites: Enrollment in the VMT program					
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.					
<b>VET 121</b>	<b>Veterinary Medical Terminology</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
Prerequisites: Enrollment in the VMT program					
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.					
<b>VET 123</b>	<b>Veterinary Parasitology</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: VET 120 and VET 121					
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.					
<b>VET 125</b>	<b>Veterinary Diseases I</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Prerequisites: VET 120 and VET 121					
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.					
<b>VET 126</b>	<b>Veterinary Diseases II</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
Prerequisites: VET 125					
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.					
<b>VET 131</b>	<b>Veterinary Lab Techniques I</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
Prerequisites: VET 110, VET 114, VET 123 and VET 125					
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 and VET 125

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.

 Course  
Descriptions

**VET 137                    Veterinary Office Practices                    1           2           0           2**

Prerequisites: Enrollment in the VMT program

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

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

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

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.

**VET 214                    Veterinary Clinical Practice III                    1           9           0           4**

Prerequisites: VET 213

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.

Course  
Descriptions

**VET 215                    Veterinary Pharmacology                    3           0           0           3**  
Prerequisites: CHM 130 and CHEM 130A, or CHEM 151, VET 125  
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 110, VET 120 and VET 125  
Corequisites: VET 213 and VET 214  
This course covers the topics relevant to the medical and surgical techniques for the common domestic large animal species. Topics include physical exam, restraint, sample collection, bandaging, emergency treatment, surgical and obstetrical procedures and instruments, herd health, and lameness topics. Upon completion, students should be able to safely perform restraint, examination, and sample collection; assist surgical, obstetrical, and emergency procedures; and discuss herd health.

**VET 237                    Animal Nutrition                    3           0           0           3**  
Prerequisites: CHM 130 and CHM 130A  
Corequisites: None  
This course covers the principles of nutrition and their application to feeding practices of domestic, farm, and companion animals. Topics include basic nutrients and nutritional needs of individual species, proximate analysis, interpretation of food and feed labels, types of animal foods, and ration formulation. Upon completion, students should be able to select appropriate diets for animals in various stages of health and disease, analyze nutrition labels, and identify foods.

Web Technologies

**WEB 110                    Internet/Web Fundamentals                    2           2           3**  
Prerequisites: None  
Corequisites: None  
This course introduces basic markup language, various navigational tools and services of the Internet. Topics include creating web pages, using Internet protocols, search engines, file compression/decompression, FTP, E-mail, listservers, and other related topics. Upon completion, students should be able to deploy a web-site created with basic markup language, retrieve/decompress files, e-mail, FTP, and utilize other Internet tools.

**WEB 115                    Web Markup and Scripting                    2           2           3**  
Prerequisites: CIS 110  
Corequisites: None  
This course introduces client-side Internet programming using the current W3C-recommended presentation markup language and supporting elements. Topics include site management and development, markup elements, stylesheets, validation, accessibility, standards, browsers, and basic JavaScripting. Upon completion, students should be able to hand-code web pages with various media elements according to current markup standards and integrate them into websites.

**WEB 120                    Intro Internet Multimedia                    2           2           3**  
Prerequisites: WEB 115 or WEB 140  
Corequisites: None  
This is the first of two courses covering the creation of Internet Multimedia. Topics include multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create Internet multimedia presentations utilizing a variety of methods and applications.

<b>WEB 140      Web Development Tools</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: CIS 110

Corequisites: None

This course provides an introduction to web development software suites. Topics include the creation of web sites and applets using web development software. Upon completion, students should be able to create entire web sites and supporting applets.

Course

<b>WEB 182      PHP Programming</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: CIS 115

Corequisites: None

This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic web pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic web site using the PHP scripting language.

Descriptions

<b>WEB 186      XML Technology</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: CIS 115 and DBA 110

Corequisites: None

This course is designed to introduce student to XML and related internet technologies. Topics include extendible style language (XSL), document object model (DOM), extendible style sheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

<b>WEB 187      Wireless/Internet Prog</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: CIS 115

Corequisites: None

This course introduces the Internet and Web development for portable wireless devices with a focus on practical business-related applications. Topics include WAP, WML, XHTML, XML, and wireless internet and mobile business practices and techniques. Upon completion, students should be able to develop and wirelessly enable websites and business applications for use on portable electronic devices. This course is restricted to the Information Systems Security/Security Hardware curriculum.

<b>WEB 210      Web Design</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: WEB 140

Corequisites: None

This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as a study of bad design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages.

<b>WEB 215      Adv Markup Scripting</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: DBA 120, WEB 115 and WEB 182

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>WEB 230      Implementating Web Serv</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Prerequisites: NET 110 or NET 125, NOS 110 and NOS 120

Corequisites: None

This course covers website and web server architecture. Topics include installation, configuration, administration, and security of web servers, services and sites. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards.

Course

Descriptions

**WEB 250**

**Database Driven Websites**

223

Prerequisites: DBA 110, DBA 120, WEB 140, WEB 182

Corequisites: None

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.

**\*WEB 289**

**Internet Technologies Project**

143

Prerequisites: WEB 230 and WEB 250

Corequisites: None

This course provides an opportunity to complete a significant Web technologies project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete an Internet project from the definition phase through implementation.

Welding

**WLD 110**

**Cutting Processes**

132

Prerequisites: Admission to Welding Program

Corequisites: None

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

**WLD 111**

**Oxy-Fuel Welding**

132

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.

**WLD 112**

**Basic Welding Processes**

132

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.

**WLD 115**

**SMAW (Stick) Plate**

295

Prerequisites: None

Corequisites: None

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

**WLD 116**

**SMAW (Stick) Plate/Pipe**

194

Prerequisites: WLD 115

Corequisites: None

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

**WLD 121                    GMAW (MIG) FCAW/Plate                    2                    6                    4**

Prerequisites: None

Corequisites: None

This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

**WLD 122                    GMAW (MIG) Plate/Pipe                    1                    6                    3**

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.

**WLD 131                    GTAW (TIG) Plate                    2                    6                    4**

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.

**WLD 132                    GTAW (TIG) Plate/Pipe                    1                    6                    3**

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.

**WLD 141                    Symbols and Specifications                    2                    2                    3**

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.

**WLD 143                    Welding Metallurgy                    1                    2                    2**

Prerequisites: None

Corequisites: None

This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

**WLD 151                    Fabrication I                    2                    6                    4**

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.

Course

Descriptions

Course	<b>WLD 212 Inert Gas Welding</b>	<b>1</b>	<b>3</b>	<b>2</b>
	Prerequisites: None Corequisites: None This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions.			
Descriptions	<b>WLD 215 SMAW (Stick) Pipe</b>	<b>1</b>	<b>9</b>	<b>4</b>
	Prerequisites: WLD 115 or WLD 116 Corequisites: None This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.			
	<b>WLD 221 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 231 GTAW (TIG) Pipe</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites: WLD 132 Corequisites: None This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.			
	<b>WLD 251 Fabrication II</b>	<b>1</b>	<b>6</b>	<b>3</b>
	Prerequisites: WLD 151 Corequisites: None This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.			
	<b>WLD 261 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.			
	<b>WLD 262 Inspection and Testing</b>	<b>2</b>	<b>2</b>	<b>3</b>
	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.			



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**Jo Ann W. Gipe** \_\_\_\_\_ **Secretary, Small Business Center**

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B.A., Salem College, Winston-Salem, NC

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**Kathy G. Hipps** \_\_\_\_\_ **Secretary, Basic Skills**

B.S., Western Carolina University, Cullowee, NC

**Cheryl J. Holder** \_\_\_\_\_ **Basic Skills Specialist, ABE/GED/AHS**

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**Janice M. Johnston** \_\_\_\_\_ **Basic Skills Specialist, Compensatory Education**

B.S., University of Florida, Gainesville; M.A., University of Florida, Gainesville

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Diploma, Milwaukee County General School of Nursing

Administration,

Faculty,

and Staff

**Kay Manley** \_\_\_\_\_ **Executive Director, Adult Basic Skills/HRD**  
B.A., University of South Florida; M.A., Western Carolina University

**Michael D. McCarthy** \_\_\_\_\_ **Executive Director, Corporate and Economic Development**  
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**Kathy Skye Myrick** \_\_\_\_\_ **Executive Director, Occupational and Public Service Training**  
B.S.B.A./B.S., Appalachian State University; M.S., Western Carolina University; further graduate study: Duke University

**Kenneth B. O'Connor** \_\_\_\_\_ **Director, Focused Industrial and New and Expanding Industry Training**  
B.A., University of North Carolina at Asheville;  
M.A., Western Carolina University

**Brinda W. Ramsey** \_\_\_\_\_ **Director, Community Service Programs**  
University of North Carolina at Asheville; Asheville-Buncombe Technical Community College

**Thomas E. Rash** \_\_\_\_\_ **Coordinator, Compensatory Education**  
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**Jill M. Sparks** \_\_\_\_\_ **Assistant Director, Small Business Center**  
B.A., B.S., M.B.A., Appalachian State University

**Ramona Stevens** \_\_\_\_\_ **Cashier/Registration Clerk**  
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B.S., Gardner Webb University; DMAIC Six Sigma Green Belt

**Shelley Y. White** \_\_\_\_\_ **Coordinator, Human Resources Development**  
A.S., Isothermal Community College; B.S., Appalachian State University; M.S., Western Carolina University

**Robin Wiggins** \_\_\_\_\_ **Facilities Coordinator, Enka Campus**  
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**Glenda A. Wolfe** \_\_\_\_\_ **Secretary, Community Service Programs**  
Asheville-Biltmore Junior College

**Russ D. Yelton** \_\_\_\_\_ **Director, Small Business Center**  
B.S.B.A., Appalachian State University; M.B.A., Western Carolina University

## OFFICE OF STUDENT SERVICES

**Dennis King** \_\_\_\_\_ **Vice President, Student Services**  
B.A., Rutgers University; M.A.T., Jacksonville University; Ed.D., University of Florida

**Sarah J. Brown** \_\_\_\_\_ **Secretary, Records and Registration**  
B.A., University of North Carolina at Asheville

**Peggy S. Bulla** \_\_\_\_\_ **Career/Personal Counselor**  
B.A., University of North Carolina at Charlotte; M.A., Western Carolina University; NCC; LPC

**Lisa F. Bush** \_\_\_\_\_ **Director, Admissions**  
A.A., Daytona Beach Community College; B.A., Stetson University; M.S., Rensselaer Polytechnic Institute

**Annie Clingenpeel** \_\_\_\_\_ **Coordinator, Disability Services and Counselor**  
B.A., M.S., East Carolina University; LPC

**Scott C. Douglas** \_\_\_\_\_ **Registrar**  
B.A., University of Tennessee; M.S., M.B.A., Colorado State University

**Karen Edwards** \_\_\_\_\_ **Assessment Specialist**  
B.S., Appalachian State University

**Susan Groszoff** \_\_\_\_\_ **Counselor, Counseling Center**  
B.A., University of Buffalo; M.S., California State University, Northridge; NCC

**Diane Hall** \_\_\_\_\_ **Secretary, Admissions**  
A.A.S., Asheville-Buncombe Technical Community College; PSP (State)

**Deborah L. Harmon** \_\_\_\_\_ **Director, Counseling**  
B.A., Michigan State University; M.A., Northern Arizona University; Ed. D., North Carolina State University; NCC

- Michele Hathcock** \_\_\_\_\_ **Director, A-B Tech at the Mall, Recruitment and Student Activities**  
B.S., Western Carolina University
- Rebecca B. Howell** \_\_\_\_\_ **Academic Advisor/International Students**  
B.S., University of North Carolina at Asheville
- Geli Klimek** \_\_\_\_\_ **Director, Transfer Advising Center**  
B.A., Stetson University; M.A., University of Phoenix
- Eileen A. Klope** \_\_\_\_\_ **Secretary/Receptionist, Counseling Center**  
B.S., Ferris State University
- Patricia P. Lail** \_\_\_\_\_ **Administrative Assistant**  
MDTA Secretarial School; Asheville-Buncombe Technical Community College
- Mona Lancaster** \_\_\_\_\_ **Document Imaging Clerk**  
A.A.S., Asheville-Buncombe Technical Community College
- S. Alyson Laudenslayer** \_\_\_\_\_ **Secretary, Admissions**  
B.S., University of North Carolina at Asheville
- Stephen Maag** \_\_\_\_\_ **Academic Advisor**  
B.S., Winthrop University; M.A.Ed., Western Carolina University
- Jill R. McNabb** \_\_\_\_\_ **Associate Registrar**  
B.A., University of California at Los Angeles
- Malory F. Presley** \_\_\_\_\_ **Secretary, Transfer Advising Center**  
B.A., University of Central Florida
- Peggy A. Rich** \_\_\_\_\_ **Student Records Clerk, Records and Registration**  
A.A., Asheville-Buncombe Technical Community College
- Meredith Richards** \_\_\_\_\_ **Evening Admissions Clerk**  
B.S., University of Florida
- Linda W. Seals** \_\_\_\_\_ **Secretary, Admissions**  
A.A.S., Asheville-Buncombe Technical Community College
- Martha Tillman** \_\_\_\_\_ **Secretary, Career Center and Disability Services**  
A.A.S., Asheville-Buncombe Technical Community College; B.S., Mars Hill College; M.B.A., Montreat College
- Eric L. Tschekunow** \_\_\_\_\_ **Advising Center Coordinator, Instructor, Arts & Sciences**  
B.A., East Carolina University, Greenville, NC; M.F.A., Emerson College, Boston, MA

Administration,  
Faculty,  
and Staff

## OFFICE OF ADMINISTRATIVE SERVICES

- Richard Mauney** \_\_\_\_\_ **Vice President, Administrative Services**  
B.A., Lenoir Rhyne College; M.B.A., Western Carolina University; further study: Memphis State University
- Inez O. Alexander** \_\_\_\_\_ **Computer Center Specialist**  
A.A.S., Asheville-Buncombe Technical Community College
- Susan A. Arnsperger** \_\_\_\_\_ **Payroll Accountant**  
A.A.S., Asheville-Buncombe Technical Community College
- Vanette S. Baldwin** \_\_\_\_\_ **Switchboard Operator/Receptionist**
- Shelby Burnett** \_\_\_\_\_ **Administrative Assistant**  
A.A.S., Asheville-Buncombe Technical Community College
- Jenifer A. Burns** \_\_\_\_\_ **Secretary**  
B.S., University of North Carolina at Asheville
- Anita E. Chambers** \_\_\_\_\_ **Security Officer**  
Asheville-Buncombe Technical Community College
- Calven Davidson** \_\_\_\_\_ **Coordinator, Operation Services**
- Eddie Davis** \_\_\_\_\_ **Coordinator, Plant Operations, Enka Campus**
- Lynn Dayton** \_\_\_\_\_ **Director, Financial Aid**  
B.S., M.A.Ed., Western Carolina University

Administration,  
Faculty,  
and Staff

Joyce Dover Evans \_\_\_\_\_ Accounting Clerk/Student Accounts

Lisa Evans \_\_\_\_\_ Director, Business Services  
B.S., North Carolina State University

Amanda Foster \_\_\_\_\_ Secretary/Receptionist, Financial Aid  
B.A., College of Charleston

Tina Fountain \_\_\_\_\_ Coordinator, Equipment/Facilities Inventory  
A.A.S., two degrees, Asheville-Buncombe Technical Community College; B.B.A., Montreat College

E. Davis Gibson \_\_\_\_\_ Director, Security/Safety  
B.P.A., University of Mississippi

Robin S. Grooms \_\_\_\_\_ Coordinator, Student Accounts  
A.A.S., Asheville-Buncombe Technical Community College

Mary A. Harper \_\_\_\_\_ Bookstore Sales and Inventory Associate  
A.A.S., Asheville-Buncombe Technical Community College

Kara Keller \_\_\_\_\_ Associate Director, Security  
A.A.S., Asheville-Buncombe Technical Community College

Don Kent \_\_\_\_\_ Coordinator, Custodial Services

Lisa H. Lankford \_\_\_\_\_ Associate Director, Business Services  
B.S., University of North Carolina at Greensboro; M.B.A., Montreat College, Montreat, NC

Linda Mack \_\_\_\_\_ Duplicating/Mail Clerk

Laurie A. Manley \_\_\_\_\_ Computer Center Specialist  
A.A.S., Asheville-Buncombe Technical Community College; B.M., Mars Hill College; graduate study: Rice University

Brian S. McCall \_\_\_\_\_ Technical Support Specialist II  
A.A.S. (two degrees), Southwestern Community College; B.S., Western Carolina University

Lease McIntosh \_\_\_\_\_ Lodge Housekeeper  
A.A.S., Asheville-Buncombe Technical Community College

David C. McKinney \_\_\_\_\_ Director, Information Systems Technology  
A.A.S. (two degrees), Asheville-Buncombe Technical Community College

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A.A.S., Asheville-Buncombe Technical Community College

Joyce M. Moncada \_\_\_\_\_ Financial Aid Assistant  
A.A.S., Asheville-Buncombe Technical Community College

Lee R. Pack, Jr. \_\_\_\_\_ Coordinator, Maintenance Operations  
Diploma, Asheville-Buncombe Technical Community College; Diploma, Haywood Community College

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A.A.S., Asheville-Buncombe Technical Community College

Eugene E. Pressley, II, M.C.P., M.C.S.E. \_\_\_\_\_ Network Administrator  
A.A.S. (two degrees), Asheville-Buncombe Technical Community College

Marty Rice \_\_\_\_\_ Maintenance Mechanic/Safety Technician

Randal K. Rose \_\_\_\_\_ Associate Director, Plant Operations  
Technical Diploma, Asheville-Buncombe Technical Community College; N.C. Licensed Heating and Air Conditioning, Refrigeration

Jackie M. Searcy \_\_\_\_\_ Secretary/Receptionist, Financial Aid  
A.A.S., Asheville-Buncombe Technical Community College (two degrees)

Benny R. Smith \_\_\_\_\_ Director, Plant Operations

Crystal C. Smith \_\_\_\_\_ Financial Aid Assistant  
A.A., Anderson College

Timothy D. Stafford \_\_\_\_\_ Coordinator, Material Services  
A.A.S., Forsyth Technical Community College

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A.A.S., Asheville-Buncombe Technical Community College

**Angela C. Tucker** \_\_\_\_\_ **Accounting Supervisor**

A.A.S., Asheville-Buncombe Technical Community College; B.S., University of North Carolina at Asheville

**John R. Tucker** \_\_\_\_\_ **Technical Support Specialist II**

A.A.S., Aiken Technical College; Certification: Autocad 2000 Technical Competency

**Donna Turner** \_\_\_\_\_ **Associate Director, Financial Aid**

B.S., Appalachian State University

**Vaughn Warren** \_\_\_\_\_ **Coordinator, Security/Enka Campus**

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**Rebecca R. Watkins** \_\_\_\_\_ **Purchasing Agent**

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A.A.S., Asheville-Buncombe Technical Community College

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**Traci Wright** \_\_\_\_\_ **Accounts Payable Clerk**

A.A.S., Asheville-Buncombe Technical Community College; B.B.A., Montreat College

Administration,

Faculty,

and Staff

## OFFICE OF COLLEGE RELATIONS

**Anita R. Metcalf** \_\_\_\_\_ **Vice President, College Relations/Executive Director, Foundation**

B.A., University of North Carolina at Greensboro; M.S., Western Carolina University

**Martha G. Ball** \_\_\_\_\_ **Communications Specialist**

B.A., University of North Carolina at Asheville

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A.A.S., Nassau Community College, Garden City, NJ; B.A., State University of New York, Oneonta, NY; M.A.

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**Copper M. Coggins** \_\_\_\_\_ **Director, Organizational and Professional Development**

B.A., Wellesley College, Wellesley, MA; M.A., Goddard College, Plainfield, VT; M.S., Ph.D., North Carolina State

University

**Mona L. Cornwell** \_\_\_\_\_ **Director, Communications**

B.A., University of North Carolina at Asheville

**Libby B. Hodan** \_\_\_\_\_ **Foundation Development Officer**

B.A., M.Ed., Clemson University

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A.A.S., Asheville-Buncombe Technical Community College

**Tamma P. Moriarty** \_\_\_\_\_ **Grantwriter/Coordinator**

B.S., Mars Hill College

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B.S., Northeastern University, Boston, MA

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## DIVISION OF LEARNING RESOURCES

	<b>Thomas F. Dechant, Ed. D.</b> _____ <b>Dean, Learning Resources</b> B.A., University of North Carolina at Asheville; M.S., Western Carolina University; Ed. D., North Carolina State University
Administration,	<b>Phyllis M. Boone</b> _____ <b>Secretary, Learning Resource Center</b> A.A.S., Asheville-Buncombe Technical Community College
Faculty,	<b>Angela R. Calhoun</b> _____ <b>Library Assistant</b> A.A.S., Asheville-Buncombe Technical Community College
and Staff	<b>Darlene M. Casey</b> _____ <b>Director, Distance Learning</b> A.A., Suffolk Community College; B.S., St. Leo University, St. Leo, Florida; M.B.A., International College, Naples, Florida
	<b>Linda M. Davis</b> _____ <b>Library Technical Assistant</b> Certificate, A.A.S., Asheville-Buncombe Technical Community College
	<b>Susan E. Donato</b> _____ <b>Library Assistant</b> B.S., Kent State University, Kent, OH
	<b>Carol J. Fleming</b> _____ <b>Director, Library Services</b> B.A., Oswego State College; M.L.S., Appalachian State University
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	<b>Sterling W. Lawrence</b> _____ <b>Technician, Educational Technology Services</b> B.B.A., Georgia Southern University; A.A.S., Asheville-Buncombe Technical Community College
	<b>Lee P. Schleining</b> _____ <b>Coordinator, Educational Technology Services</b> A.A.S., Asheville-Buncombe Technical Community College
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## FACULTY

## DIVISION OF ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	<b>Ned H. Fowler, E.M.T.-P (1983)</b> _____ <b>Dean, Allied Health and Public Service Education</b> A.A.S., Asheville-Buncombe Technical Community College; B.S., Western Carolina University; M.A. Ed., Western Carolina University
	<b>J. Tisha Anderson, C.D.A. (1999)</b> _____ <b>Instructor, Allied Dental Programs</b> Diploma, Asheville-Buncombe Technical Community College; Certified Dental Assistant
	<b>Christy C. Andrews, R.N. (1998)</b> _____ <b>Instructor, Nursing</b> B.S.N., Western Carolina University; M.S.N., University of North Carolina at Charlotte
	<b>Karla J. Antonio (2005)</b> _____ <b>Instructor, Veterinary Medical Technology</b> B.S., Boston University, Boston, Mass.; D.V.M., Texas A&M University, College Station, TX
	<b>Deborah J. Bakken (2006)</b> _____ <b>Instructor, Nursing</b> A.A.S., Nursing, George C. Wallace State Community College, Dothan, AL; B.S.N., George Mason University, Fairfax, Virginia; M.S.N., Touro University, Cypress, California
	<b>Tamara W. Baldwin, C.D.A., R.D.H.(1992)</b> _____ <b>Instructor, Allied Dental Programs</b> A.A.S., Asheville-Buncombe Technical Community College; B.S., Mars Hill College; M.A.Ed., Western Carolina University
	<b>Laura L. Brown, R.N., C.P.N., C.A.P.A., C.P.A.N. (2002)</b> _____ <b>Instructor, Nursing</b> Diploma in Nursing, Peter Bent Brigham Hospital School of Nursing; B.S.N., Winston Salem State University; M.S.N., Gardner Webb University



- 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; B.S., Oregon Institute of Technology
- 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)** \_\_\_\_\_ **Chairperson, Veterinary Medical Technology**  
A.A.S., Central Carolina Community College; B.B.A., Montreat College
- Dianne L. Davis (2007)** \_\_\_\_\_ **Interim Director, Basic Law Enforcement Training**  
A.A.S., Southwestern Technical Community College; B.S., Western Carolina University; M.S., Boston University
- 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)** \_\_\_\_\_ **Chairperson, Criminal Justice Technology**  
BLET Certificate, Asheville-Buncombe Technical Community College; B.A., M.A., University of New Mexico
- Kristy M. Frost, R.N., M.S.N., C.N.M. (2006)** \_\_\_\_\_ **Instructor, Nursing**  
B.S.N., McNeese State University; M.S.N., University of Texas Medical Branch
- Megan A. Getty-Odom (2004)** \_\_\_\_\_ **Interim Chairperson, 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, C.D.A., R.D.H. (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
- Jane H. Headland, R.N. (1998)** \_\_\_\_\_ **Instructor, Nursing**  
B.S., Grove City College; M.S., Virginia Polytechnic Institute and State University; M.S.N., University of Tennessee
- Thomas C. Heffner (2006)** \_\_\_\_\_ **Instructor, Early Childhood Education/Smart Start**  
B.S., Juniata College, Huntington, PA; M.Ed., University of North Carolina at Charlotte, Charlotte, NC
- 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
- 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
- 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
- Lydia E. Luka, R.N. (2005)** \_\_\_\_\_ **Instructor, Nursing**  
A.D.N., Miami Dade Community College, Miami, FL; B.S.N, Florida International University; M.S.N., 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
- M. Joan Muse R.N. (2004)** \_\_\_\_\_ **Instructor, Nursing**  
B.S.N., University of North Carolina at Greensboro

Administration,

Faculty,

and Staff

Administration,  
Faculty,  
and Staff

- Rhonda R. Owenby (2006)** \_\_\_\_\_ **Instructor, Nursing**  
A.D.N., McDowell Technical Community College; B.S.N., Western Carolina University; M.S.N., Western Carolina University
- 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
- Amanda R. Soule (2006)** \_\_\_\_\_ **Instructor, Emergency Medical Science**  
A.S., Asheville-Buncombe Technical Community College; B.S., University of North Carolina at Asheville
- Shaun Riley Tate, R.D.H. (1978)** \_\_\_\_\_ **Chairperson, Allied Dental Programs**  
B.S., East Tennessee State University; M.A.Ed., Western Carolina University
- Lori A. Tapp (2007)** \_\_\_\_\_ **Instructor, Veterinary Medical Technology**  
M.S.; D.V.M., University of Florida, Gainesville, FL
- Debra C. Whisenant, R.N. (2003)** \_\_\_\_\_ **Instructor, Nursing**  
B.S.N., Western Carolina University
- John C. Witherspoon (2006)** \_\_\_\_\_ **Chairperson, Fire Protection Technology**  
A.A.S., Asheville-Buncombe Technical Community College

## DIVISION OF ARTS AND SCIENCES

- Kenet M. Adamson (2002)** \_\_\_\_\_ **Dean, Arts and Sciences**  
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